2020 Quality Care Symposium

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Costs to healthcare payers associated with clinical trial (CT) participation in metastatic non-small cell lung cancer (NSCLC). First Author: Cristina Merkhofer, University of Washington, Seattle, WA

Background: To assess the financial implications of therapeutic CT participation for healthcare payers, we compared first-line (1L) and second-line (2L) total direct medical costs from the payer perspective for 1L and 2L. We performed a difference of difference (Diff trial minus Diff non-trial) analysis to determine the presence of a cost discussion, the cost-related topic, and any emergent factors. Results: Findings showed increases in patients’ self-efficacy for managing treatment costs (p < 0.02) and interacting with oncologists (p < 0.001). Cost-related distress decreased but not significantly (p = 0.20). Patients reported the DISCO App was understandable (4.5 out of 5), useful as they talked with their oncologist (M = 4.0), and 84% of patients reported needing less than 15 minutes to use the DISCO App. Most (94%) interactions were recorded in (two cases) difficult situations prevented videos from being recorded. The videos showed that insurers included discussions of the DISCO App in effective and clinical management. The most frequently discussed topics were: insurance, time off work, and financial navigation. Frequently, the oncologist asked the patient for his/her question list and discussed/answered the questions. Conclusions: Findings suggest that the DISCO App is a feasible tool to implement on clinical and effective in improving patient-oncologist cost discussions and financial toxicity-related outcomes. Patient acceptance of the DISCO App and oncologist engagement suggested the intervention prompted cost discussions. Next steps include conducting a randomized controlled trial (RCT) to determine the effectiveness of the DISCO App on financial toxicity, and other outcomes. Clinical trial information: NCT03676920. Research Sponsor: Karmanos Cancer Institute.
Improving patient outcomes with oncology hospital at home: A program model.

**Background:** Hospital at Home provides acute hospital level care to patients in their homes, diminishing the need for inpatient care or emergency department (ED) use. It has been evaluated for a variety of acute and chronic conditions but with little focus on oncology. Research Sponsor: None.

**Objective:** To describe a new program that demonstrates an improved quality of care for patients requiring oncology care and decreased healthcare costs. Research Sponsor: Cambia Health Foundation.

**Methods:** A single-center, prospective, non-randomized study enrolling patients with cancer who were admitted to HH between 8/2018 and 10/2019. We examined patient characteristics, the reason for referral, team structure, services provided, and provider visit pattern. Results: The 169 patients referred to HH were predominately female (62%), white (83%), with metastatic disease (78%) and an average age 62 years. The most common diagnoses were G1, lung, GU and GYN cancer. All required acute level medical care and were referred by their oncology or inpatient provider after hospitalization. The HH multidisciplinary team was led by a nurse practitioner (NP) partnering with pain medicine and specialty teams. Registered nurses (RN) and other home health personnel were provided by a community-based home health agency. The most common reasons for referral were acute pain, dehydration and electrolyte imbalance, infection, unstable symptoms, failure to thrive and post-surgical needs. The most common interventions provided by HH were: assessment and management of symptoms, medication monitoring and titration, monitoring lab chemistries, intravenous administration and administration of medications and fluids, and wound, drain and line assessment and management. Conclusions: Thirty-two of 36 (89%) HH visits were completed within 5 RN visits in the first week. Health care utilization and cost outcomes were recently reported at the ASCO Virtual Scientific meeting and demonstrated HH patients had fewer hospitalizations, shorter length of stay, decreased ED use and lower costs than the comparison group. HH has proven to be an effective and efficient way to successfully manage a variety of oncology acute care needs in patients’ homes averting further hospitalization or ED use. Hospital at home shows promise as an oncology care model. Research Sponsor: Cambia Health Foundation.

Redesigning care coordination from the patient’s perspective.

**Background:** Cancer patients are frequently admitted to the hospital requiring medical oncologists to take an active role in coordinating care with multiple teams. In an effort to redesign care to put patients at the center and address oncology’s underutilized role, the digital program evaluation and improvement (DPEI) program at the Michigan Oncology Quality Improvement Collaborative (MOQC) began a new program focusing on communication, coordination, and collaboration between the hospital and outpatient oncology practice. Research Sponsor: None.

**Objective:** To design, implement, and evaluate a new program focused on care coordination to improve the patient experience. Research Sponsor: Mark Liu, Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, New York, NY.

**Methods:** Patients were invited to participate in the study when admitted to the hospital for any reason. Patients at Mount Sinai West, a hospital on the Mount Sinai West campus in New York, NY, were invited to participate in the study. Research Sponsor: Mark Liu, Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, New York, NY.

**Results:** The overuse of neurokinin-1 receptor antagonists (NK1-RAs) is a focus of quality measurement within the American Society of Clinical Oncology. The Michigan Oncology Quality Oncology Practice Initiative (ASCO-QOPI) and the American Board of Internal Medicine (ABIM) as a Choosing Wisely measure. The Michigan Oncology Quality Oncology Practice Initiative (ASCO-QOPI) and the American Board of Internal Medicine (ABIM) as a Choosing Wisely measure.

**Impact of oncology urgent care center on healthcare utilization.**

**Background:** Studies suggest that many Emergency Department (ED) visits and hospitalizations for cancer patients may be preventable. CMS has made changes to the hospital outpatient reporting program (OP-35) targeting ED visits and admissions in treatment patients for preventable conditions. Oncologic urgent care centers aim to streamline care for this population. Fox Chase Cancer center has developed an oncologic urgent care center (OCC) referral Unit (DRU) in July 2011. We sought to assess the impact of the DRU on care utilization. Methods: We abstracted visits to our adjacent hospital (Jeaneis) ED and the DRU from January 2014-June 2018. Visit rates represent the ratio of visits over the total number of patients with a clinic visit at FCCC per year. ED and DRU visits were associated with both a cancer and visit diagnosis per the International Classification of Disease (ICD). Patient demographics were abstracted. We also analyzed visit charges, inpatient admission, and 30-day therapy utilization (chemotherapy, immunotherapy, radiation). Results: A total of 13,210 visits were analyzed including 5,789 ED visits and 7,421 DRU visits. Visits to the Jeaneis ED increased over time. The average age of patients at time of first visit was 63 and visits were most common in females and Caucasians. Hispanic, and African American (AA) patients were more likely to visit the ED compared to the DRU (OR: 7.54 and 1.30). Patients with GI (27%) and thoracic (15%) malignancies had the most visits. Commercial insurance use was most common (48%) followed by Medicare (34%) and Medicaid (6%). DRU use was most frequent on Mondays (22%), while ED use occurred the most on Sundays (7%). The most common DRU visit diagnoses in order of prevalence were dehydration, nausea/vomiting, abdominal pain, fever, shortness of breath, fatigue, diarrhea, cellulitis/rash, constipation and anemia. Inpatient admission rates were similar between the two settings (p=0.8176). Patients on active cancer treatment more frequently presented to the DRU in comparison to the ED (p<0.0001). The average charges were $22,622.2 for a DRU visit vs. $10,253.44 for an ED visit. Conclusions: The DRU visits overall weigh below the more frequent ED visits in Hispanic and AA patients both suggest a need for a greater urgent care access. Many of the most common visit diagnoses to the DRU align with CMS’s list of preventable conditions, demonstrating the DRU’s success as a triage center. Current interventions were associated with considerable cost savings, supporting the use of cancer urgent care centers as a cost-effective method to reduce acute care. Research Sponsor: None.
Feasibility of and associated cost savings from transitioning to therapeutic biosimilar use in a large community oncology network. First Author: Garrett Young, OneOncology, Nashville, TN

Background: The use of biosimilar drugs in the treatment of cancer offers an opportunity for oncology providers to decrease total cost of care while preserving quality. However, it remains unclear whether providers and patients may resist biosimilar use due to concerns over safety and efficacy. Our national network of 5 practices with over 100 clinics committed to a conversion to therapeutic biosimilars for trastuzumab and bevacizumab after their introduction in July 2019. Methods: Common steps to foster therapeutic biosimilar conversion included frequent communication from medical directors to providers and staff, incorporation of biosimilars into default treatment regimen orders, providing clinical champions to identifying candidates for conversion, and tracking reasons why biosimilar switch did not occur. Most practices prioritized converting patients initiating new treatments, then later transitioning patients receiving maintenance therapy. This phased approach was taken to ensure that prior authorization and patient consent could be obtained prior to conversion. Rates of biosimilar use were calculated by comparing the number of administrations for which a biosimilar was given to the total number of administrations for which a biosimilar could have been given. Cost savings were calculated by comparing the difference in Medicare allowable rates for each original and biosimilar drug pair at the time of administration. Results: Biosimilar use increased over time at all practices, from 0% to an average of 61% for trastuzumab and 78% for bevacizumab. The decrease in cost attributed to the use of biosimilars in the study period totaled over $4.4 million. Challenges to biosimilar use included physician preference for the originator drug, difference in preferred agents across payers, and challenges with biosimilar drug storage. Patients rarely had concerns over efficacy and safety. Conclusions: Therapeutic biosimilar adoption in a large oncology network is feasible and can lead to significant cost savings. Research Sponsor: None.

Cost savings of biosimilars in oncology: A single institution experience. First Author: Megan Mullally, Intermountain Healthcare, Sandy, UT

Background: Biosimilar medications have increasingly gained regulatory approvals in recent years. Numerous conditions in the fields of hematology, oncology, rheumatology, and endocrinology have a biosimilar treatment option available. Some biosimilar agents have been obtained at a significantly lower cost than reference medications. Methods: In those metastatic breast cancer, Oncology Pharmacy and Therapeutics (P&T) committee manages and maintains the formulary of accepted drugs. The committee consists of pharmacists, medical oncologists and oncology nurses. Biosimilar medications were approved in place of reference medications for the following indications: bevacizumab, trastuzumab, and rituximab. Results: Annually, we administer about 6,450 combined doses of pegfilgrastim, bevacizumab, trastuzumab, and rituximab. Assuming 70% conversion from the reference medication to biosimilar, transitioning from the above-listed reference medications to biosimilar would save an estimated $6.3 million annually (Table). This includes a $1.175 million savings from transitioning to rituximab alone. In addition, transitioning trastuzumab from a single dose vial to multidose vials is estimated to save an additional $730,000. Conclusions: Biosimilar agents can reduce the cost of oncology care to patients treated at our institution. We are utilizing biosimilar agents as part of our ongoing mission to decrease the financial toxicity of treatment for patients with cancer. Research Sponsor: None.

Reference Medication Doses Administered Annually 2021 Savings
Pegfilgrastim 2,650 $696,000
Bevacizumab 1,500 $2,100,000
Trastuzumab 1,200 $1,350,000
Rituximab 1,100 $2,500,000
Total 6,450 $6,246,000

Leveraging performance improvement (PI) strategies to decrease emergency department visits and inpatient admissions of patients receiving IV nutrition. First Author: Chris Stewart, The Ohio State University Hospital, Columbus, OH

Background: Per CMS, ED visits and inpatient admissions of patients receiving IV nutrition continually increases. As patients attempt side effect management at home, their preferences for the originator drug, difference in preferred agents across payers, and concerns over safety. Conclusions: Therapeutic biosimilar adoption in a large oncology network is feasible and can lead to significant cost savings. Research Sponsor: None.

Adherence to and determinants of guideline-recommended biomarker testing and targeted therapy in patients with gastroesophageal adenocarcinoma: Insights from routine practice. First Author: Kelsey S. Lau-Min, University of Pennsylvania Abramson Cancer Center, Philadelphia, PA

Background: Precision oncology has transformed care for patients with advanced HER2+ gastroesophageal adenocarcinoma (GEA), where the addition of anti-HER2 therapy with trastuzumab improves overall survival and is now incorporated into national guidelines. However, little is known about adherence to and determinants of timely HER2 testing and trastuzumab initiation in routine care. Methods: We performed a retrospective study of advanced GEA diagnosed between 1/2011 and 6/2019 in the nationwide Flatiron Health EHR-derived deidentified database. We calculated annual prevalence of timely HER2 testing and identified determinants of timely HER2 testing and trastuzumab initiation within 21 days after diagnosis. Results: We included 6,479 patients with advanced GEA; 973 were HER2+ of whom 560 (64%) initiated trastuzumab. Prevalence of timely HER2 testing increased from 22.4% in 2011 to 44.5% in 2019. Timely trastuzumab initiation remained stable at 18.0% over the same period. No appreciable differences in timely testing or trastuzumab initiation by age, sex, race or payer category were noted. Patients with early-stage GEA who subsequently developed metastatic disease were less likely to undergo timely HER2 testing and trastuzumab initiation in routine care. Results: We included 6,479 patients with advanced GEA; 973 were HER2+ of whom 560 (64%) initiated trastuzumab. Prevalence of timely HER2 testing increased from 22.4% in 2011 to 44.5% in 2019. Timely trastuzumab initiation remained stable at 18.0% over the same period. No appreciable differences in timely testing or trastuzumab initiation by age, sex, race or payer category were noted. Patients with early-stage GEA who subsequently developed metastatic disease were less likely to undergo timely HER2 testing and trastuzumab initiation in routine care. Conclusions: Among patients with advanced GEA, guideline-recommended HER2 testing and HER2 targeting therapy initiation remain underutilized. Misclassification due to missing testing or treatment performed outside the Flatiron Network is a study limitation. Up-take of precision oncology may improve with implementation of universal HER2 testing of GEA patients regardless of stage and multidisciplinary review of discordant HER2 test results. Research Sponsor: None.

Poster Session

The first step of the project was developing a systemized report capturing specific data points, including practice site visits/ED visits of admission. We calculated for missing data. Results: All chemotherapy infusions were studied for 4Q 2018 and 1Q 2019 totaling 2,018 and 2,064 infusions respectively. The implementation of PI strategies resulted in significant improvements not only in overall IP admissions and ED visits, but also in key areas such as time of day and primary diagnosis (see table). Conclusions: PI strategies have demonstrated an impact on decreasing both IP utilization and ED visits and continues to evolve. This engagement has contributed to change in practice patterns, aligned our institution with better side effect management at home while relieving the burden to patients during chemotherapy treatment. In addition, as admissions decrease, treatment costs are impacted as well. Research Sponsor: None.

Poster Session

Poster Session
Variations in recommended surveillance in colorectal cancer survivorship care plans. First Author: Alaina Chodoff, Johns Hopkins, Baltimore, MD

Background: Survivorship care plans (SCPs) outline pertinent information about a cancer survivor’s treatment and follow-up care. We describe the content of colorectal cancer (CRC) SCPs, completed as a randomized controlled trial of SCPs, and evaluate whether follow-up recommendations are guideline concordant. Methods: We analyzed 74 CRC SCPs from an academic and community center. Frequency distributions and descriptive statistics were calculated for the entire cohort and separately by recruiting site. Follow-up recommendations were compared to American Cancer Society (ACS), American Society of Clinical Oncology (ASCO) and National Comprehensive Cancer Network (NCCN) guidelines (Table). Results: Content routinely provided in SCPs (>80%) included patient demographics, cancer diagnosis, treatment details (surgery, chemotherapy, radiation therapy) as well as treatment-related side effects. SCP content specified less frequently included cancer stage, cancer risk (predisposing conditions), and recommendations for genetic counseling/testing and health promotion. Nearly all SCPs from the community site provided uniform, guideline-concordant follow-up. At the academic site, on average, more than 15 follow-up recommendations were listed for each surveillance modality, except colonoscopy. Among the SCPs that specified the frequency of follow-up care, the rate of guideline-concordance was 55/62 (36%) for visits, 29/43 (67%) for imaging, 12/45 (27%) for laboratory and 39/39 (100%) for colonoscopy. Conclusions: SCPs consistently provided information about guideline-recommended follow-up, but often omitted information about cancer stage, risk and prognosis. There was considerable variation between cancer centers in the follow-up recommendations but, despite this, consistent recommendations were suggested for CRC survivors. Future work to improve the consistency of SCP follow-up recommendations with guidelines may be needed. Clinical trial information: NCT03035773. Research Sponsor: Patient-Centered Outcomes Research Institute.

Post-treatment expert consensus surveillance guidelines.

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<th>Follow-up Visit</th>
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Q: every; Y: years; mo: months *Repeat based on findings (may differ for patients with rectal cancer)

1 For rectal cancer, CT scan Y3-6 mo Y12, 6-12 mo Y15

4R program results in breast cancer: The impact of 4R Care Delivery Model on timing and sequence of guideline recommended care. First Author: Christine B. Weldon, Northwestern University Feinberg School of Medicine, Chicago, IL

Background: We previously proposed a 4R care delivery model which enables patients and care teams to manage timing and sequence of interdependent, time sensitive care with a novel multimodality 4R Care Sequence plan (NCI ASCO Task Force, NCI JOP 2016). We report final results of a pre-test/post-test study in 1542 patients at 79/4 centers (4 academic and 6 non-academic) from 2016 to 2019. Methods: 4R Sequences were developed to stage O-III breast cancer patients (4R cohort, N = 422) at participating centers. Analyses of clinical and patient-reported data compared the 4R Sequences with a historical control cohort of patients who received care according to the same centers (N = 462). Results: We significantly improved 5 guideline recommended referral metrics and 4 referral completion metrics indicating receipt of care by patients who were referred (Table). Although significantly increased, referrals to dental visit and smoking cessation before treatment remained low (< 20% and < 10% respectively). Patient survey comments indicated that insufficient lead time to quit smoking or obtain fertility before cancer treatment was a key barrier for completing these referrals. Conclusions: 4R markedly improved referral and receipt of interdependent guideline recommended breast cancer care for most metrics. Future 4R program should optimize the timing of referrals within the 4R Care Sequence to allow sufficient time for smoking cessation and fertility care before treatment initiation. Research Sponsor: None.

Evaluating compliance of NCCN cancer and chemotherapy-induced anemia guidelines in a community healthcare setting. First Author: Jamie Haber, University of Connecticut Department of Medicine, Farmington, CT

Background: The National Comprehensive Cancer Network has released guidelines for management of cancer- and chemotherapy-induced anemia which are defined as Hb less than 11g/dL or a greater than 2g/dL decrease from baseline. The myelosuppressive effects of cancer, chemotherapy and associated treatments, can adversely impact care, with each cycle of chemotherapy associated with worsening anemia. It is important to properly identify and treat anemia in cancer patients in a timely manner. This project evaluates the degree to which NCCN guidelines are followed in a multi-site community healthcare setting. Methods: Obtained patient records from a hospital in Oklahoma from January 1, 2015 to December 31, 2015. In a 4 month period (Nov 2019-Feb 2020), we were started on new cancer chemotherapy treatment plans. Patients on single agent immunotherapy or hormone therapy only plans were excluded. 598 patients met the inclusion criteria, 452 patients (76.6%) met criteria for cancer- and chemotherapy-induced anemia and who received recommended work up and treatment based on NCCN guidelines. Age, sex, disease, renal function, and goals of treatment were also recorded. Results: A total of 839 patient records were obtained. 59 patients met the inclusion criteria, 452 patients (76.6%) met criteria for cancer- and chemotherapy-induced anemia and who received recommended work up and treatment based on NCCN guidelines. Research Sponsor: None.

COST, VALUE, AND POLICY

Poster Session

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Poster Session
Protocol concordance and impact of protocol deviations on selected outcomes in delivery of high-dose methotrexate in acute lymphoblastic leukemia in Sri Lanka. First Author: Sanjeewa Gunasekera, National Cancer Institute Sri Lanka, Maharagama, Sri Lanka

Background: In Sri Lanka, children with acute lymphoblastic leukemia are treated on the UKALL 2011 protocol, which includes high-dose methotrexate (HDXTX) in high risk patients. Safe delivery of HDXTX is challenging in low resource settings, which may lead to deviation from accepted guidelines which can occur frequently and result in toxicity, subsequent treatment delays, and in extreme cases, death. The goal of this study was to compare current practices to the treatment and care details described in the protocol to identify the incidence and impact of guideline-discordant care to deliver HDXTX more safely children with cancer in Sri Lanka.

Methods: We reviewed medical records to assess guideline concordance in 4 critical aspects of HDXTX delivery: 1) continuous folinic acid (FA) on day 8, 2) urine pH readings in the 2-hour period before starting HDXTX, 24-hour duration of MTX infusion (assumed to be at least 360 hours), and 3) FA dose less than 2 mg/kg for each course (appropriate duration of rescue). We analyzed how each deviation influenced AKI (creatinine increase of 0.3 mg/dL or more), infection, and treatment delays (defined as recovery delayed 7 days or longer from the 14 days expected between courses of HDXTX).

Results: We analyzed 209 HDXTX courses in 91 patients younger than 20 years, including 105 girls (56%). In 83 courses (27%) FA urine was not documented prior to the first dose of folinic acid administered later than 36 hours from start of HDXTX infusion (no inappropriate early rescue), and the administration of at least 5 folinic acid doses per course (appropriate duration of rescue). We found that while deviation from one guideline was not associated with treatment delays or significant increase in infection, deviation from 4 guidelines were significantly associated with AKI or treatment delays. Patient sex was also not associated with any difference in guideline discordance or outcome (p>0.1 in all comparisons). Conclusions: Significant deviations from HDXTX administration guidelines were common, especially early completion of infusion. However, outcomes were not impacted so quality standards may require adjustment to focus on extreme deviations likely to impact patient outcomes. Research Sponsor: BTG International, Inc.

Poster Session
A pilot study to increase adherence to ASCO Choosing Wisely recommendations for breast cancer surveillance at community clinics. First Author: Karma L. Kreizenbeck, Fred Hutchinson Cancer Research Center, Seattle, WA

Background: ASCO 2012 Choosing Wisely recommends against serum tumor marker tests and advanced imaging for breast cancer survivors who are asymptomatic for recurrence. Our pilot aimed to measure and raise adherence to recommendations through a patient video at regional community clinics. Methods: Eligibility for study included patients with 1+ long-term follow-up visit within 3 months of end of treatment in the pre- or post-intervention period. Tumor registry interviews were queried for patients who viewed the video (130 of 145, 90%) than those who did not (452 of 556, 81%) in the post-intervention period. The higher TM adherence among patients who viewed the video and the wide range in adherence among providers suggest that tumor marker use may be both patient- and provider-driven. Population characteristics may explain some of the variation in adherence. Conclusions: While adherence to recommendations regarding high-cost imaging was high, widespread variation in tumor marker adherence among providers and high baseline adherence for advanced imaging suggests that interventions targeting surveillance testing may wish to focus primarily on tumor markers and provider outreach. Research Sponsor: Seattle Cancer Care Alliance, Fred Hutch.

Poster Session
Results of a pilot study to increase adherence to ASCO G-CSF recommendations at community clinics. First Author: Karma L. Kreizenbeck, Fred Hutchinson Cancer Research Center, Seattle, WA

Background: An ASCO 2012 Choosing Wisely recommendation cautions against the use of primary prophylactic colony stimulating factors (PP-CSF) for chemotherapy regimens with <20% risk of febrile neutropenia.FN We piloted an intervention to assess the feasibility and impact of using academic detailing and an automated CSF ordering system on CSF prescribing at 6 regional community oncology clinics in Washington State. Methods: The intervention was 1) academic detailing for oncologists during a regular staff meeting and 2) reconfiguring ordering systems to show FN risk and PP-CSF recommendation in a passive alert and include or exclude CSF orders with orders with <20% or >20% FN risk regimens, respectively. Clinical tumor registries were queried for patients with stage I-IV breast, non-small cell lung, or colorectal cancer starting first-line chemotherapy pre- or post-intervention. PP-CSF use, FN risk factors, and chemotherapy regimens matching the study protocol were manually abstracted. A regimen order was coded as adherent if it is low (<10%) FN risk without PP-CSF use; intermediate (10-20%) FN risk without PP-CSF use or FN risk factors are present; or high (>20%) FN risk with PP-CSF use. Results: The intervention was successfully implemented at 4 out of 6 participating clinics. The remaining 2 clinics were transitioned from paper to electronic orders in 1-2 years or using a system managed by a non-participating hospital. Adherence across the four implementing clinics increased after the intervention. *=p<0.05. Implementation of the CSF order-entry intervention was successful across a variety of ordering systems, including paper-based systems. Overall, while adherence prior to the intervention was high for these clinics, the order entry systems significantly improved adherence. Population characteristics and data availability may account for variation in adherence. Conclusions: An intervention with both academic detailing and ordering system presets may help increase adherence to Choosing Wisely recommendations. Research Sponsor: Seattle Cancer Care Alliance, Fred Hutchinson.

Poster Session
Current state assessment of the organization and delivery of systemic treatment in Ontario. First Author: Kathy Vu, Cancer Care Ontario, Toronto, ON, Canada

Background: In 2019, Ontario Health (Cancer Care Ontario) published 54 standards to ensure high quality and safe delivery of systemic treatment (ST) in Ontario, along with 16 recommendations for take-home cancer care (THCD). The standards/recommendations focused on 7 domains for the delivery of ST and 8 domains for THCD. These domains varied between the two documents but also overlapped on issues including prescribing, patient care, patient education and training and education for providers. The standards for ST delivery were also prioritized according to Very High, High or Medium priority with regards to implementation expectations. The objective of this project was to obtain a baseline assessment of alignment with the standards/recommendations for all ST sites within Ontario. Methods: A validated electronic survey that linked to all standards/recommendations was distributed to 75 ST sites in August 2019. Sites had 8 weeks to complete the survey with their multi-disciplinary teams. Data was analyzed centrally using quantitative analysis methods by region as well as by site level. Results: The response rate was 100%. Overall, alignment in all domains was higher for intravenous cancer drug (IVCD) delivery as compared to THCD delivery. Important areas of gaps include CPOE/PPO use (75% for both IVCD and THCD); appropriate drug labels (90% for IVCD versus 52% for THCD); prescribing/dispensing independent double checks (IDC) (95% for IVCD versus 38% for THCD); pump independent double check (IDC) (83% of sites continuously ST with central line (86% of sites); standardized tool for THCD education (40%); and oncology training/education (96% of RNs versus 20% of pharmacists). Conclusions: The main gaps that were identified through the current state assessment were related to THCD, as opposed to IVCD. To ensure alignment with the standards/recommendations, there is a need to focus on an area of focus for quality improvement. The survey was instrumental in informing provincial, regional, and local strategies to address these gaps and to ensure high quality, safe practices are embedded in ST delivery as outlined in the published best practices guidelines. Research Sponsor: Cancer Care Ontario.
21 Poster Session
Comparing characteristics and outcomes of cancer to non-cancer patients admitted to general internal medicine (GIM). First Author: Lawson Eng, Division of Medical Oncology and Hematology, Princess Margaret Cancer Centre, Toronto, ON, Canada

Background: Cancer prevalence is rising and there is a corresponding increase in hospitalizations across the cancer continuum. However, little is known about the patterns of care, outcomes, and costs of cancer patients who are admitted to GIM services. This study sought to characterize and compare the clinical and hospital stays of cancer patients with other non-cancer patients admitted to GIM from 2010 to 2017 when we deterministically linked administrative data with each hospital’s electronic information (pharmacy, orders, notes, laboratory/imaging and results) at the patient level. Multivariable regression models compared characteristics and outcomes between cancer and non-cancer patients for the top 5 non-cancer patient discharge diagnoses. Results: Among 230,040 hospitalizations, 15% had cancer listed as an ICD-10 comorbidity. The most common cancer disease sites were gastrointestinal (20%), lung (13%) and leukemia (11%). The most common discharge diagnoses for cancer patients were disease progression (9%), palliative care (6%), pneumonia (4%), leukemia (4%) and lung cancer (4%), while for non-cancer patients: were: heart failure (5%), pneumonia (5%), stroke (5%), COPD (2%) and urinary tract infections (5%). In general, compared to non-cancer patients, cancer patients were younger (70 vs 72), had greater length of stay (LOS; 6.4 vs 4.6 days), in-hospital mortality (16% vs 5%), ICU use (12% vs 11%), 30 day readmission rate (17% vs 10%) and were more likely to receive chemotherapy and/or immunotherapy in the last 14 days of life (64% vs 52%), MRIs (14% vs 12%) and interventional procedures (22% vs 8%) (p < 0.001, all comparisons). When evaluating the top 5 non-cancer patient discharge diagnoses, results (adjusted for age, gender, Charlson comorbidity score and hospital) were similar wherein cancer patients had a higher in-hospital mortality (aOR = 2.02 p = 0.001) and length of stay (LOS; 6.4 vs 4.6 days), in-hospital mortality (16% vs 5%), ICU use (12% vs 11%), 30 day readmission rate (17% vs 10%) and were more likely to receive chemotherapy and/or immunotherapy in the last 14 days of life (64% vs 52%), MRIs (14% vs 12%) and interventional procedures (22% vs 8%) (p < 0.001, all comparisons). When evaluating the top 5 non-cancer patient discharge diagnoses, results (adjusted for age, gender, Charlson comorbidity score and hospital) were similar wherein cancer patients had a higher in-hospital mortality (aOR = 2.02 p = 0.001), 30 day readmission rate (aOR = 1.09 p = 0.08) and were more likely to receive CTs (aOR = 1.88 p < 0.001), MRIs (aOR = 1.66 p < 0.001) or interventional procedures (aOR = 1.78 p = 0.001, despite similar initial LOS (5.7 vs 5.3 days) p = 0.35). Results were similar across discharge diagnoses.

Conclusions: Cancer patients represent a unique population on GIM and have higher resource use, mortality and LOS compared to non-cancer patients, with similar mortality even for the same non-cancer diagnoses. Specialized models of care for hospitalized cancer patients may be warranted. Research Sponsor: 1) Department of Medicine, University of Toronto Networks Grant, 2) Department of Medicine, St Michael’s Hospital Priorities Fund 3) Canadian Cancer Society Research Institute - Innovation Grant.

22 Poster Session
Real-world patterns of chemotherapy and immunotherapy utilization at end of life in a large community oncology network. First Author: Stephen Matthew Schleicher, Tennessee Oncology, Nashville, TN

Background: End-of-life anti-neoplastic treatment does not improve quality of life nor prolong survival of advanced cancer patients. It is also not cost-effective. To-date, there has been little data examining real-world patterns of chemotherapy and immunotherapy treatment at end of life. We investigated use of chemotherapy and/or immunotherapy in the last 14 days of life across a community oncology network of 5 practices, 100 sites of care, and 160 oncology providers. Methods: Using a real-time, network-wide database, we identified patients with solid tumor malignancies who died during an episode of active treatment, defined as having received intravenous (IV) chemotherapy and/or immunotherapy within 90 days of death. We then identified patients in this cohort who received IV chemotherapy and/or IV immunotherapy within 14 days of death (TxEoL). We stratified patients on the basis of tumor type, treatment type, line of therapy, patient age, patient race, and oncology provider years in practice. Statistical significance was assessed using Pearson’s Chi-squared test. Results: 2,858 qualifying solid tumor cancer patients with dates of death between 1/1/2019 and 5/31/2020 were identified. Observed rates of TxEoL were 16.7% for immunotherapy alone vs. 19.6% for chemotherapy +/- immunotherapy (p = 0.09). We found high variation in TxEoL across 132 oncologists that had 5 or more deceased patients (range: 0% to 50%, mean: 19.2%, median: 19.6%). We found no association of TxEoL with physician years in practice, patient age or race. Rates of TxEoL in the first-line setting were significantly higher than in second-line setting or later (23.3% versus 16.4%, p < 0.01). Patients with head and neck, pancreatic, and hepatobiliary malignancies were the most likely to receive TxEoL, whereas the patients with prostate, brain, and ovarian malignancies were the least likely to receive TxEoL. Conclusions: Our data and method identified wide variation in TxEoL patterns across a large community oncology network, suggesting room for provider-level interventions to improve treatment decisions in patients at high risk of death. Studies within our group, such as examining the impact of palliative care referrals on IV anti-cancer treatment in patients potentially facing end of life, are ongoing. Research Sponsor: None.

23 Poster Session
Reducing futile acute care services (ACS) for terminally ill cancer patients (Dignity Project). First Author: Hind Salama, Department of Oncology, King Abdulaziz Medical City, Ministry of National Guard - Health Affairs, Riyadh, Saudi Arabia

Background: Patients with terminal diseases frequently undergo procedures and interventions that are futile and maybe detrimental to the patients’ quality of life. We conducted a quality improvement project aimed to reduce futile acute care services (ACS) for cancer patients treated with a palliative intent. Methods: A multidisciplinary team retrospectively reviewed the records of terminally ill cancer patients who died during the hospitalization at our institution. King Abdulaziz Medical City, Riyadh, Saudi Arabia. We included all patients expired between November 2017 to May 2018. The review aimed to assess the magnitude of improper utilization of acute care services (ACS) such as critical care response team (CCRT), cardio-pulmonary resuscitations (CPR) and admission to intensive care unit (ICU). A root cause analysis and process mapping were conducted to identify reasons for over utilization of these services. Time documentation of goals of care was identified as a main reason for this problem. Then interventions were implemented to improve the practice. Post intervention data was captured and compared to the baseline data. Results: After delivery of staff education sessions and implementation of mandatory documentation of goals of care in the electronic healthcare record system, the timely documentation of goal of care for patients with palliative intent had significantly increased from 59% of cases in the baseline to 86% for the post intervention phase. As a result, admission to ICU decreased from 32% of cases in the pre intervention phase to 14% in the post intervention phase reducing monthly cost of admission to the ICU by 40% and estimated to be on average of $48,000 USD monthly ($57,600 USD annually). Conclusions: Our interventions resulted in improved documentation of the goal of care leading to decrease in the utilization of acute care services (ACS) including reduction of intensive care unit (ICU) admissions and cost. This outcome is even more relevant nowadays during COVID-19 pandemic and the pressure on critical care resources. Improvement is sustained by integrating of the financial the work process and electronic medical records. Research Sponsor: None.

24 Poster Session
Poster Highlights Session: Displayed in Poster Session
Use of a rapid access multidisciplinary bone metastases clinic to decrease financial toxicity for patients undergoing single-fraction palliative radiation. First Author: Jose Alberto Maldonado, University of Texas MD Anderson Cancer Center, Houston, TX

Background: A rapid access bone metastases clinic (RABC) was instituted at MD Anderson Cancer Center (MDACC) to allow outpatient consultation, simulation and radiation treatment (RT) initiation in ~ 6 hours for patients with painful bone metastases patients underwent multidisciplinary evaluation with orthopedics and radiation oncology. One aspect of financial toxicity is distress due to out-of-pocket (OOP) cost associated with a treatment. We hypothesized the RABC would decrease financial toxicity for MDACC patients over traditional RT. Methods: RABC patients surveyed between April 2018 and January 2020 were included. Patients were asked to estimate OOP cost for RT (including travel and treatment cost) and perceived cost burden of treatment. Travel distance was hometown distance to MDACC. Subset analyses were performed for patients receiving single fraction (1fx) and 2-5 fractions (2-5fx). Estimated OOP cost (fx: RABC= $34, nonRABC= $20; 2-5fx: RABC= $4, nonRABC= $22), perceived cost burden (fx: RABC= $32, nonRABC= $27; 2-5fx: RABC= $7, nonRABC= $38) and travel distance (fx: RABC= $34, nonRABC= $25; 2-5fx: RABC= $7, nonRABC= $38) were compared using a Mann-Whitney U Test. Travel distance was also compared to OOP cost. Patients treated with 6+ fractions were excluded. Results: Median estimated OOP cost was significantly lower for 1fx RABC patients vs. 1fx non-RABC patients ($450 [IQR 1875-51,045] vs. $2,000 [IQR 628-54,000]; p = 0.008), but there was no significant difference for 2-5fx ($1,090 vs. $1,375; p = 0.593). Overall patient satisfaction with cost burden was high regardless of treatment setting (1fx: $187.5-$1,050 vs. $2,000 [$625-$4,000]; p = 0.008), but there was no statistically significant difference for 2-5fx ($1,090 vs. $1,375; p = 0.593). Other patient satisfaction with cost burden was high regardless of treatment setting (1fx: $187.5-$1,050 vs. $2,000 [$625-$4,000]; p = 0.008), but there was no statistically significant difference for 2-5fx ($1,090 vs. $1,375; p = 0.593). Travel distance was directly correlated with out of pocket cost for single fraction (fx: R = 0.125, p = 0.0109; 2-5fx: R = 0.037, p = 0.3433). Conclusions: The establishment of a RABC at MDACC significantly decreases financial toxicity for patients receiving RT, but not in the 2-5fx cohort. Increased financial toxicity was associated with longer distance travel for fx palliative radiation. Implementation of a similar model in local community centers may decrease financial toxicity for patients receiving palliative radiation. Research Sponsor: None.

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25 Poster Session

Prognostic value of the “surprise question” among UPMC Hillman Cancer Center patients with select stage IV cancer diagnoses. First Author: Kristine Gade, University of Pittsburgh, Department of Medicine, Division of Hematology/Oncology, Pittsburgh, PA

Background: The “Surprise Question” – Would I be surprised if this patient died in the next 12 months? – was developed to help clinicians predict when patients have a finite amount of life. Limited data has shown that the “Surprise Question” is modestly predictive of mortality (CMAJ. 2017 Apr 3;189(13):E484-E493), though its performance seems to be superior among cancer patients (Palliat Med. 2014 Jul;28(7):959-964). Via Oncology Pathways, a platform used by UPMC Hillman Cancer Center and other institutions nationwide to guide treatment decisions, asks physicians the “Surprise Question” when a new treatment plan is implemented for patients with metastatic cancer. We assessed the “Surprise Question’s” ability to predict survival among Hillman Cancer Center patients with select stage IV diagnoses. Methods: We queried the UPMC Hillman Cancer Center Registry Information and Reporting Services for cases of colorectal, non-small cell lung, prostate, pancreatic, and breast cancer with clinic visits between 1/1/2016 and 12/31/2017 and residence in Allegheny County, the primary referral base for the UPMC Hillman Cancer Center network’s flagship facility. Results: The “Surprise Question” was completed for 1,584 patients with metastatic disease of the 5,330 patients that were screened. “No” was the response for 891 patients (56.3%). Mortality at 12 months for patients who answered the “Surprise Question” was “no” was 63.3%, compared to 32.5% for those for whom the answer was only “yes” (P < 0.0001). The sensitivity of the “Surprise Question” was 71.4% (95% CI 69.0 - 73.8%), and the specificity was 58.7% (95% CI 56.3 - 61.0%). The positive predictive value was 63.8% (95% CI 60.9 - 65.2%), and negative predictive value 67.5% (64.8% - 70.2%). Finally, the positive likelihood ratio was 1.73 (95% CI 1.58 - 1.89) and negative likelihood ratio 0.49 (0.43 - 0.55).

Conclusions: While a “no” response to the “Surprise Question” for UPMC oncology patients with select stage IV diagnoses was more likely to predict 12-month mortality than a “yes” response, the “Surprise Question” was modestly predictive of 12-month mortality. Future work will focus on determining if there are patient populations for whom the “Surprise Question” is more predictive and assessing the ability of the “Surprise Question” to predict other clinical outcomes, such as ED visits and hospitalizations. Research Sponsor: ShadySide Foundation.

26 Poster Session

Understanding the supportive care needs of early-phase cancer clinical trial (CT) participants. First Author: Debra Lundquist, Massachusetts General Hospital, Boston, MA

Background: Early phase CTs investigate novel therapeutic approaches for patients with cancer, but little is known about the use of supportive care services among participants in early phase CTs. Methods: We conducted a retrospective, prospective medical record review of consecutive patients enrolled on early phase CTs from 2017-2019, capturing sociodemographics, clinical data, and use of supportive care services from the electronic health record. We calculated the Royal Marsden Hospital (RMH) prognostic score using data at the time of CT trial enrollment based on patients’ lactate dehydrogenase, albumin, and number of sites of metastasis. The RMH score ranges from 0-3, with scores of 2+ indicating a poor prognosis. We explored differences in patient characteristics, supportive care use, and clinical outcomes based on the RMH prognostic score. Results: Among 426 patients treated on Phase 1 CTs during the study period, the median age was 63.0 years (range 20.5-85.2 years), and most were female (56.1%), white race (85.1%), and had metastatic cancer (97.7%). The most common cancer types were gastrointestinal (22.1%), lung (20.2%), and breast (10.6%) cancer. Under half (31.6%) had an RMH score indicating a poor prognosis. Patients with a poor prognosis score had a worse performance status (ECOG ≥ 80.2% vs 58.3%, p < .0001) and more prior treatment (3+ prior lines: 49.5% vs 35.0%, p = .001) compared to those without a poor prognosis score. Those with a poor prognosis score were more likely to receive palliative care before or during CT participation (40.5% vs 27.3%, p = .011). We observed no significant differences in the rates of nutrition (69.1% vs 64.0%, social work (62.2% vs 63.8%), or physical therapy (64.5% vs 67.5%) between those with and without a poor prognosis. We found that those with an RMH score indicating a poor prognosis had a shorter time on trial (median: 49 vs 87 days, p < .0001) and worse survival (median: 139 vs 379 days, p < .0001). Conclusions: Early phase CT participants represent an advanced cancer population with unique supportive care needs. We identified a group with a particularly poor prognosis for whom earlier intervention with supportive care services may be needed. Our findings highlight the need to prospectively examine these characteristics along with patient-reported outcomes to better understand the distinct supportive care needs of this population and guide the development of targeted interventions. Research Sponsor: ESSCO Massachusetts General Hospital Breast Cancer Research Grant.

27 Poster Session

Patient characteristics associated with time-to-consult for inpatient palliative radiotherapy. First Author: Jon X Wang, University of California, San Francisco, CA

Background: Delayed inpatient radiotherapy (RT) consultation can result in delayed treatment, extended hospitalization, and increased costs. There are limited data characterizing populations that may have longer time-to-consult (TTC). Methods: A single institutional electronic health record deidentified cohort was used to identify instances when inpatient consultation to radiation oncology between 2014-2019. TTC was defined as time from admission to consultation. Multivariate linear regression was used to examine adjusted associations for factors including age, diagnosis, admission date, admitting service, and patient-reported sex, race and ethnicity to TTC. Continuous variables were normalized to generate standardized beta coefficients (B). Results: A total of 856 admissions with radiation oncology consult were identified. Median TTC was 21 hours (interquartile range [IQR] 5-69). Median age was 61 (IQR 49-68) and 51% of patients were male. Most patients were white (58%) and non-Hispanic or Latino (80%). The most common admission primary diagnoses were brain metastasis (14%), bone metastasis (10%), and primary brain neoplasm (9%). Most common admitting services were Neurosurgery (49%), Hospital Medicine (22%), Malignant Hematology (8%), and Gynecologic Oncology (8%). Primary brain neoplasms (vs brain metastases B = 64; P < .0001), other non-metastatic diagnoses (vs brain metastases B = 45; P < .001) and admission on the malignant hematology service (vs neurosurgery; B = 37; P < .0001) were associated with longer TTC. Patient demographic characteristics (age sex, race, ethnicity), and admission date did not have significant associations with TTC. Longer TTC was correlated with longer hospitalization (Pearson’s r = 0.48).

Conclusions: No clear demographic disparities in inpatient RT consultation were identified. Certain diagnoses and services were associated with longer TTC, potentially related to clinical practice. Increased TTC was associated with longer hospital length of stay. Research Sponsor: None.

28 Poster Session

Involvement of social work services in patients with advanced cancer in early-phase clinical trials (EP-CTs). First Author: Andrew Johnson, Massachusetts General Hospital, Boston, MA

Background: Early integration of supportive care in patients with advanced cancer has improved quality of life, symptom burden, and survival. Participants in EP-CTs often are highly pre-treated and the demands of participation can exacerbate financial and psychosocial concerns. Integration of social work services can address a broad scope of concerns including behavioral health, psychosocial needs, physical health, and financial concerns. Little data exists regarding the use of social work services in this patient population. Methods: We conducted a retrospective chart review of consecutive patients enrolled on EP-CTs at the Massachusetts General Hospital (MGH) Center network (23%), and home/family support (15%). A quarter of referrals (27%, n = 74) were initiated after patients left the trial (27%, n = 74). There were no significant differences in demographic or clinical variables between those referred on EP-CT versus before or after EP-CT. For those who received social work consultation while on EP-CT, median time from date on treatment to consultation was 18 days (0 - 182 days) while median time on EP-CT was 55 days (2 - 576 days). Patients received a median of 2 visits (1 - 20) while on EP-CT. Physiotherapists and research nurses were most likely to refer patients (56% vs 26%, respectively) while 10% of patients self-referred to social work. Conclusions: Over half of EP-CT participants received social work consultations during their cancer course. Most patients who received consultation on an EP-CT did so for psychosocial support. Future research should focus on determining how best to integrate social work into the care of EP-CT participants. Research Sponsor: ESSCO Massachusetts General Hospital (MGH) Breast Cancer Research Grant.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Palliative care referrals in patients with advanced cancer on early-phase cancer clinical trials (EP-CTs). First Author: Megan Healy, Massachusetts General Hospital, Boston, MA

Background: EP-CTs investigate novel therapeutic approaches for patients with cancer, but little is known about the utilization of supportive care services, specifically palliative care (PC), in this population. Methods: We conducted a cross-sectional review of consecutive patients enrolled, and EP-CTs at the MGH Cancer Center from 2017-2019. Sociodemographic and clinical variables, including utilization of PC services, were obtained via chart review. Details of the PC evaluation were compared between patients who received first PC referral on EP-CT while enrolled on an EP-CT versus those who received a PC referral at any point after diagnosis. Results: Among 426 patients enrolled on EP-CT (median age 63 years; 44% male), 249 (59%) received a PC referral at any time following a diagnosis of cancer (median age 57 years, 58% male). Eighty-six (35%) were referred prior to enrollment on EP-CT, 44 (18%) were referred while on EP-CT, and 19 (48%) were referred post-EP-CT. Patients referred on EP-CT were younger (median 56 vs 63 years, p < 0.0001) than those enrolled on EP-CTs. For patients referred while on EP-CT, 48% had a PC consult within 30 days of enrollment (range: 0-530 days); median number of PC visits was 3 (range: 0-37); median time from first PC consult to death or termination of EP-CT was 32 days (range: 1-213). Of 44 patients referred on EP-CT, 2 (5%) died while on EP-CT. Of the remaining patients, median time from first PC consult to date of death was 79 days (QR: 45-178 days). Most common reasons for referral included pain (22, 50%), non-pain symptoms (21, 48%), and goals of care/advanced care planning (20, 45%). Of these referrals, 13 (30%) were initiated as inpatients versus 31 (70%) as outpatients. Pain was most commonly cited for outpatient referral (35%), followed by non-pain symptoms (25%) and goals of care (23%). Non-pain symptoms (40%) and goals of care (36%) were most commonly cited reasons for inpatient referral, followed by pain (24%). Of referrals while on EP-CT, 23 (52%) were made by EP-CT staff, including MD and APP; 7 (16%) from the primary oncologist, and 2 (2%) was self-referral. 26 (57%) of patients referred to PC during trial were also referred to hospice, with a median time from last PC consult to hospice referral of 24 days (range: 2-322). Conclusions: A majority of patients with advanced cancer enrolled on EP-CTs received PC referral. The timeline and method of referral varied, but most patients did not receive a referral until or following enrollment on an EP-CT. Future work will focus on developing a standard referral protocol for patients enrolled on EP-CTs. Research Sponsor: ESSCO Massachusetts General Hospital (MGH) Breast Cancer Research Grant.

Resource and reimbursement barriers to comprehensive cancer care (CC) delivery: An association of community cancer centers (ACCC) survey research analysis. First Author: Al Bowen Benson, Northwestern Medicine, Chicago, IL

Background: CC delivery is recommended in guidelines, required by accreditation bodies, and essential for high-quality cancer management. Barriers, such as insufficient reimbursement and lack of specialist staff, prevent consistent access to and delivery of CC, particularly supportive oncology services. Challenges especially persist in community programs, where access to philanthropoy and similar funding is limited. ACCC conducted a representative survey of its member programs to elucidate capacity and barriers to CC delivery in the community/academic setting in order to inform policy and value-based payment reform. Methods: Survey development methodology included item generation with expert review, iterative piloting and cognitive interviews to achieve content and internal validity. An online survey was piloted at the ACCC 2018 Annual Meeting and sent to member programs via email list. The final survey included 22 questions on availability and funding for supportive services. Twenty-seven supportive oncology services were assessed for availability, reasons not offered, reimbursement/funding and patient payment. Analyses were conducted with SAS. Results: 112 of 704 ACCC member programs responded and completed the majority of the survey as of 10/7/19. Despite a high proportion of programs offering supportive oncology services, gaps between cost and reimbursement were present for all (Table). Deficits in reimbursement are compensated by patient out-of-pocket payments, grants and donations. Most centers report needing more staffing in psychology (6%), social work (60%), navigation (59%), nutrition (57%), palliative care (56%), genetic counseling (52%), and financial counseling (53%). Gaps were observed regardless of region or practice type. Conclusions: There is a lack of sufficient reimbursement, staffing, and budget to provide CC across the U.S., regardless of region or practice type. Oncology care models and reimbursement policies must include CC services to optimize delivery of care. Research Sponsor: Association of Community Cancer Centers (ACCC).

Toxicity of high-dose methotrexate administration at the Sidney Kimmel Cancer Center (SKCC): A retrospective review to guide establishment of an outpatient treatment program. First Author: Kelsey Sokol, Thomas Jefferson University Hospital, Philadelphia, PA

Background: High-dose methotrexate (HDMTX) is administered for the treatment of primary central nervous system (CNS) lymphoma (PCNSL), leptomeningeal metastases (LM), and high-grade primary central nervous system (CNS) lymphoma and leukemia. Treatment is typically administered in an inpatient setting to enable aggressive hydration, urinary alkalinization, and frequent lab monitoring given the risk of acute kidney injury. Multiple pediatric centers have published experiences with outpatient administration of HDMTX. We aim to determine the toxicity rate in adult patients at SKCC receiving HDMTX to identify a population in which to pilot an outpatient HDMTX program. Methods: We performed a retrospective review of all patients receiving inpatient HDMTX at SKCC between January 1, 2018 and October 31, 2019. Results: Seventy-three patients (52% male) with median age of 60 years (range 22-81) received 255 cycles total of HDMTX. Diagnoses include PCNSL/leukoencephalomalacia (n=22), diffuse large B-cell lymphoma (n=17), B-cell acute lymphoblastic leukemia (n=16) and other diagnoses (n=18). Thirty-one cycles were administered as CNS prophylaxis and 224 cycles as treatment, with a median prophylactic dose of 3.5 g/m2 (range 1.35) and median treatment dose of 3.5 g/m2 (range 0.25-12). The most common toxicity was acute kidney injury at a median day 3 of the cycle (range 1-7). See the table for details. Conclusions: Acute kidney injury occurred more often in the treatment group compared to prophylaxis group. Of all patients with AKI in the treatment group, 45% had a diagnosis of PCNSL. In the prophylactic group, only 21% of patients (3/14) experienced AKI of which all resolved. Of all AKI events, 90% were Grade 2 and 90% resolved. Based on these results, we plan to pilot an outpatient HDMTX program in patients with malignant PCNSL at SKCC to determine its effect on patient quality of life and cost of care. Research Sponsor: None.

Acute kidney injury among patients receiving HDMTX. Patients with AKI Cycles with AKI CTCAE Grade Unresolved AKI

| All Patients | 32% (n=22) | 12% (n=30) | Grade 2 = 2 cycles | Grade 3 = 3 cycles | Grade 4 = 1 cycle |
| Prophylaxis Treatment Group | 26% (n=5) | 10% (n=3) | Grade 2 = 1 cycle | Grade 3 = 0 cycles | Grade 4 = 3 cycles |

*One Grade 2 and one Grade 4 deemed unrelated to MTX.

Implementation of care near home model (CNH) for cancer patients in response to COVID-19 pandemic. First Author: Abdul-Rahman Jazieh, Department of Oncology, King Abdulaziz Medical City, Ministry of National Guard - Health Affairs, Riyadh, Saudi Arabia

Background: Cancer care is heavily centered in health care facilities due to the requirements of providing complex multidisciplinary care with multiple testing and interventions. We describe our experience in implementing a new model of care to minimize patient visits to health care facilities and to reduce the risk of infections and to decrease the pressure on the health care system. Methods: In response to the COVID-19 pandemic, we reengineered the cancer care process to reduce patients’ visit to the hospital by the implementation of a Care Near Home (CNH) Model that comprises of four components: virtual clinic, laboratory testing near home, shipping medications and supplies, and involving local health care facilities. The effectiveness and acceptance of this new model has been assessed by the delivery of timely care successfully and assessing the satisfaction patients and healthcare providers. Results: On March 18, 2020, we launched the virtual clinics followed by different components of the model. The number of virtual clinic visits has increased significantly from 399 visits in March to 1107 in April 2020. More the 90% of physicians and patients who responded to the survey expressed their acceptance and satisfaction with the virtual clinic services. Medications were shipped to total of 603 patients. Of those, 578 (96%) patients received their medications (378 patients outside city, 200 patients inside city of which, 95% received medications within 24 hours). Only 25 (4%) patients did not receive their medications and we arrange for alternative solutions. Laboratories in various regions were set up to perform the tests for our patients and to communicate the results through our electronic healthcare records system. The process of ordering and performing the test was improved with success and how we are at the scaling up phase. Conclusions: Although the implementation of CNH Model was driven by COVID-19 pandemic, it will be integrated in our work process and utilized as a long term approach to manage patients and their families more conveniently and more cost effective to the health care system. Research Sponsor: None.
A geriatric assessment (GA) intervention for older patients with advanced cancer: Secondary outcomes from a University of Rochester cancer center NCI community oncology research program cluster randomized controlled trial (CRCT). First Author: Supriya Gupta Mohile, University of Rochester Medical Center, Rochester, NY

Background: GA evaluates aging-related domains (e.g., function) known to be associated with cancer survival. This study evaluated a GA intervention with management recommendations to oncologists reduces clinician-rated toxicity in older patients (pts) with advanced cancer receiving high risk treatment (prognostically advanced). We report GA outcomes on the effects of the GA intervention on aging-related outcomes. Methods: Pts aged ≥ 70 with incurable solid tumors or lymphoma and ≥ 1 impaired GA domain starting a new treatment regimen were enrolled. Community oncology practices were randomized to intervention (oncologists received GA summary/recommendations) or usual care (none given). Secondary analyses examined effects of the intervention on functional outcomes (patient-reported falls, instrumental activities of daily living (IADL), short physical performance battery (SPPB), geriatric depression scale (GDS), and medications (total and prescription)). Outcomes were analyzed using linear mixed effects model, logistic or Poisson regression adjusted for baseline values, time, and site effects as appropriate. Results: From 2013-19, 718 pts were enrolled from 41 practices. Age (mean 77 yrs), sex (43% women), number of impaired GA domains (median 4/8), and treatment type (chemotherapy 88%) were not different by arm. More pts in intervention were black (12% vs 3%, p<0.01), had GI cancer (38% vs 31%, p<0.01), and had prior chemotherapy (3% vs 23%, p<0.02). Overall, 16.4% of all pts had one new fall over 3 months; patients in the intervention arm were significantly less likely to fall over 3 months (11.7% vs 20.7%; Risk Ratio 0.58; 95% CI 0.40-0.84, p=0.004). There was no difference in the total number of medications (mean 5.86 vs 5.79, p=0.80) and prescriptions (mean 4.26 vs 4.20, p=0.70) at baseline. More medications (adjusted mean 0.23 vs 0.09, p<0.03) and prescriptions (0.19 vs 0.07, p=0.05) were discontinued during intervention, although there was no difference at 3 month follow up. There were no significant between-arms differences in IADL, SPPB, and GDS. Conclusions: Providing GA information to oncologists reduces the proportion of older pts who experience a fall over 3 months and improves polypharmacy; both of these endpoints are of clinical importance to older adults with aging-related conditions and advanced cancer undergoing palliative treatment. Funding: R01CA177592, U01CA233167, UGIC189961. Clinical trial information: NCT02054741. Research Sponsor: U.S. National Institutes of Health.

Managing outpatient oncology visits during COVID-19 pandemic: Addressing patients’ concerns and precautionary measures. First Author: Nazmina Al Mutairi, Department of Oncology, King Abdulaziz Medical City, Ministry of National Guard - Health Affairs, Riyadh, Saudi Arabia

Background: Implementation of precautionary measures in response to COVID-19 pandemic involves patients pre-visit screening of patients to detect any potential risk of infection and proper patient flow to the clinic and adherence to social distancing. Our study evaluates our center experience with the precautionary measures and plans to optimize it. As a precautionary measure to COVID-19 pandemic, all patients scheduled for oncology outpatient visit were called by a nurse to screen them for any acute respiratory infection (ARI) and triage their visit into physical visit or virtual visit. Patients with high ARI score were directed for proper isolation and COVID-19 testing process and recommended to have virtual clinic visit with their oncologists. Those who have low ARI score and require in person clinic visit receive confirmation of appointment during the call with visit instructions. A tally of all responses and decision were maintained for process monitoring. Results: Between March 23, and June 13, 2020, 1,905 patients who had pre-visit screening calls. Nurses could not reach 82% (4%) patients and 23 patients expired per family member report. Out of 1800 patients who responded to call, 1392 (77 %) had confirmed physical appointment, 179 (10%) switched to virtual appointments. Sixteen out of the 19 patients who have high ARI score have swab done. All patients were tracked to assure proper management of their symptoms and continuity of oncological care. A total of 229 (12%) patients refused to come due to COVID-19 concerns and were rescheduled based on primary oncologists decision. A quality improvement project was initiated to understand the concerns of patients who refused to come and address them properly. Conclusions: Pre-visit screening call is a critical intervention in assurance adherence to infection control measures, but in identifying patients concerns and addressing them. There is a need for implementation of updated patient education and awareness approach about the risk of COVID-19 infection and the importance of adherence to their cancer treatment plans. Research Sponsor: None.

Feasibility, delivery, and acceptance of a multidisciplinary survivorship care model based in an Asian national ambulatory cancer center: A six-month review. First Author: Yu Ke, National University of Singapore, Singapore, Singapore

Background: Accessible Cancer Care to Enable Support for Cancer Survivors (ACCESS) is a multidisciplinary survivorship care model launched at the National Cancer Centre Singapore, the largest ambulatory cancer centre serving 70% of adult cancer patients in the public sector. ACCESS employs routine distress screening to triage patients with varying care needs and complexities. This study aims to examine the feasibility, delivery, and acceptance of ACCESS in providing appropriate care and support to patients in clinical settings. Methods: As part of an ongoing evaluation, we evaluated ACCESS for a 6-month implementation period between September 2019 and February 2020. Feasibility was assessed by proportions of (1) eligible patients; (2) evaluated distress; and (3) highly distressed patients requiring multidisciplinary meetings (MDM). Delivery was characterized by the mode and number of supportive care team (SCT) reviews required. Acceptance rates of SCT reviews by distressed patients and the uptake rate of service referrals recommended by the MDM were tabulated. Results: ACCESS screened 1074/1471 (73.0%) of all eligible patients within the 6-month period and identified 239/1074 (22.3%) as highly distressed for follow-up with the SCT. Eventually, 84.5% agreed to SCT review, with approximately one-fourth (26.7%) requiring MDM meetings. The majority (62.4%) of all distressed patients were identified at their first DT completion, whereas 19.8% and 7.4% were identified at their second and third completions respectively. The most common modes of follow-up were telephone reviews (49.9%) and face-to-face in clinic waiting areas (48.6%). The SCT recommended 80 referrals to distressed patients for the following services: psychosocial (27.2%), cancer rehabilitation (5.9%), and home hospice (5.0%). The acceptance rates of the referrals for psychosocial, rehabilitation, and hospice services were 43.6%, 75.0%, and 80.0% respectively. Conclusions: ACCESS is a feasible model for triaging Asian cancer patients based on distress levels, and identifying complex patients requiring care personalization through MDM. The poorer acceptance rate of psychosocial services highlights the need for reference to more specialized physical than psychosocial issues. Future studies should explore whether the uptake of psychosocial services is higher in the post-COVID era. Research Sponsor: Temasek Foundation Cares (Singapore).

Managing outpatient oncology visits during COVID-19 pandemic: Addressing patients’ concerns and precautionary measures. First Author: Meghan Meadows, Multidisciplinary Thoracic Oncology Program, Memphis, TN

Background: The Multidisciplinary Thoracic Oncology Conference (MTOC) model is easier to implement than the Multidisciplinary Clinic (MDC) model, but does not directly involve patients in decision-making. We compared the processes and outcomes of lung cancer care between patients discussed in a weekly MTOC versus those seen in a MDC. Methods: Prospective observational study of thoroughness of staging, stage confirmation (defined as biopsy of the stage-defining lesion), National Comprehensive Cancer Network (NCCN) guideline-concordant treatment, overall (OS) and event-free (EFS) survival of lung cancer patients in a community healthcare system’s MDC and MTOC from 2014-2019. We used the Stage-Reporting and multivariable logistic regression to evaluate guideline-concordant treatment and stage confirmation; Kaplan-Meier curves and multivariable Cox regression were used to evaluate OS and EFS. We adjusted models for age, sex, race, insurance, smoking status, and histology. Results: 641 patients received care in MDC, 571 in MTOC. MDC patients were older (median age: 69 yr vs 67), less likely to be active smokers (44% vs 47%; p<0.03) more likely to have bimodal (98% v 95%, p<0.02) and trimodal staging (60% v 46%, p<0.0001). The stage-confirmation rate (OR: 1.55; 95% CI: 1.22-1.95) and multistage survival rate confirmation (OR: 1.55; 95% CI: 1.32-1.95) were both significantly higher in MDC, even after adjustment (aOR: 1.60; 95% CI: 1.25-2.03; aOR: 1.58; 95% CI: 1.25-2.00). A higher proportion of patients received guideline-concordant treatment in MDC than in MTOC (82% vs. 73%; OR: 1.63; 95% CI: 1.21-2.20) even after adjustment (aOR: 1.64; 95% CI: 1.20-2.24). However, MDC patients had significantly better OS (p<0.03) and EFS (p<0.001) than MDC patients and a lower hazard of death (HR: 0.81 95% CI: 0.67-0.98), even after adjusting for confounding variables (aHR: 0.79 95%CI: 0.66-0.95). Conclusions: Although the processes of lung cancer care delivery were better in MDC than in MTOC, survival was better in MTOC. Patient selection may have played a role in these survival differences. The MDC model, as implemented, seems competitive with the MDC model and is worthy of further exploration as a more feasible model of multidisciplinary care. Research Sponsor: Patient-Centered Outcomes Research Institute.
37  
Poster Session  
Addressing reproductive health needs of cancer patients: The pilot experience of pioneering oncofertility clinic in Saudi Arabia. First Author: Hayat Ahmed Alrabiea’a, King Abdulaziz Medical City, Ministry of National Guard-Health Affairs, Riyadh, Saudi Arabia  

Background: Fertility and reproductive health issues are commonly encountered in cancer patients and survivors and unfortunately, they are not systematically addressed in many cancer care centers. We piloted our dedicated Oncofertility Clinic that was established to address all reproductive and fertility issues for all oncology patients at our cancer center. Methods: We launched the first dedicated oncofertility clinic in the region on April 2018, staffed by a consultant of obstetrics and gynecology with the help of a team from in vitro fertilization (IVF) unit and a medical oncologist. It is held on a weekly basis and receives referrals from medical oncology, hematology, stem cell transplant and radiation oncology. Eligible patients are males and premenopausal females considering chemotherapy or radiation therapy aiming for fertility preservation or cancer survivors who completed treatment and complaining of infertility problems. The clinic provides fertility preservation through the following procedures: Oocytes freezing (OF), in-vitro fertilization (IVF), sperm freezing, and ovarian transposition. Oncofertility care also includes management of sexual and hormonal dysfunction, and contraception methods. We are capturing the demographic, clinical data of all patients seen in the clinic and the number of interventions and procedures that they underwent. Results: Between April 2018 and April 2020, the clinic served 100 patients 60% were female, Median age was 35 years (16-39). Diagnoses were distributed between breast cancer (36%), lymphoma (10%), and other cancers (54%). 63% had stage 1 disease. Rapid case ascertainment identified 89% (95% CI, 85-93%) of patients. The table depicts the types and number of procedures performed on these patients. Conclusions: Our pilot experience revealed the critical need of such clinic to help patients preserve fertility, management of symptoms of gonadal toxicity, and future plans include implementation of systematic screening approach cancer populations who will benefit from the services and monitor the long-term impact of the clinic on the served patients. Research Sponsor: None.

<table>
<thead>
<tr>
<th>Types of procedures performed</th>
<th>Number</th>
</tr>
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<tbody>
<tr>
<td>In vitro Fertilization (IVF)</td>
<td>10</td>
</tr>
<tr>
<td>Oocyte Freezing (OF)</td>
<td>8</td>
</tr>
<tr>
<td>Administration Gonadotropin</td>
<td>32</td>
</tr>
<tr>
<td>Spore Refused Follow-up</td>
<td>40</td>
</tr>
<tr>
<td>Gender Reassignment (IVF)</td>
<td>5</td>
</tr>
<tr>
<td>Oocyte Refused Follow-up</td>
<td>5</td>
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</tbody>
</table>

Last 6 months of procedures performed (n=100)

38  
Poster Session  
Multiple myeloma (MM) therapy within a Medicare-insured patient population: Role of care setting and oncologist sub-specialization in hematologic malignancies. First Author: Amy J. Davidoff, Yale School of Public Health, New Haven, CT  

Background: Dramatic increases in oncology practice consolidation with hospitals may affect care setting and whether patients see oncologists that specialize in their cancer. We evaluated the impact of initial and subsequent treatment patterns. This may be particularly true for MM, where approval of new immunomodulatory drugs (IMiDs) and proteasome inhibitors (PIs), coupled with evidence supporting PI-IMiD combinations, maintenance (MT), and stem cell transplant (SCT) among at least 10% of patients, has expanded options for initial therapy (LOT). Methods: We selected adults with MM diagnosis (dx) between 07/07-12/15 from the SEER-Medicare linked database. We required continuous Medicare Parts A and B enrollment and no HMO/PPO coverage from 12 months prior to dx (1 month prior for Part D) through death or end of study (12/31/16). We computed LOT1, LOT2, LOT3, and LOT4. Results: We identified 1516 patients; 19% LOT1, 20% LOT2, 21% LOT3, and 39% LOT4. Relative to dx, LOT1 increased from 2015 to 2016 (15% to 20%, p = .001). LOT2, LOT3, and LOT4 all increased from 2015 to 2016 (15% to 21%, p = .001; 34% to 40%, p = .001; 40% to 45%, p = .001). Conclusions: MM care is highly complex and patients receive a wide range of therapy with no single treatment being predominant. LOT1 increased from 2015 to 2016 and LOT2, LOT3, and LOT4 increased from 2015 to 2016. These findings may be generalized to other hematologic malignancies.
Assessing burnout among oncolgists in Ontario, Canada. First Author: Simron Singh, Sunnybrook Odette Cancer Center, University of Toronto, ON, Canada

Background: Provider experience and physician burnout has been recognized as a critical issue in medicine. Ontario, Canada has a single payer cancer system run by Ontario Health (Cancer Care Ontario) with a mandate to develop system level planning and delivery of cancer services, funding, and quality improvement. As part of a larger provincial initiative to address clinician burnout, we examined the prevalence and drivers of burnout in practicing physicians oncologists in Ontario. Methods: In November-December 2019, we distributed a survey to all active, surgical, medical, hematological, and radiation oncologists in Ontario who could effectively refer appropriate patients for a comprehensive cancer workup. We were invited to complete an anonymous online survey to assess burnout and its drivers. Burnout prevalence was assessed through the Maslach Burnout Inventory - Human Services Survey for Medical Personnel (MBI-HSS MP). Data on demographic, workplace, engagement, and practice profiles were collected. Logistic regression modeling was conducted to assess key variables associated with “high” burnout using a common definition of high scores on the MBI subscales of emotional exhaustion (EE) (> 27) and/or depersonalization (DP) (>10). Results: Response rate to the survey was 44% (n=418) with 72% reporting high levels of burnout. Mean scores for EE (30.7, SD 12.1) and DP (9.9, SD 6.7) were consistent with high burnout. Participants endorsed known drivers of burnout including: 1) a poor culture of wellness at work (e.g., not comfortable talking to leadership (72%)), 2) inefficiencies of practice (e.g., feeling insufficient documentation time (67%)) and 3) personal resilience (e.g., not feeling they are contributing professionally in ways they value (21%)). Age (<45yrs) (OR: 2.15), poor/marginal control over workload (OR: 4.42), feeling used/unappreciated (OR: 2.63), working atmosphere that feels hectic/chaotic (OR: 2.68), and insufficient time for documentation requirements (OR: 2.52) significantly impacted the odds of high burnout in the regression model (p<0.05). Conclusions: The high rate of burnout among oncology physicians in a single payer public cancer system in Ontario is concerning for the well-being of providers, patients and system sustainability. Drivers important for maintaining a culture of wellness and efficiency of practice will require local, regional and provincial health policy to improve. Next steps will include raising awareness with provincial initiatives/policy to address key burnout drivers, and examining the impact of working under pandemic conditions (Covid-19) on oncologist burnout. Research Sponsor: None.

RCS role Benefit Advocates Billing Collections Auth Specialists Productivity impact 37% 5% 3% -20%

Inadequacies in genetic testing referrals and counseling in prostate cancer. First Author: Yash Sure, University of Alabama at Birmingham, Birmingham, AL

Background: Recent studies have recognized the high prevalence of germline mutations in genes affecting DNA repair in patients with prostate cancer. In recognition of their growing clinical significance, the NCCN guidelines recommend genetic counselling in prostate cancer pts with certain risk factors. The NCCN guidelines of genetic counseling in practice were setup in 2004. Methods: All new clinic visits of prostate cancer pts at UAB from January 2019 to June 2019 were identified and analyzed. We constructed a flow diagram of the UAB two-step referral model, and performed a chart review and analysis of survey responses. We then sent a questionnaire to all onco geneticists at UAB to collect information on genetics testing patterns, general approach to testing, and the barriers of GC, and actions to overcome barriers. Results: From January to June 2019, 57 new prostate cancer patients were seen, of which 23 had metastatic disease (40%), and 20 had high or intermediate-risk localized disease and remaining had biochemical recurrence. In total, 38 had an indication for GC. The most common indication was metastatic disease in 23 pts (40%) and localized high risk in 15 pts (26%). Significantly 33% of 24 patients with early onset prostate cancer < 60 yrs did not meet NCCN defined criteria for testing. Only 39% of the 38 eligible patients were referred, with testing completed in 11% of those with indications. The response rate to the survey was 91%. 30% of respondents reported that they would be comfortable completing genetic counseling themselves, and the most commonly reported barrier to providing the testing themselves was time, and lack of expertise/experience. 70% percent of providers cited that lack of genetics workforce was a barrier to genetic testing, and 60% cited lack of knowledge of genetic testing and genetics and the inadequate coordination of referrals were barriers. Conclusions: While a majority of prostate cancer patients seen in the oncology clinic meet criteria for GC, referrals are inconsistent, and only a handful of eligible patients complete testing. From the survey results, the area that is most improved from the provider’s side are education and comfort with genetic testing. From a systems perspective, the need for more genetics workforce, and better process workflows are required to improve the uptake of Genetic Testing Referral and Testing. The interventions of practice transformation and education need to be implemented, and tested at UAB to improve adherence to the NCCN guidelines for genetic testing of prostate cancer. Research Sponsor: None.

The effect of COVID-19 on revenue cycle staff. First Author: Stacey L Poole, Tennessee Oncology, Nashville, TN

Background: The COVID-19 pandemic caused a public health emergency declaration in March 2020. A safer at home order was issued by the Tennessee governor on March 12 urging non-essential employees to stay at home. The decision was made to offer telecommuting to employees at Tennessee Oncology (TO) due to concerns over the safety of the workforce. At TO, the revenue cycle staff (RCS) began working remotely within a week of the decision. Methods: TO had been conducting a telecommuting pilot involving 20 RCS. This pilot was expanded within a week to accommodate 130 RCS including billing, credentialing, collections, financial counseling, analysts, authorization, and benefit specialists. Employees signed telecommuting agreements and provided equipment based on IT recommendations. IT installed software which allowed secure connection through a Citrix gateway. Surveys were later used to measure work-from-home satisfaction. Less than 10 RCS remained onsite to perform essential duties. Results: Compared to the prior year there was an 80% reduction in turnover and an 82% reduction in unscheduled absences for telecommuting employees vs in-office employees. 92% reported an improved work/life balance. Productivity metrics by team are displayed below: Key financial metrics including payer turn-around, days in AR and patient payments improved over prior months. Payer turnaround dropped by 3 days and days in AR decreased by 3.9 compared to February. Patient payments were up 14% compared to the prior year. Conclusions: COVID-19 has been a challenging time in healthcare but it has taught us some valuable lessons. Telecommuting could be the wave of the future showing positive financial return in the form of employee retention, reduction of non-productive time (including unplanned absences) and increased employee satisfaction. Data shows these factors lead to higher producing team members who yield superior results. Research Sponsor: None.

Emotional impact of COVID-19 preparations on metro and regional cancer workforces in Queensland Australia: "We are all in this together". First Author: Natasha Anne Roberts, Royal Brisbane and Women’s Hospital, Herston, QLD, Australia

Background: Australia has achieved a “flattening of the curve” with a sustained COVID-19 roadmap to recovery in place. We explored the emotional impact of COVID-19 on our cancer workforce, during the preparation phase of the pandemic. Methods: We developed and pilot-tested an online survey to capture the emotional impact on cancer care staff during the COVID-19 health system response. Two large cancer centres were identified for study sample, one metropolitan and one regional, in Queensland, Australia. All cancer care staff with patient-facing roles were invited via email to participate on a weekly basis, uniquely also including ancillary and administrative workers. The final survey questionnaire included qualitative domains with open text responses for reflections on difficult decisions and subsequent emotional impacts. At the same time, a prospective diary of organizational developments was independently maintained by two investigators in order to track changing survey responses over time. Qualitative data analyses by four investigators included independent, multiple cross-coding, memos, dataset review and member-checking to ensure methodological rigour. Data were synthesised into key themes utilising the Framework Method (Gale, 2013).

Results: 117 metropolitan and 59 regional staff were surveyed over a 6-week period. Participants were medical, nursing, allied health, administrative and ancillary staff, working across inpatient and outpatient oncology services. Four key themes were emergent across the trajectory of the COVID-19 pandemic phase; ‘Strategies for protection’ (self-isolation, using PPE, protecting patients, families and each other), ‘Navigating rules and keeping up’ (compliance, exceptions, conflict and complex decision fatigue), ‘Tempered optimism’ (this is grief, strategies for coping, pride in one’s place), and ‘Framing the new normal’ (using new technology, second wave, uncertainty). At different time points, one theme dominated more than others. Conclusions: Despite rapid adaptations to system changes, staff responses highlighted that it was their sense of normalcy that had the greatest influence on their emotional response during the COVID-19 pandemic, but also underpinned the humanistic aspects of their responses. Staff perceptions of feeling supported and prepared, permeated through the duration of the survey. Results from the recovery phase are awaited. Research Sponsor: None.
Managing the delivery of quality cancer care during the COVID-19 pandemic in a small community cancer clinic. First Author: Kashyap B. Patel, Tri City Onc, Charlotte, NC

Background: The global pandemic resulting from COVID-19 has resulted in over 400,000 deaths and nearly 7 million active cases at the time of writing this abstract (World Health Organization, 2020). This Public Health Emergency has increased unpreceded challenges on oncologists and cancer patients alike. They are met with the challenge of providing uninterrupted care to cancer patients, a predicament that includes a decrease in the use of immunomodulatory chemotherapy, the potential impact on contracting COVID-19 and the risk of cancer progression. Liang et al reported that cancer patients were not only at very high risk of contracting COVID-19 but also at a much higher risk of complications and death. Our multidisciplinary oncology practice rapidly adapted to meet the challenge to continue to provide care.

Methods: Employee and patient safety. Implement CDC recommendations in waiting room, infusion suites and supply of PPE. Create patient priorities based on severity and need of treatment. Implement telehealth. Implement care in accordance to Cancer Patients Assessment and Treatment Priority Determination (stop, intermediate and low priority). As a part of our initial strategy, we discussed the risk and balance of postponing chemotherapy or elective surgery for stable cancer patients during the first phase of closures. We also focused on more intensive surveillance in the older patient population or those with multiple high risk comorbidities. For patients in complete remission on maintenance therapy, we balanced risk and benefit of stopping chemotherapy. In other words, we considered the option of switching their chemotherapy regimen from IV to oral therapies, where clinically appropriate, to decrease the frequency of clinic visits and potential exposure. In cases where the option of non-immunomodulatory oral therapy is existent, we implemented the same. Results: Our clinic continues to provide uninterrupted care since the declaration of PHE. We saw a drop of 25% patient volume in March and 35% in April. However, with instantaneous adaptation and implementation of CDC recommendations, patient volume returned back to pre COVID-19 related emergency. None of our employees, their dependents nor any of our patients have contracted COVID-19 to date (according to DHEC feedback) at the time of writing. We had a total of 5082 patient visits (1261 chemo visits).

None of our employees, their dependents nor any of our patients have contracted COVID-19 to date (according to DHEC feedback) at the time of writing. We had a total of 5082 patient visits (1261 chemo visits).

Conclusions: By implementing the right steps and precautions, it is possible to provide continued care for and protect staff, physicians and patients.

Poster Session: None.

Treatment priority category Description Examples of treatment with precision medicine targeted molecular agents

Top Priority A.

- Patients with newly diagnosed aggressive tumors such as DLBCL, AML, MM, Small lung cancer and with weight loss, large tumors, stage IV or refractory cancer (or to name a few).
- Most patients requiring ongoing standard chemotherapy will be classified as top priority B.
- Patients starting therapy, recognizing that they are unlikely to complete 6 to 12 months of treatment, should be considered top priority C. For example, patients with leiomyosarcoma treated with imatinib or pemetrexed will be a potential clinical judgment call for each individual patient.

Intermediate Priority B.

- Patients currently receiving therapy needed to be reassessed as to whether they require ongoing treatment and should be considered top priority B. These patients that cannot possibly wait months before continuing treatment should also be considered priority B. All considerations should be made for those patients who can be switched over to oral agents (consider less immunosuppressive agents).

Low priority C.

- Patients receiving oral hormonal therapy, especially in the adjuvant setting, such as IMRA for low grade and low risk MDS.
- Growth factors for high grade MDS, allergic to chemotherapy treatments.
- Patients with recurrent prostate cancer, patients receiving biologics such as enzalutamide and abiraterone.
- Patients on maintenance treatment with deep remission.

Methods:

- Telehealth (E-consult). This impacts the patient experience, provider satisfaction, and access to new patient visits. A pilot program was implemented in the Medical Oncology breast clinic to review new internal referrals prior to scheduling. This review process was implemented in the Medical Oncology breast clinic to review new internal referrals prior to scheduling. This review process has been implemented across the entire Medical Oncology service.

Results:

- The integration of internal referrals into the workflow, standardizing change-in-plan communication, and cost analysis of interventions in our resource-limited setting. Research Sponsor: Stavros Niarchos Foundation.

Poster Session: None.

Reducing medical oncology infusion no-show rate by improving patient and in-clinic communication. First Author: Radhika Kanithi, The University of Texas Southwestern Medical Center, Dallas, TX

Background: Parkland Health and Hospital System (PHHS) is the safety-net health system for Dallas County. In a resource-limited health care system, no-shows create waste and delay care. We sought to decrease the no-show rate (NSR) for patients scheduled for infusions, transfusions, and injections in the PHHS medical oncology clinic by 50%.

A multidisciplinary team reviewed the NSR from January 2020 to May 2020. The reasons for missed appointments were investigated via chart review to better develop an intervention for meaningful change. A telephone follow-up protocol by the infusion nurses with standardized documentation and communication with the clinic and scheduling teams (in-clinic communication) was implemented for each missed infusion appointment starting in February 2020.

Results: The in-clinic centered a 16.4% NSR in January 2020. Of the 306 missed appointments, there was no documented reason for 44% (139), 19% (70) were related to change in plan-of-care 19% (67) were in patients who had been admitted. Patient-related issues (transportation, illness, work/family obligations, etc.) were 13% of no-shows. Only 40% (116) of the no-shows had a follow-up call. After implementation of follow-up telephone calls, the NSR was 11.2% by May 2020, a 32% decrease.

Poster Session: None.

Optimizing internal referrals within an academic breast oncology practice. First Author: Jamie L. Carroll, Mayo Clinic, Rochester, MN

Background: Improving new patient access to medical oncology clinics is a priority. Unlike external referrals, which undergo a review process, internal referrals (from any Mayo department or community-based affiliated health system) are scheduled directly. At times, these internal referrals lack necessary referral information, or may be more appropriate for electronic consults (e-consult). This project focused on the 3-month period March to May that a multidisciplinary team reviewed the NSR from January 2020 to May 2020. The reasons for missed appointments were investigated via chart review to better develop an intervention for meaningful change. A telephone follow-up protocol by the infusion nurses with standardized documentation and communication with the clinic and scheduling teams (in-clinic communication) was implemented for each missed infusion appointment starting in February 2020.

Results: The infu-
Background: COVID-19 in oncologic patients presents a clinical dilemma. To reduce the risk of adverse events as well as the risk of exposing others, many institutions have established protocols to define COVID-19 clearance. However, the optimal criteria for discontinuing infection precautions and/or resumption of oncologic treatments in COVID-19 patients is unknown.

Methods: We identified patients with a positive COVID-19 PCR at a tertiary care hospital between 3/25/2020 and 6/6/2020, and who also had seen an oncologist for a cancer-related diagnosis within the last 3 years. COVID-19 PCR testing was performed using the Abbott Laboratories’ m2000 platform in conjunction with either the Aludia Biosciences PANDANa qDXM SARS-CoV-2 or Abbott Real-Time SARS-CoV-2 assays. At our institution, and per current ASCO guidelines, discontinuation of COVID-19 precautions requires two consecutive negative viral PCR tests > 24 hours apart. Results: During the follow-up period, we identified 32 patients with a positive COVID-19 PCR who were receiving active oncology care. Half of this cohort (16/32) had metastatic disease at the time of COVID-19 diagnosis. 17 patients were on active treatment at time of COVID-19 diagnosis (8 receiving cytotoxic chemotherapy). Among patients who met criteria for COVID-19 PCR clearance, median time to clearance was 37 days (range, 10-58 days). When accounting for censoring at the time of last COVID-19 assay, median time to clearance for all patients was estimated at 50 days. 14 patients resumed anti-cancer treatment prior to COVID-19 clearance (5 received cytotoxic chemotherapy), requiring substantial allocation of staff and resources for safe treatment isolated from other oncology patients. Among the 13 patients who met clearance criteria, 2 subsequently had a positive COVID-19 PCR after resumption of treatment. We explored COVID-19 clearance as a time under an alternative symptom/time based strategy based on CDC criteria (at least 10 days after first positive PCR and 3 days after last day of symptoms). Under this strategy, median time to COVID-19 clearance would be 14 days.

Conclusions: In patients with COVID-19 infection, viral shedding can persist for many weeks after disease onset, but the implications of this shedding on likelihood of infection is unknown. Treatment of COVID-19 positive oncology patients requires substantial planning and resources. Test-based (virus symptom) vs. symptom-based strategies for determining discharge of precautions and resumption of treatment should be further investigated to provide safe and effective care. Research Sponsor: None.

Poster Session
51 Effects of COVID-19 on an academic breast oncology center in New York City. First Author: Jake Progoff, Columbia University Irving Medical Center, New York, NY

Background: The influx of patients to the healthcare system due to COVID-19 impacted healthcare practices including the care of breast cancer patients. Our aim is to describe the impact this pandemic had on breast cancer care delivery at an academic center in NYC to inform policy and procedure for future pandemics. Our specific aims were to: 1) describe the impact of COVID-19 on breast cancer care delivery; 2) describe breast care received; and 3) identify potential strategies to improve breast cancer care in the outpatient setting. Methods: We reviewed charts of patients seen at our cancer center between 3/25/2020 and 6/6/2020. We identified patients with a breast cancer-related diagnosis within the last 3 years. COVID-19 PCR testing was performed using the Abbott Laboratories’ m2000 platform. Following patient COVID-19 PCR negative results, we compared breast oncology practice patterns and resource use to the pre-pandemic period. Results: Of 4,950 breast cancer patients seen in the last 3 years, 2,231 patients were tested for COVID-19 by PCR. Among patients with a positive PCR result, 22% of patients were given recommendations. A secondary outcome of the study was to capture unplanned readmissions within 1 month post discharge. Results: Between 9/19/2017 and 5/3/2019, 49 patients were eligible and 40 were enrolled, an 82% participation rate. The median age was 80.5 years (range 75-88), 58% male, 63% Non-Hispanic white, 18% Hispanic, 15% Asian, 70% > high school education, 73% married/partner, and 48% had stage IV cancer. Most common cancer types: GI (28%), GU (23%), lung (20%). All 40 patients (100%) had >1 predefined trigger in the GA generating interventions and completed ≥ 2 follow-up visits with the APN. In total, 857 interventions were recommended. Unplanned hospital readmission was low with only one patient readmitted within 30 days (3%). Conclusions: Among hospitalized adults over age 75 with cancer, UCAN to identify vulnerability, and provide GA-driven multidisciplinary interventions is feasible. Further studies are warranted to determine the impact of GA-driven interventions on outcomes among hospitalized older adults with cancer. Research Sponsor: Center for Cancer and Aging.
Oncologist- versus hospitalist-led service: Differences in hospital utilization for solid tumor patients. First Author: Lesley Wu, Mount Sinai Beth Israel, New York, NY

Background: Hospitalists have been practicing alongside oncologists to provide high quality care for hospitalized cancer patients. We examined the differences in hospital utilization and outcomes among solid tumor patients admitted to oncologist-led teams (OT) versus hospitalist-led teams (HT). Methods: We performed a retrospective cohort study of patients with solid tumors admitted to the OT or HT at Mount Sinai Hospital from July to December 2019. We excluded patients less than 18 years of age, primary hematologic malignancies, or admission to intensive care or surgical units. We used the Activity Measure for Post Acute Care (AMPAC) and Charlson Comorbidity Index as a measure of functional ability and illness severity, respectively. We performed bivariate and multivariate analyses comparing differences in length of stay, ICU transfers, palliative care consults, healthcare proxy (HCP) decision, new DNR decision, readmission within 30 days and inpatient mortality by type of admitting service (OT vs HT). Results: Of 1454 subjects who were identified as admitted to MTCTC, there were significant differences according to race and cancer type (p = 0.0001) for both HT patients and OT patients. In multivariable analysis, HT had significantly more ICU transfers (OR: 2.51, 95% CI: 2.51-6.43). We also tracked quantity of phone calls required to arrange a visit and the time from patient call to the triage to the patient. Our initial process of the integration of patient advisors in oncology: Patient advisors (PAs) in the context of the MTTC. Methods: We used the Plan-Do-Study-Act (PDSA) framework to identify a feasible, appropriate intervention to reduce the time required to coordinate visits with the specific aim of reducing the time to schedule an ill patient by 25%. We generated a cause and effect diagram to map the elements involved in the call scheduling process, and used a priority/payout matrix to evaluate possible countermeasures that could streamline the process by redesigning the workflow for scheduling ill calls. Our initial workflow involved paging individual practitioners at three locations. The process led us to the creation of a HIPPA-compliant group text to simultaneously coordinate scheduling of an ill call among between three campuses in a more collaborative/efficient manner. We tracked time from patient call to time of scheduled appointment, and between the PAs and the oncology clinical team. In fact, the trained PA meet patients in health care settings in addition to the other health professionals in order to improve health care and partnership between professionals and patients. This presentation communicates the PA’s perception of their contribution and the factors influencing implementation of these programs in 4 establishments.

54 Process of the integration of patient advisors in oncology: Patient advisors’ views. First Author: Marie-Pascale Poremy, Centre de Recherche du CHUM, Montréal, QC, Canada

Background: Since 2017, in Quebec (Canada), a research project is focusing on the feasibility, the processes, and the contribution of integrating patients who have already had cancer experiences (named patient advisors (PAs)) in the clinical team. In this context, the PA project is to be part of multidisciplinary teams and in addition to the other health professionals in order to improve health care and partnership between professionals and patients. This presentation communicates the PA’s perception of their contribution and the factors influencing implementation of these programs in 4 establishments.

Methods: Between April and May 2020, semi-structured virtual interviews lasting about 60 minutes were conducted on 12 patient advisors involved since 2017 in the elaboration of these support programs. The interviews were recorded and transcribed completely. The data analysis was done with content analysis using the QDA Miner 5.0 software, applying the qualitative analysis quality standards. Results: First of all, the 12 PAs have reported that the accompaniment of 67 patients have allowed them to share their experiential knowledge not only related to living with the illness but also about healthcare organization and the anticipation of treatments. They also highlighted their capacity to share situations that can be improved by healthcare professionals (example: wait times for exams; patients’ difficulty in understanding their illness, etc.). However, they also highlighted 4 factors which limit the implementation: 1) organizational (the unclear and changing nature of the breast cancer consultation schedule, difficulty of access to consultation rooms and unsuitable schedules for the PA’s reality); 2) leadership (lack of clinicians promoting the intervention; managers’ low involvement; lack of clarity of roles); 3) human (work overload and employee turnover); 4) PA’s status (lack of compensation and of recognition). Also, to optimize their integration, the PA’s suggest to work on a lasting bond of trust with the professionals in the creation of a status recognized by healthcare professionals, the recognition of their role by the clinical team, to give them access to physical spaces, and an openness of the teams to their complementary knowledge.

Conclusions: These first results suggest the importance during theImplementation of such programs of working with the PAs and the healthcare professionals on organization, leadership, resources, and status factors to allow the people dealing with cancer to benefit from experiential knowledge of other patients within their clinical team. Research Sponsor: Canadian Institutes of Health Research, Quebec Health and Social Services Minister.
Support by peers in the clinical team in oncology: Perception of the contribution of patient advisors to improve the patient experience. First Author: Marie-Pascale Pomey, Centre de Recherche du CHUM, Montréal, QC, Canada

Background: Since 2018, three establishments in Quebec have introduced patient advisors (PA) in their healthcare team in order to improve cancer patients’ experience. These PA, who have had a cancer experience, meet patients undergoing radiotherapy treatments or in oncogenetics for breast cancer on the healthcare site. They conduct consultations to complete the offer of services by bringing emotional, informational, and educational support. A longitudinal study of multiple cases was conducted from January to June 2020. After each accompaniment, the PA filled out a logbook to document the main themes covered and the accompanied patient filled out a survey to evaluate their experience one week after the intervention. A qualitative analysis of the logbook content and descriptive statistics were conducted. The REDCAP platform was used for monitoring the process of data collection and to administer the surveys online. Results: In total, 67 patients were accompanied by 4 PA. 71 logbooks were completed by the PA. The logbooks show that 70.3% of accompaniments took place right before radiotherapy and 63.6% following the results of the genetic test in oncogenetics. 50% of meetings took place in person in the establishment (in a space dedicated to the PA or not) and 45.8% were by phone. The meetings lasted approximately 37 minutes (min:15 minutes and max: 90 minutes). The majority met once (93.1%). The most common themes discussed: the role of the PA (94.1%), returning to day life (57.6%) and dealing with stress and anxiety (52.2%). 96% of PA felt that they did not encounter any difficulties during the accompaniment. For the accompanied women, the partnership was mostly beneficial for their experience with the illness (sharing experiences of side-effects, on the impact of the illness on every day life, with their social circle). 79% of patients found that the accompaniment met their needs. 90% of patients estimate that these meetings are complimentary to the healthcare professional’s intervention. Finally, 89.5% of companions considered that it would be very important to develop these types of meetings on a larger scale. Concerning the adaptation of spaces for the meetings, 26.3% are very satisfied and 26.3% are rather satisfied (probably an area for improvement).

Conclusions: Overall, the partnerships seem to answer the needs of accompanied patients and the PA can share their experience inside the clinical team. Research Sponsor: Canadian institutes of health research, Quebec Health and Social Services Minister.

Fostering interspecialty learning in cancer survivorship care: Learning suite results. First Author: Genevieve Chaput, McGill University, Montreal, QC, Canada

Background: As survivorship provision declines within cancer centres, primary care providers are increasingly entrusted in the follow-up care of cancer survivors. Empowering specialists and primary care providers about survivorship through educational interventions is essential. Interspecialty education is pivotal for improving patient-centered care. The study aims to develop, implement, and assess the feasibility of a survivorship learning suite (LS) that will improve interspecialty collaboration by providing educational interventions by family medicine and oncology specialists, navigate the different healthcare systems, and relay information plans and promote team-based care. Further studies are needed to examine the effects of care coordination interventions, like the use of care coordinators, on improving care for rural PC patients. Research Sponsor: None.

Better treatment at what cost? A study of myeloma spending. First Author: Robini Nasput, Provincial Drug Reimbursement Programs, Ontario Health (Cancer Care Ontario), Toronto, ON, Canada

Background: Multiple myeloma represents less than 1.5% of new cancer cases in Canada. Currently, the estimated median overall survival is at least 5-6 years, primarily driven by therapeutic advances over the past decade. As treatment protocols routinely use double and triplet combinations, there is uncertainty whether the current health care budget can support the costs of treatment. To inform system planning in Ontario, we examined trends in costs and utilization of myeloma drugs funded by Ontario’s New Drug Funding Program (NDFP) and the Ontario Drug Benefit program (ODB). Methods: NDFP primarily funds IV cancer drugs while ODB funds take-home cancer drugs (THCD). Treatment volumes and government costs, including drug costs and pharmacy fees where applicable, were obtained from ODB and NDFP claims data. Based on the available data, trends were examined from the 2010/11 to the second quarter of the 2019/20 fiscal year. Results: A total of 7 myeloma drugs (3-IV cancer drugs, 4-THCD) were examined. Over 9 years (2010/11 - 2018/19), spending on publicly-funded myeloma drugs increased by 303% while treatment volumes increased by 116%. Between 2014/15 and 2018/19, bortezomib spending decreased by 72%, largely due to generic pricing policies, while lenalidomide spending increased by 158%, likely due to new indications. By 2018/19, these 7 drugs accounted for 17% of the total cancer drug costs under Ontario’s publicly funded programs. NDP funding on IV cancer drugs by the second quarter of 2019/20 has surpassed the annual expenditures in 2018/19 due to the addition of daratumumab. Conclusions: Since 2010/11, growth in Ontario’s public expenditures on myeloma drugs has out-paced savings from pricing policies and this growth is mainly driven by the high cost of the novel agents. Research Sponsor: None.
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Healthcare resource utilization and economic burden of cytokine release syndrome (CRS) and neurologic events (NE) in patients (pts) with relapsed/refractory multiple myeloma (RRMM) receiving idecabtagene vilucel (ide-cel, bb2121) in KarMMA. First Author: Parameswaran Har, Medical College of Wisconsin, Milwaukee, WI

Background: Incidence, healthcare resource utilization (HRU), and management costs associated with CRS and NE were assessed among pts in the ide-cel KarMMA trial (NCT03361748) treated with ide-cel, a BCMA-directed CAR T cell therapy for RRMM. Methods: HRU occurring from onset to resolution of CRS and/or NE were consistent with those recommended in the clinical trial database. Costs associated with CRS or NE by grade (Gr) were applied using public databases and literature on United States national average costs from the health system perspective and aggregated across duration of events. Results: Of 128 pts treated with ide-cel, 107 had CRS with or without NE including 84 (65.6%) with CRS only and 23 (18.0%) with both; no pts had NE only. All cases of CRS with NE occurred concurrently (≤1 d of overlap). Most pts with CRS and/or NE had Gr ≥2 events (96/107, 90.7%); none had both Gr ≥3 CRS and NE. Of the 23 pts with both, 22 (95.6%) had CRS before or on the same day as NE. Among the 15 pts who had CRS before NE, NE developed in an average of 6.8 days after CRS onset. Of the 107 pts with CRS with or without NE, 67 (62.6%) received tocilizumab, 26 (24.3%) received tocilizumab and corticosteroids, and 19 (17.8%) received intensive care only. Only 5 pts (4.7%) required dialysis or intubation, all of whom had Gr ≥3 events. Management costs for CRS with or without NE were largely driven by hospitalizations (Table). Median cost ranges were $18,497-$23,258 for Gr ≥2 CRS, $33,183 for Gr ≥2 NE, and $60,588-$92,153 for Gr ≥3 CRS with or without NE. Overall median costs for Gr ≥2 or Gr ≥3 CRS with or without NE were $21,693 vs $99,894. Conclusions: In KarMMA, CRS or NE events were primarily Gr ≥2. An increase in HRU and management costs were associated with both CRS and NE. Management costs for Gr ≥2 vs Gr ≥3 CRS with or without NE were $14,331 $10,000 (70%) $4,331 (30%) 20 $11,864 $5,026 (42%) $6,838 (58%) 63 $12,675 $5,972 (47%) $6,703 (53%) 31 $12,675 $5,972 (47%) $6,703 (53%) 31

63 Poster Session

Medical cost of care by line of treatment (LoT) in Medicare Fee-for-Service (FFS) beneficiaries with KRAS-mutated metastatic non-small cell lung cancer (mNSCLC). First Author: Tata Matsuda, Amgen, Global Health Economics, Thousand Oaks, CA

Background: While no targeted therapy is currently approved for patients with KRAS-mutated mNSCLC, new therapies are being developed for patients with KRAS p.G12C mutations. However, existing evidence on the cost of care in mNSCLC is currently lacking. This study addresses this gap by describing costs of mNSCLC patients with KRAS mutations, stratified by LoT and relative to exposure to a PD(L)1i inhibitor (PD(L)1 i). Methods: Medicare FFS claims data (100% of beneficiaries) from 2015-2019 were analyzed. Patients with a primary diagnosis of metastatic mNSCLC with a metastatic cancer diagnosis code were included. Median costs were calculated to compare total costs. Results: 438 beneficiaries met inclusion criteria: median age 75 years, 54% female, 97% white, and 96% with G12C mutations. 1L patients receiving PD(L)1i had higher total medical costs ($14,331 vs $10,000 for Gr ≥2 or Gr ≥3 CRS with or without NE were $14,331 $10,000 (70%) $4,331 (30%) 20 $11,864 $5,026 (42%) $6,838 (58%) 63 $12,675 $5,972 (47%) $6,703 (53%) 31 $12,675 $5,972 (47%) $6,703 (53%) 31

64 Poster Session

Ovarian cancer patients’ perspectives on facilitators and barriers to accessing financial assistance. First Author: Margaret Irene Liang, University of Alabama at Birmingham, Birmingham, AL

Background: Our aim was to obtain ovarian cancer patients’ perspective on accessing financial assistance programs. Methods: We recruited ovarian cancer patients receiving systemic therapy who screened positive for financial distress using Compre- hensive Toxicity Score. Two interviewers conducted interviews on the costs of care, which were recorded and transcribed. Three coders used inductive thematic analysis to identify themes. Results: There were 18 of 22 interviews completed. Median age was 57 and 86% of participants were married. 78% of facilitators and barriers to accessing financial assistance are shown in the table below. Conclusions: Patients’ reliance on existing support systems and cancer organizations highlighted a need for health systems to leverage these networks. Incentive efforts to provide information related to financial assistance. Proactively asking about financial needs and providing resources to all patients, regardless of income, may mitigate patient reported barriers to accessing financial assistance. Research Sponsor: None.
Poster Session

Adolescent and young adult cancer patients’ health insurance experiences, expectations, and literacy. First Author: Austin R. Waters, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

Background: Adolescent and young adult (AYA) cancer patients (15-39 years of age) often report health insurance concerns and financial toxicity due to their life-saving treatment. AYAs often have limited experience with healthcare prior to their diagnosis, which may limit their understanding of health insurance concepts, coverage, and costs. To describe AYA health insurance experiences, expectations, and literacy, we conducted semi-structured interviews with AYA cancer patients and survivors.

Methods: Eligible participants were 18-39 years, diagnosed with cancer, and insured. Participants were recruited through an AYA cancer navigation program in Utah from 10/2019-03/2020. Participants were purposively sampled to achieve equal age strata (18-25 vs. 26-39), as patients under 26 often remain on their parents policy. Individual interviews were recorded, transcribed, and analyzed. Inductive qualitative analysis was conducted to describe their experiences with and understanding of their insurance. We calculated descriptive statistics of demographics and the Health Insurance Literacy Measure (HILM), a continuous measure ranging from 0-84 (higher scores indicate higher comfortability and literacy). Associations of age (18-25 vs. 26-39) and policy holder (yes vs. no with HILM score were evaluated with t-tests. Results: AYAs (N = 24) were nearly even by gender, female (58%), primarily heterosexual (92%), Non-Hispanic White (79%), and had at least some college (92%). Less than half of participants were policy holders (41.7%). Three themes emerged from analysis: 1) Lack of knowledge and experiential learning throughout treatment, 2) Unclear expectations of health insurance, and 3) Difficulties navigating coverage and the complex systems. Most AYAs were unaware of the specifics of their coverage and how their insurance plan impacted their costs. Most AYAs were surprised at the lack of coverage and high costs they encountered during treatment. Most AYAs experienced substantial difficulty navigating coverage issues, particularly the appeals process. The mean HILM score was 55.63 (SD = 10.06), no differences by age group or policy holder status. Conclusions: AYAs with cancer report substantial difficulty navigating the complex health insurance system and demonstrate low levels of health insurance literacy. Health insurance education focusing on insurance concepts (e.g., cost-sharing mechanisms) may help AYAs better manage costs and enable them to make informed health insurance decisions despite being at higher risk for financial toxicity. Research Sponsor: U.S. National Institutes of Health.

Poster Session

Applying the ASCO and ESMO Value Frameworks to nasopharyngeal cancer treatments: Is adding induction chemotherapy or adjuvant chemotherapy to concurrent chemoradiotherapy worthwhile? First Author: Teng Hwee Tan, National University Cancer Institute Singapore, Singapore, Singapore

Background: To determine and compare the incremental clinical benefit (ICB) and costs of induction chemotherapy (IC) when added to concurrent chemoradiotherapy (CCRT), concurrent chemotherapy (CC) added to RT and CC + adjuvant chemotherapy (AC) when added to RT for locally advanced nasopharyngeal cancer (LA-NPC). Methods: We searched phase III randomized controlled trials (RCTs) which reported overall survival (OS) benefit with the use of IC, CC and CC+AC in LA-NPC. We quantified the IC using the ASCO and ESMO value framework. We calculated the incremental drug costs in US dollars using the lowest average wholesale price reported in the Lexicomp drug database. Results: We identified three RCTs on IC, three RCTs on CC and four RCTs on CC + AC. The IC was judged to be Grade A based on the ESMO framework. The ASCO Net Health Benefit Score (NHBS) ranged from 17.43 to 57.39. The incremental drug costs ranged from 133.46 to 626.14. There were no statistically significant differences in the means of NHBS [39.37 (IC) vs 33.98 (CC+AC), P = 0.27] between these three approaches. There was no statistically significant correlation between ICB and costs. Conclusions: The magnitudes of ICB and incremental drug costs of adding of IC to CCRT, CC to RT and CC + AC to RT for LA NPC are not significantly different. Research Sponsor: None.

Poster Session

Systematic review and meta-analysis of incremental cost-effectiveness ratio (ICER) for new cancer drugs. First Author: Fernanda Alves Oliveira, American Society of Clinical Oncology, São Paulo, Brazil

Background: This systematic review and meta-analysis compared incremental cost-effectiveness ratios (ICERs) of cancer drugs and their relationship with society’s willingness to pay (WTP) across different countries, scenarios and indications. Methods: We sought for cost-effectiveness studies in PubMed, Embase, Cochrane and Lilacs published from December 2012 to December 2017. CAR-T cell therapies were excluded given short follow-up. We converted ICERS value and respective annualized lifetime Gross Domestic Product per capita (GDP) to provide a proxy for WTP threshold - into purchase-parity-power dollars (PPP) for better economic reality comparisons. Economics data came from the International Monetary Fund website. Characteristics studied in the distribution of ICERs values were compared using the Mann-Whitney or Kruskal-Wallis U-test with multiple comparison correction and simple linear regression. The chance of ICER being below the 1x GDP threshold was expressed as odds ratio and 95% confidence interval, calculated by logistic regression. Results: We retrieved 354 drug-versus-drug different assessments, PPPconversion increased median ICER of middle-income countries ($32k to $68$k$< 0.001). Median ICER was highest in USA ($154$k), followed by other high-income countries ($76$k; $< 0.001). In multiple regression, anti-VEGF (P < 0.001) and US-led (P = 0.03) studies had highest ICERs, while curative therapies (P = 0.02) had the lowest ones. 22% of studies were below the WTP bar, none of anti-VEGF, sipuleucel, anti-CD-30, castration-resistant, hepatocarcinoma, and renal cell ones. Immune checkpoint inhibition (OR 8.70; P = 0.045) and middle-income (OR 7.40; $< 0.001) studies were more likely above WTP, whereas curative therapies were more likely below WTP. Conclusions: Cancer therapies’ cost exceeding the WTPs is a worldwide pattern, with some factors related to ICER variation. These findings may foster better understanding and aid stakeholders deal with the global issue of high oncology drug costs. Research Sponsor: Union for International Cancer Control (UICC).

Poster Session

Applying the ASCO and ESMO Value Frameworks to nasopharyngeal cancer treatments: Is adding induction chemotherapy or adjuvant chemotherapy to concurrent chemoradiotherapy worthwhile? First Author: Christina Ahn Minami, Breast Oncology Program, Dana-Farber/Brigham and Women’s Cancer Center, Boston, MA

Background: Hospital volume is often equated with surgical quality. In breast surgical oncology, higher hospital volume has been associated with higher overall survival rates, but whether it is a proxy for quality with respect to low-value care remains unexplored. We first examined the association between hospital volume and the use of three breast surgeries identified as low-value by the Choosing Wisely campaign. Methods: Patients with stage 0-III unilateral breast cancer diagnosed from 2013-2016 were identified in the National Cancer Database. The outcomes of interest were: 1) contralateral prophylactic mastectomy (CPM), 2) axillary lymph node dissection (ALND) for breast conserving therapy (BCT) patients with cT1-2N0 disease and 3) sentinel lymph node biopsy (SLNB) in women ≥70 years old with cT1N0 breast cancer. Multivariable regression models with restricted cubic splines were used to examine the association between hospital volume and the use of three breast surgeries identified as low-value by the Choosing Wisely campaign. Additional studies were more likely above WTP, whereas curative therapies were more likely below WTP. Conclusions: Cancer therapies’ cost exceeding the WTPs is a worldwide pattern, with some factors related to ICER variation. These findings may foster better understanding and aid stakeholders deal with the global issue of high oncology drug costs. Research Sponsor: Union for International Cancer Control (UICC).

Poster Session

is less more? The association between hospital volume and low-value breast cancer surgeries. First Author: Christina Ahn Minami, Breast Oncology Program, Dana-Farber/Brigham and Women’s Cancer Center, Boston, MA

Background: Hospital volume is often equated with surgical quality. In breast surgical oncology, higher hospital volume has been associated with higher overall survival rates, but whether it is a proxy for quality with respect to low-value care remains unexplored. We first examined the association between hospital volume and the use of three breast surgeries identified as low-value by the Choosing Wisely campaign. Methods: Patients with stage 0-III unilateral breast cancer diagnosed from 2013-2016 were identified in the National Cancer Database. The outcomes of interest were: 1) contralateral prophylactic mastectomy (CPM), 2) axillary lymph node dissection (ALND) for breast conserving therapy (BCT) patients with cT1-2N0 disease and 3) sentinel lymph node biopsy (SLNB) in women ≥70 years old with cT1N0 breast cancer. Multivariable regression models with restricted cubic splines were used to examine the association between hospital volume and the use of three breast surgeries identified as low-value by the Choosing Wisely campaign. Additional studies were more likely above WTP, whereas curative therapies were more likely below WTP. Conclusions: Cancer therapies’ cost exceeding the WTPs is a worldwide pattern, with some factors related to ICER variation. These findings may foster better understanding and aid stakeholders deal with the global issue of high oncology drug costs. Research Sponsor: Union for International Cancer Control (UICC).
69 Poster Session

Employment concerns experienced by ovarian cancer patients and caregivers. First Author: Margaret Irene Liang, University of Alabama at Birmingham, Birmingham, AL

Background: Our aim was to obtain patient input on the impact of cancer treatment on employment. Methods: We recruited patients with ovarian cancer receiving systemic therapy who screened positive for financial distress using Comprehensive Score for Financial Toxicity (COST) <26. Participants completed a 45-minute interview with 2 interviewers on their costs of care, including employment concerns. Interviews were recorded, transcribed, and coded by 3 analysts using inductive thematic analysis. Results: Of 22 participants, 86% were <65 years old and 28% were on curative intent treatment. There were 18 with currently evaluable interviews. Themes are shown in the table. Conclusions: Cancer care has a negative impact on patient and caregiver work productivity, income, and employment benefits. Incorporating resources to navigate workplace factors, such as Family Medical Leave Act benefits and negotiating accommodations with an employer, could improve care delivery.


Themes related to employment during cancer treatment.

Patient concerns

Loss of work productivity "Being sick at work and having to leave early sometimes, or missing the whole day, missing out on training...I had insurance maybe two promotions"

Inability to work "Prior to [my cancer diagnosis], I was an RN nurse. And then I've been on disability since trying to go back to work. But every time I go back to work or try to go back full time, the cancer returns...my body can't do what it used to. So, no, I don't feel like I'll ever get to go back to work. I want to because I want what I do"

Keeping employer-based insurance "If you're out of work, you need to get that insurance, but you have to pay what the hospital would normally pay. So it was like six or eight-hundred dollars a month for me to be able to keep that on just myself"

Caregiver concerns

Transportation "I have to have someone drive me because I can't drive now...my husband will try to take some time...if my mother is feeling well, she has cancer also...she'll try to bring me...and my sister, she let her business slide trying to bring my mom in for treatments"

Symptom management "When they...effects of the chemo had me so down where I couldn't get out of bed, he had to stay home"

Workplace factors

Family Medical Leave Act "My husband has run out at work...so am I a family medical leave. They said they would hold my job, but I am not getting paid when I am off"

Workplace accommodations "[My daughter] didn't change his job...but she got a promotion, so she could work from home so she could care for me"

"[My workplace] did not really believe me. They just thought I wanted to be off work. So they gave me a really hard time"

70 Poster Session

Prevalence of financial and health insurance literacy and their association with financial hardship in cancer patients. First Author: Nandita Khera, Mayo Clinic, Phoenix, AZ

Background: The prevalence of health insurance literacy (HL) and financial literacy (FL) in cancer patients is not well described. Further, a better understanding of the association between these constructs and the domains of financial hardship (FH) can help target interventions.Methods: We examined the prevalence of HL and FL in cancer patients on active treatment at our institution. HL and FL were assessed using Health Insurance Literacy Measure (HILM) and 5 questions from the National Financial Capability Study respectively. Logistic regression analysis with the National Health Interview Survey (NHIS) questions were used to examine overall FH and its 3 domains (material, behavioral and psychological hardship). Pearson correlation coefficient was used to describe the relation between the COST score and FH domains as assessed by NHIS questions. Logistic regression analysis was performed to determine the associations of overall FH (measured by COST FACIT) with HL and HILM.

Results: Among 256 patients approached, 202 completed questionnaires. Median age was 67 (range 22 to 91) years. 51% were male, 93% Whites and 5% were Hispanic. 69% had a solid tumor with 37% stage IV. Median number of lines of treatment was 4 (range 1 to 18), 21% were currently employed, 59% had college degree, 41% had private insurance and 42% had monthly income ≥$7000. 50% participants answered at least 4/5 FL questions correctly, indicating high FL. Being male, White, having insurance, higher education and income ≥$7000 were associated with higher FL. 72% of participants had high HIL, and they were more likely to be Non-Hispanic, married and have received more lines of treatment. FL significantly correlated with education (r = 0.29, p < .001), 65% patients endorsed FH based on NHIS questions (10% behavioral, 20% material, and 62% psychological hardship). 48% patients had FH based on a COST score < 28 (Median score), which correlated with material (r = -0.59, p < .001), psychological (r = -0.55, p < .001) and behavioral FH (r = -0.42, p < .001). The association between FH and HIL was not significant (OR 0.78, p = 0.08), though higher FL was associated with lower OR (0.69; p = 0.02).

Conclusions: Although high FL and HL (as compared to national standards), the prevalence of FH in our relatively affluent patient cohort was high, driven mainly by psychological hardship. We did not find strong association between the HIL and HF unlike in the reported literature. Our findings behove us to develop tailored interventions to address unique domains of the FH in a diverse population. Research Sponsor: None.

71 Poster Session

Exploring the three domains of financial hardship experienced by ovarian cancer patients. First Author: Margaret Irene Liang, University of Alabama at Birmingham, Birmingham, AL

Background: We sought to obtain ovarian cancer patients’ perspective on the 3 domains of financial hardship (psychological response, material conditions, and coping behaviors). Methods: We recruited ovarian cancer patients on systemic therapy who screened positive for financial distress using Comprehensive Score for Financial Toxicity (COST) <26. Two interviewers conducted 45 minute interviews about patients’ experiences dealing with the costs of care. Interviews were recorded, transcribed, and coded by 3 analysts using inductive thematic analysis. Results: Of 22 patients completed interviews with 18 available for analysis. Median age was 57 years old, 36% were black, and participants had a median COST of 12 (range 0-23). We identified themes within each domain (Table). Conclusions: Ovarian cancer patients predominately experienced financial hardship through psychological response and negative impact on their material conditions. These require increased provider awareness and targeted interventions. Patients did not report negative health related coping behaviors as they prioritized their health care over immediate cost concerns. Research Sponsor: U.S. National Institutes of Health, University of Alabama at Birmingham Center for Women’s Reproductive Health.

Patient experiences with financial hardship.

Psychological response

Depression and anxiety "It affected me mentally. It was very stressful, depressing sometimes, worrying about how was I going to get this done, paid for or get that bill paid...So it was...It affected me mentally. It was very stressful, depressing sometimes, worrying..."

Fear and shame "When you sit in fear of answering the telephone and summons is being sent to your door saying that you owe this money that they’re going to sue you and put you in jail...It’s very hard because we’ve always been you know, you pay your bills on time and you hold that date and time and you know...I don’t know if I would do the same thing if I was in this situation"

Material conditions

Depleted assets "Basically, we depleted everything we had. We’re at that. It’s scary, but we’re there...We’ve sold everything we’ve had...It’s kind of sad"

Accumulated debt "Borrowing from family and friends, taking out payday loans, taking advances on my credit cards"

Inability to pay bills "If I don’t have it to pay, I just didn’t pay. And a lot of bills started stacking up...Some of them has gone to collectors because of my inability to pay them and get paid on time"

Coping behaviors Health prioritized over costs "It would have been devastating, but to me what my most important thing was getting the care, and just worrying about the cost later, or however the cost came"
Cost-effectiveness of filgrastim-sndz as primary prophylaxis (PP) versus secondary prophylaxis (SP) to prevent chemotherapy-induced febrile neutropenia (FN) in breast cancer patients at intermediate risk.

First Author: Edward C. Li, Sandoz, Princeton, NJ

Background: According to clinical practice guidelines, the threshold for routine myeloid growth factor (MGF) PP is a high risk (>20%) of developing FN. However, in real-world practice, many oncologists treat FN prophylaxis in patients with a risk of FN <20% on an empirical basis every 21 days regardless of whether they are at intermediate risk (<20%) of developing FN. This study evaluates the cost-effectiveness of PP vs. SP using a biosimilar MGF, filgrastim-sndz, in early-stage breast cancer patients at intermediate risk of FN. Methods: A Markov model with a lifetime horizon was constructed to evaluate the total costs and clinical outcomes when using filgrastim-sndz as PP vs. SP in a 56 year old early-stage breast cancer patients receiving adjuvant docetaxel (following doxorubicin/cyclophosphamide) every 3 weeks for 4 cycles. The model considered 4 health states: Febrile Neutropenia (FN), chemotherapy delay, chemotherapy dose reduction, and death. Deterministic and probabilistic sensitivity analyses (PSA) were conducted.

Results: The ICER of filgrastim-sndz vs. SP was $2,106 and 378 LYs. Average Sales Price (ASP) calculated from the Centers for Medicare & Medicaid Services July 2020 ASP Drug Pricing File was used as the filgrastim-sndz cost. Incremental cost-effectiveness ratios (ICERs) were calculated for cost per FN event avoided, life-year saved (LYS), and quality-adjusted life-year (QALY) gained from a United States payer perspective. Deterministic and probabilistic sensitivity analyses (PSA) were conducted. Results: For patients treated with filgrastim-sndz vs. SP, there was a 1.1% increase in QALYs, 3.2% increase in LYs, and 65% reduction in FN events avoided.

Conclusion: The results of this model suggest filgrastim-sndz is an effective and cost-effective prevention strategy among breast cancer patients. Future research will evaluate the cost-effectiveness of filgrastim-sndz vs. placebo in patients with a low risk of developing FN (<20%).

Poster Session 74
Effectiveness of immunotherapy given to cancer patients in the hospitalized setting.
First Author: Mosjoa O Araya, University of Connecticut Department of Internal Medicine, Farmington, CT

Background: Immunotherapy is a type of cancer treatment that uses an individual’s immune system to fight cancer. Most clinical trials involving immunotherapy have been done on healthy patients, thus excluding many hospitalized patients. Moreover, oncologists feel there are less significant toxicities to immunotherapy and thus may give them to sicker patients. This may delay discussions regarding goals of care and contribute to increased costs at end of life. This exploratory study focuses specifically on the use of immunotherapy in cancer patients treated in hospital settings.

Methods: This is a retrospective chart-review study. Data on patients from the Hartford Healthcare system was extracted from EPIC. Patients were eligible if they had received at least one dose of a PDL1 or PD1 inhibitor (pembrolizumab, nivolumab, atezolizumab) during a hospital stay. The number of doses received in total, side effects, as well as discharge status was also recorded.

Results: A total of 74 patients received at least one dose of a PDL1 or PD1 inhibitor during a hospital stay, 46% of the total patients treated either died in the hospital (16.2%) or were discharged to hospice (29.3%). 54 percent of patients were discharged with a plan to continue with therapy. For the subgroup of the 27 patients whose treatment was initiated in the hospital, 48% of them received only one cycle of treatment and 74% received less than 4 treatments total. The average number of cycles was 5.3. The percentage of patients who died in the hospital was 11.1% and the percentage of patients discharged to hospice was 33.3%. 65.5% were successfully discharged with a plan to continue with therapy.

Conclusions: For patients who receive immunotherapy in the hospital setting there is a questionable benefit with more than 45% dying in the hospital or being discharged to hospice. Further evaluation can be done looking at increasing the cost, delaying palliative care, and patient/family satisfaction of such care by giving immunotherapy in the hospital. A new quality measure looking at time from last immunotherapy to hospice enrollment or death may need to be followed in the future due to these poor outcomes in the hospital setting.

Poster Session 76
Health care resource utilization (HCRU) and total costs of care (TCOC) among patients (pts) with diffuse large B-cell lymphoma (DLBCL) treated with chimeric antigen receptor (CAR) T-cell therapies in the United States: An analysis of four claims databases.
First Author: Scott J. Keating, Bristol-Myers Squibb Company, Summit, NJ

Background: Non-Hodgkin lymphoma comprises a heterogenous group of hematologic malignancies, including aggressive lymphomas such as DLBCL. Novel treatment modalities include CAR T-cell therapies. Objective was to assess the economic burden associated with CAR T-cell therapies. Methods: Pts with DLBCL treated with CAR T-cell therapies were identified in 4 claims databases: MarketScan, n = 60; Optum Clinformatics, n = 56; IBM MarketScan, n = 75; and Humana, n = 140 from September 2017–July 2019. Mean total, inpatient, outpatient, and pharmacy costs were calculated and adjusted to 2019 US dollars. HCRU and costs were stratified by adverse events (AEs) of interest—cytokine release syndrome (CRS) and neurological events (NEs). Additional AEs identified through unvali- dated “loose” and “strict” criteria. Results: A total of 205 pts were identified. Across databases, mean (median) baseline age was 65 (63) yrs, 59% (62%) were male, and 56% (44%) had Medicare. Inpatient treatment was initiated in a hospital setting. Across databases, mean initial treatment was initiated in the hospital setting. In the 3 months after CAR+ T-cell infusion, mean TCOC for all pts ranged from $353,642 ± $525,772 across databases (Table); mean TCOC were highest among pts who had CRS (3,444–4,876 ± 730,224; strict CRS criteria). Mean inpatient length of stay (LOS) ranged from 17–21 days and was longer among pts who had CRS (16–23 days) vs. n = 62 or NEs (20–24 days; n = 89) (strict CRS/ NE criteria). Conclusions: HCRU and TCOC among pts with DLBCL treated with CAR T-cell therapies were generally higher among pts who experienced severe CRS or NEs. Payers and health care systems may benefit from considering the total cost of CAR T cell therapy, including HCRU associated with treatment-emergent AEs. Research Sponsor: Bristol-Myers Squibb Company.

<table>
<thead>
<tr>
<th>Variable</th>
<th>CIN/Frontline (n = 56)</th>
<th>Human (n = 154)</th>
<th>72/11 (n = 60)</th>
<th>Pharmacy (n = 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs, mean</td>
<td>$534,625±$527,772</td>
<td>$484,809±$466,553</td>
<td>$476,525±$453,140</td>
<td>$525,140±$509,645</td>
</tr>
<tr>
<td>Outpatient</td>
<td>$32,285±$31,071</td>
<td>$29,897±$28,671</td>
<td>$30,677±$29,461</td>
<td>$31,071±$29,897</td>
</tr>
<tr>
<td>Inpatient</td>
<td>$32,882±$32,042</td>
<td>$31,973±$31,111</td>
<td>$32,111±$31,973</td>
<td>$32,042±$31,888</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>$31,042±$29,897</td>
<td>$30,111±$28,961</td>
<td>$30,461±$29,304</td>
<td>$30,111±$29,111</td>
</tr>
<tr>
<td>CRS, n (%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
</tr>
<tr>
<td>Ne, n (%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
</tr>
<tr>
<td>Severe NE, n (%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
<td>88% (78%)</td>
</tr>
<tr>
<td>Mean</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Median (range)</td>
<td>19 (17–20)</td>
<td>19 (17–20)</td>
<td>19 (17–20)</td>
<td>19 (17–20)</td>
</tr>
</tbody>
</table>

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Biosimilar usage in practices within the ASCO PracticeNET learning network. First Author: Brian Bourbeau, American Society of Clinical Oncology, Alexandria, VA

Background: In recent years, several antineoplastic biosimilar products have been approved and marketed for use. We analyzed data from the ASCO PracticeNET learning network to examine the adoption of biosimilar products for bevacizumab, rituximab, and trastuzumab. Methods: Our analysis included the following products: bevacizumab, bevacizumab-awwb, bevacizumab-zvtr, rituximab (excluding rituximab and hyaluronidase), rituximab-abx, trastuzumab, trastuzumab-anns, and trastuzumab-dkst. administered from July 2019 to March 2020. 19 practices submitted their billing data; practices ranged in size from 2 to 29 hematologists/oncologists. Products were identified through use of healthcare common procedure coding system codes. The proportion of biosimilar product doses administered, as a percent of total doses for all related products, was calculated per participating practice. Results: Use of biosimilar products for bevacizumab first biosimilar approval in November 2018) was first detected in August 2019, averaging 14% of administered doses (confidence intervals included in Table) with a range from 0% to 27% among participating practices; by March 2020, average use increased to 31% with a range from 0% to 100%. Use of biosimilar products for trastuzumab (first biosimilar approval in December 2017) was first detected in September 2019, averaging 9% of administered doses with a range of 0% to 17%; by March 2020, average use increased to 35%, with a range of 0% to 98%. Conclusions: The release of biosimilar products has been identified as a potential opportunity to lower the cost of drug therapy for cancer patients. Our analysis identified an approximate 2-year lag from product approval to initial utilization followed by a steady increase in the use of biosimilar products, along with a wide range of use among practices. Research Sponsor: None.

<table>
<thead>
<tr>
<th>Month</th>
<th>Bevacizumab</th>
<th>Rituximab</th>
<th>Trastuzumab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul-19</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Aug-19</td>
<td>1.4% (4%, 6%)</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Sep-19</td>
<td>3.7% (10%, 10%)</td>
<td>0%</td>
<td>0.9% (0.2%, 2%)</td>
</tr>
<tr>
<td>Oct-19</td>
<td>10% (0.3%, 24%)</td>
<td>0%</td>
<td>13% (0%, 27%)</td>
</tr>
<tr>
<td>Nov-19</td>
<td>16% (3.3%, 27%)</td>
<td>0%</td>
<td>20% (4.3%, 37%)</td>
</tr>
<tr>
<td>Dec-19</td>
<td>17% (5.5%, 28%)</td>
<td>0%</td>
<td>26% (8.5%, 43%)</td>
</tr>
<tr>
<td>Jan-20</td>
<td>22% (9.2%, 35%)</td>
<td>2.6% (0.6%, 6%)</td>
<td>29% (0%, 48%)</td>
</tr>
<tr>
<td>Feb-20</td>
<td>27% (11%, 43%)</td>
<td>16% (3.9%, 38%)</td>
<td>29% (2%, 46%)</td>
</tr>
<tr>
<td>Mar-20</td>
<td>33% (8%, 48%)</td>
<td>18% (3.2%, 29%)</td>
<td>39% (15%, 53%)</td>
</tr>
</tbody>
</table>

Average use of biosimilar products per reference product (95% confidence intervals in parentheses).

Conclusions: The release of biosimilar products has been identified as a potential opportunity to lower the cost of drug therapy for cancer patients. Our analysis identified an approximate 2-year lag from product approval to initial utilization followed by a steady increase in the use of biosimilar products, along with a wide range of use among practices. Research Sponsor: None.
Compliance with every 12-week zoledronic acid dosing guidelines for bone metastasis in breast cancer patients. First Author: Monika Kumar, University of Texas Southwestern Medical School, Dallas, TX

Background: Bisphosphonates, including zoledronic acid (Zometa), decrease skeletal-related events in breast cancer patients with bone metastasis but are also associated with side effects and utilization costs. Data from a randomized trial supporting 12-week versus 4-week dosing of Zometa was released in July 2016 and officially published in January 2017. We examined the practice pattern of Zometa dosing over time in our practice to determine compliance and develop interventions for improvement. Methods: We conducted a retrospective chart review on all breast cancer patients treated at Parkland Health and Hospital System oncology clinic to identify patients who were initiated on Zometa for bone metastasis between June 2015 and September 2019. The initially prescribed dosing frequencies were assessed for time periods before and after the Zometa dosing data was released. The prescribing patterns were also compared between teaching and non-teaching clinics. Conclusions: We found that the variability in Zometa prescribing patterns persisted despite updated national guidelines and multiple studies supporting 12-week dosing intervals. In addition to educational interventions, we plan to implement electronic interventions to improve rates of compliance with the goal of 80% adherence by September 2020. Improved adherence will likely lead to a reduction in potential complications from treatment as well as infusion costs (estimated $482.81 saved per patient annually). Research Sponsor: None.

Financial burdens of insured adolescent and young adult cancer patients: A need for crowdfunding platforms, fundraisers, financial grants, and cost conversations with their cancer care team. First Author: Karely Mann, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

Background: Cancer patients in the United States often experience distress surrounding out of pocket costs from treatment. Adolescents and young adults (AYA) are more likely to be underinsured, skip care due to cost, go into debt, and file for bankruptcy after a cancer diagnosis than patients diagnosed at older ages. We conducted semi-structured interviews with AYA cancer patients and survivors to evaluate their experiences with health insurance, cancer costs and use of crowdfunding. Methods: Eligible participants were aged 19-39, diagnosed with cancer, and currently insured. Recruitment occurred largely through patient navigators at two large cancer centers from October 2019 to March 2020. Data was collected via individual semi-structured telephone interviews, which were analyzed for content. Questions were asked pertaining to crowdfunding platforms, fundraisers, satisfaction with current health insurance policy, and cost conversations with their cancer care team. Interviews were analyzed applying two rounds of thematic content analysis. Summary statistics were calculated for demographics. Results: Twenty-four interviews were completed, with more than half of participants being female (54%), most participants being Non-Hispanic White (79%), mean age at 26.5, and currently receiving cancer treatment (79%). Three themes emerged about AYAs’ experience with treatment costs and health insurance: 1) Even with insurance, cancer care was unexpectedly expensive and burdensome on financial wellbeing; 2) Conversations about cost with cancer care teams were brief and rare and 3) Crowdfunding platforms, fundraisers or financial grants were often used as financial safety nets, and did not cover all out of pocket costs. More than half of participants expressed interest in having cost conversations with their oncologist, nurse or social worker. All participants expressed a need for education on managing cancer costs and a particular interest in educational information on appeals and out of pocket costs. Conclusions: AYAs with cancer report unexpected costs and are interested in discussing this with their cancer care team. AYAs often receive money from fundraisers, financial grants or crowdfunding platforms to assist with the expenses of treatment. Discussions between cancer care teams and AYA patients about health insurance policies and cost saving mechanisms may help reduce out of pocket costs and reliance on external financial mechanisms. Research Sponsor: U.S. National Institutes of Health.
Disproportionate impact of COVID-19 disease among racial and ethnic minorities in the U.S. cancer population as seen in CancerLinQ® discovery data. First Author: Danielle Potter, American Society of Clinical Oncology, Alexandria, VA

**Background:** Patients with cancer may face difficult care decisions during the COVID-19 outbreak in the US. Understanding COVID-19 risk factors may help patients and oncologists identify high-risk patients and plan for the best cancer treatment in a timely fashion. This analysis provides an assessment of racial and ethnic risk factors for COVID-19 disease within the CancerLinQ® Discovery database.

**Methods:** CancerLinQ® collects and stores longitudinal electronic health record (EHR) data from oncology practices throughout the United States. Patients with a diagnosis of a malignant neoplasm and at least two encounters in the past year at a reporting CLQ practice were defined as the underlying cancer patient population at risk for SARS-CoV-2 infection. COVID-19 cases were identified via a positive RT-PCR test for SARS-CoV-2 RNA or an ICD-10 code for coronavirus (e.g., B97.29, U07.1, or U07.2). Relative risks and 95% CI were calculated using SAS. **Results:** We identified 232,428 patients with cancer. From 1/1/2020-4/30/2020, we identified 223 COVID-19 cases in patients with cancer. Of these, 203 had a positive RT-PCR, 26 had an ICD-10 diagnosis code for SARS-CoV-2, and 6 had both. SARS-CoV-2 cases were identified from 19 of the 35 CLQ practices (52.8%) reporting data during the study period. Compared to white patients, African Americans were approximately 2 times more likely to have COVID-19 disease (HR = 2.10, 95% CI = 1.60-2.71), and Hispanics were more than 4 times more likely (RR = 4.65; 95% CI = 3.36-6.43). Patients with hematologic cancers were 1.5 times as likely to be diagnosed with COVID-19 (RR = 1.53; 95% CI = 1.09-2.16) compared to patients with solid tumors. At the time of this abstract, 10 patients (4.5%) died. **Conclusions:** These results are based on data from a sample of CLQ practices and represent an initial analysis of COVID-19 in the CLQ population. The elevated risk for COVID-19 among African Americans and Hispanics with cancer is noteworthy, particularly since these patients often suffer poorer cancer outcomes. The elevated risk among patients with hematologic cancers is also worth noting because these patients often have compromised immune systems and are already susceptible to many other types of infection. Because the US is in the midst of an active outbreak, we are continuing to analyze COVID-19 cases and additional risk factors, such as geographical location, anti-cancer treatments, and other cancer variables (e.g. stage). Research Sponsor: ASCO CancerLinQ.

Conclusions: Financial hardship continues to be a significant determinant of these disparities and interventions are needed. Research Sponsor: None.

**Conclusion:** A lack of racial/ethnic diversity among cancer therapeutic clinical trial (CTC) participants remains a critical problem. The significance of costs, both direct and indirect, associated with cancer CTC participation is increasingly understood. Here, we report findings observed in the Impact Patient Access to Cancer Clinical Trials (IMPACT) study, a pilot feasibility study investigating the feasibility and efficacy of offering a financial reimbursement program (FRP) during cancer CTC discussion with or without additional outreach in improving enrollment and diversity. **Methods:** Participants for this study were recruited at two Comprehensive Cancer Centers (CCCs) from April to September 2019. Patients were randomized 1:1 to receive a brochure about a FRP at time of consent for a CTC or receive outreach through a scripted follow-up phone call regarding the FRP. **Results:** No difference in TCT enrollment was observed between study arms. Among 170 patients approached to participate, 132 (78%) provided consent. The participant mean age was 57 years old (std dev = 14 years). Among participants 57% were male and 49% were white. The remaining major racial/ethnic groups were Black (5%) Asian (13%) and Hispanic (26%). The proportion of non-whites was greater among IMPACT study (43%) compared to CCC TCT (28%) participants. Among FRP participants, 24% reported a household income < $25,000 and 14% from $25,001 to $55,000. **Conclusions:** This study observed that offering an FRP as part of TCT discussion is feasible and effective at CCCs. An outreach phone call is not required in order to influence enrollment in TCT. FRP recipients are racially/ethnically diverse and low socioeconomic status. Research Sponsor: Lazarex Cancer Foundation.

**Conclusions:** The utilization of telehealth increased exponentially. There were significant disparities in the use and type of telehealth among race/ethnicity groups. Telehealth use was less accessible to minority populations. There was a lack of oncologists conducting telehealth. Within our cancer center, our demographic breakdown for patients seen in 2019 includes 42% patients were white, 23% Black, 14% Hispanic and 7% Asian. Among those patients utilizing video visits, 17% were Black, 8% Asian, and 5% Hispanic. About 40% of patients utilizing phone encounters, 10% patients were white, 23% Black, 7% Hispanic and 6% Asian. **Conclusions:** During the COVID-19 pandemic our utilization of telemedicine increased exponentially. There were significant disparities observed in the use of telehealth with Black, Hispanic and Asian patients having more utilization. These findings are important as telehealth will now become more integrated into standard oncologic care, and it is likely that we will have a second or third wave of COVID-19 infections. Future work to understand the characteristics of these disparities and interventions are needed. Research Sponsor: None.

**Conclusions:** The use of telehealth varies by race/ethnicity and socioeconomic status. There were significant disparities in the use of telehealth between race/ethnicity groups. Utilization of telehealth was less accessible to minority populations. There was a lack of oncologists conducting telehealth. Within our cancer center, our demographic breakdown for patients seen in 2019 includes 42% patients were white, 23% Black, 14% Hispanic and 7% Asian. Among those patients utilizing video visits, 17% were Black, 8% Asian, and 5% Hispanic. About 40% of patients utilizing phone encounters, 10% patients were white, 23% Black, 7% Hispanic and 6% Asian. **Conclusions:** During the COVID-19 pandemic our utilization of telemedicine increased exponentially. There were significant disparities observed in the use of telehealth with Black, Hispanic and Asian patients having less utilization. These findings are important as telehealth use will now become more integrated into standard oncologic care, and it is likely that we will have a second or third wave of COVID-19 infections. Future work to understand the characteristics of these disparities and interventions are needed. Research Sponsor: None.
The COVID-19 pandemic impact on breast cancer care delivery at an academic center in New York City. First Author: Tejus Satish, Columbia University Vagelos College of Physicians and Surgeons, New York, NY

Background: The coronavirus disease 2019 (COVID-19) pandemic has altered healthcare delivery. To save resources and reduce patient exposure, non-urgent care has been postponed. Previous work has focused on cancer patients. Here, we present descriptive data on breast cancer care without COVID-19. We aimed to characterize breast cancer (BC) patients without COVID-19 whose care was impacted by the COVID-19 pandemic at an academic center in New York City. Methods: We performed a retrospective cohort study of BC patients treated at a medical oncology practice between 2/1/2020-4/30/2020. Patients were included if they were scheduled to receive intravenous or injectable therapy or were scheduled as a new patient. Patients were excluded if they tested positive for COVID-19 or transferred care during the study period. Demographic and treatment information were obtained by chart review. Delays/changes in systemic therapy, imaging, interventional radiology procedures, radiation, and surgery were tracked. Delays were defined as postponements of scheduled care. Changes were defined as care alterations without postponements. Care impact was defined as any change/delay in any of the above oncologic care a patient was scheduled for. We conducted a univariate analysis to compare demographics and care impact using x² analyses. Results: Of 351 eligible patients, the majority had stage 0-III BC (71.9%) and hormone receptor-positive HER2-negative BC (69.5%). Less than half were Caucasian (43.9%). Care was impacted due to the pandemic in 149 (42.5%) of patients. Surgery changes/delays were most frequent (37 of 84 patients, 44.0%), followed by changes/delays in systemic therapy (90 of 351 patients, 25.9%). Imaging (58 of 351 patients, 16.5%) and changes/delays in systemic therapy (90 of 351 patients, 25.9%) were more frequent among Asian, Black, and other non-reported races. Patients diagnosed with non-metastatic solid organ cancers (13.4%) or brain metastases (10.9%) had the lowest rates of systemic therapy delays. Medicaid patients were more likely to have evidence of testing with any biomarkers (57% vs. 71%; P = 0.01). In the adjusted analysis, Medicaid pts were less likely to have evidence of testing (HR [95%CI]: 0.70 [0.58, 0.84], p < 0.01). A higher risk of death was observed in Medicaid vs. commercially insured pts (HR [95%CI]: 1.23 [1.13, 1.34], p < 0.01) which was partially mediated after adjusting for testing and treatment (HR [95%CI]: 1.05 [0.98, 1.12], p = 0.01). Medicaid Medicare and Medicaid patients were also more frequently impacted vs. commercially insured patients (54.7% vs. 41.4% vs. 36.2%, p = 0.02). BC stage and hormone receptor status were not significantly associated with care impacts. Conclusions: We found that nearly half of our BC patients experienced a change/delay in workup or treatment during the COVID-19 pandemic. We also found significant racial and socioeconomic disparities in the likelihood of care impact. Ongoing studies will determine the impact of alterations in care on cancer outcomes. Research Sponsor: None.

Racial disparities in adolescent and young adult cancer clinical trial enrollment. First Author: Elizabeth Siembida, Center for Health Innovation and Outcomes Research, Northwell Health, Manhasset, NY

Background: African American/Black (Black) patients have historically been underrepresented in cancer clinical trials (CCTs); additionally, adolescents and young adults (AYAs; diagnosis between 15-19 years) enroll on CCTs at alarming rates. However, few studies have explored the participation of Black young adults (AYAs) in CCTs. Therefore, we compiled data from 2012 to 2018 from National Cancer Institute (NCI)-sponsored CCTs and compare enrollment of Black AYA to enrollment of Black children (<15 years) and adults (40+ years). Methods: Utilizing data from the Cancer Therapy Evaluation Program, we compared Black AYA enrollment to CCTs from the NCI Cancer Therapy Evaluation Program. The total Black AYA enrollments and the proportion of Black AYA enrollments by age (15-19, 20-29, 30-39 years) and sex. We also compared the proportion of Black AYA enrollments to the proportion of Black children and adult enrollments. Enrollment proportion was defined as Black enrollments over total age group enrollment. The χ² test was used to assess differences in proportional enrollment between groups. P values < 0.05 were considered statistically significant. Results: From 2000-2016, 3,893 Black AYAs enrolled onto NCI-sponsored CCTs. Black AYA enrollment was lowest among 20-29 year-old AYAs (N=719) compared to 15-19 year-old (N=1,074) and 30-39 year-old AYAs (N=1,408). The proportion of enrollments of Black AYA patients 15-19 was significantly higher than enrollments for AYAs age 20-29 and 30-39 (12.6% vs. 10.9% vs. 10.9%, respectively, both p < 0.001). The proportion of male Black AYA enrollments decreased by age, with 61.8%, 40.9%, and 22.6% male enrollment for patients age 15-19, 20-29, 30-39, respectively. Despite a significantly higher incidence of cancer in AYAs compared with children, 20.5% more Black children enrolled on trials compared with Black AYAs. The proportion of Black AYA enrollment increased marginally (p = 0.01), and among those aged 15-19 (11.3% vs. 10.6%, p = 0.04), and significantly higher than Black adults (13.3% vs. 8.0%, p < 0.001). The proportion of Black AYA enrollments did not significantly change between 20-29 and 30-39 age groups (p=0.33). Conclusions: Racial disparities exist within AYA enrollment on CCTs, with Black AYAs age 20-29 and Black male AYAs least likely to enroll. Despite an increasing focus on improving CCT enrollment of underrepresented groups, enrollment of Black AYA has not increased. Future studies are needed to elucidate barriers and facilitators to CCT enrollment to guide future intervention development. Research Sponsor: None.
HEALTH EQUITY AND DISPARITIES

Rapid Abstract Session

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When offered to participate: A systematic review and meta-analysis of patient agreement to participate in cancer clinical trials. First Author: Joseph M. Unger, Fred Hutchinson Cancer Research Center, Seattle, WA

Background: Patient participation in clinical trials (CTs) is vital for knowledge advancement and outcomes improvement. The rate of CT participation for adult cancer patients is between 5%-8%; many CTs fail due to poor accrual. Although CT participation is a common focus of studies examining barriers to CT participation, the rate of trial participation for patients actually offered a CT is unknown. Methods: We conducted a systematic review and meta-analysis using PubMed, Web of Science, and Ovid Medline search engines to identify studies published between 2000-2020 (N=1,220) that examined CT participation. Studies must have been conducted in the United States and specified the number of participating patients. We conducted a meta-analysis of single proportions using random effects. Results: For 20 trials, 53,014 patients were offered CT participation. Overall, 55.0% (95% CI: 49.4%-60.5%) of patients offered a CT agreed to enroll. Trial participation rates did not differ between treatments (55.0%, 95% CI: 48.9%-60.9%) and CT trials (55.3%, 95% CI: 38.9%-71.1%, p = .98); however, participation rates were significantly higher at academic centers (58.4%, 95% CI: 52.2%-64.5%) versus community centers (45.0%, 95% CI: 34.5%-55.7%, p = .04). In common studies, Black patients agreed to participate at similar rates (58.4%, 95% CI: 46.8%-72.0%) compared to White patients (55.1%, 95% CI: 39.1%-66.5%, p = .88). Results were also similar comparing White versus Hispanic or Asian patients. The main reasons for non-participation were treatment choice or lack of interest. Conclusions: More than half of all cancer patients who are offered CTs do participate; rates were consistent between major race/ethnicity groups. This finding upends several conventional beliefs about cancer clinical trial participation, including that Black patients are less likely to agree to participate and that patient decision-making is the primary barrier to participation. Future research should focus more on modifiable systemic structural and clinical barriers, such as improving access to existing trials and broadening trial eligibility. Research Sponsor: The Hope Foundation for Cancer Research.

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Eligibility of real-world patients with metastatic lung cancer for clinical trial participation: A population-based analysis. First Author: Atul Batra, Tom Baker Cancer Center, Calgary, AB, Canada

Background: Due to highly selective enrollment in clinical trials, the generalizability of results may be limited. This study aimed to identify the proportion of real-world patients with metastatic lung cancer (MLC) eligible to participate in CTs. Methods: We identified patients diagnosed with MLC in a large Canadian province from 2004 to 2017. Ineligibility to participate in a clinical trial was defined by common exclusion criteria: age > 75 years, anemia, comorbid conditions (heart disease, uncontrolled diabetes, kidney disease, or liver disease) and history of a prior malignancy or immunosuppression. Logistic regression models were used to describe the likelihood of receiving systemic therapy and Cox regression models were constructed to determine the association of trial ineligibility with overall survival (OS). Results: A total of 13,996 patients were included; the median age was 70 years and 46.9% were women. Of these, 8,615 (66.1%) were trial-eligible. The main reasons for ineligibility were age > 75 years (11.5%), abnormal renal function (8.3%) and prior immunosuppression (3.2%). Further, 32.3% of patients were ineligible by multiple exclusion criteria. In the real-world, 40.6% and 21.8% of trial-eligible and ineligible patients received systemic therapy (P < .001), respectively. After adjusting for age and sex, trial-ineligible patients had lower odds of receiving systemic therapy (odds ratio, .84; 95% confidence interval (CI), .76-.92; P < .001). At a median follow-up of 66.2 months, the median OS of trial-eligible patients was 5.1 months as compared to 2.9 months in those deemed ineligible (P < .001). Receipt of systemic therapy was associated with longer OS in both trial-eligible (10.5 vs 2.7 months, P < .001) and ineligible (9.3 vs 21.3 months, P < .001) patients. In a Cox regression model that adjusted for age, sex and systemic therapy, ineligibility was predictive of worse OS. Conclusions: More than half of patients with MLC are ineligible to participate in clinical trials. Real-world use of systemic therapy was generally low, but its use was associated with improvement in OS even among individuals considered trial-ineligible. Clinical trials should broaden their eligibility criteria to better represent the phenotype of real-world patients so that findings are more generalizable. Research Sponsor: None.

Poster Session

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Do eligibility criteria restrict access to clinical trials? First Author: Nessa Stefanaki, Roswell Park Comprehensive Cancer Center, Buffalo, NY

Background: Stringent eligibility criteria may be a barrier to oncology clinical trial enrollment. We examined patients meeting basic trial eligibility criteria defined in a clinical pathway where the trial was not selected, and then performed a thorough review of full trial eligibility. Methods: Locally available trials are embedded into a patient’s tool, with the participation of care by medical oncologists at a tertiary cancer center. The physician can choose to have the patient fully screened for the recommended trial or bypass it. Patients where the physician bypassed the trial for eleven Phase 2 and 3 solid tumor trials from April 2008 to December 2019 were reviewed for trial eligibility. Baseline trials and adoptive cellular therapy trials were excluded. Trials selected for the audit were presented for more than 20 patients and were bypassed in 80% or more cases. For each trial a random set of 20% of cases were reviewed. Results: Among the 184 cases reviewed, 149 (81%) were trial ineligible based upon one or more criteria. The most common reasons for patients’ ineligibility were the wrong biomarker profile, prior drug treatment, and health conditions including comorbidities, autoimmune diseases, other cancers and poor performance status. Conclusions: The majority of patients meeting basic eligibility in a clinical pathways system did not meet strict eligibility criteria. This suggests the trials may not be reflective of the needs of the cancer population being treated and may limit the applicability of trial results to the general cancer population. Use of the pathway program to define eligibility is limited by the narrow and nuanced eligibility criteria that cannot be programmed into the pathways system. Clinical trials eligibility criteria and pathway tools need to adapt to the patient population to help advance cancer research. Research Sponsor: None.

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Role of oncology-advanced practitioners to enhance clinical research. First Author: Christa Marie Braun-Inglis, University of Hawaii Cancer Center, Honolulu, HI

Background: Oncology Advanced Practitioners (APs), including Nurse Practitioners, Physician Assistants, Clinical Nurse Specialists, and Pharmacists are highly trained health care providers that contribute significantly to quality cancer care. Given low clinical trial enrollment among adult oncology patients, understanding current research responsibilities of APs could lead to identification of opportunities to leverage this workforce to enhance accrual and conduct of clinical trials. Methods: A 65-item validated survey addressing attitudes, beliefs and responsibilities of oncology APs participating in clinical research was distributed from January 22 through March 6, 2020. Outreach via the Association of Community Cancer Centers (ACCC) and Harborside was utilized to reach a sample set of 14,601 oncology APs’ emails. The survey was administered and data were analyzed using Survey Monkey. Results: 408 U.S. oncology APs completed the survey. Respondents were primarily white (83%), female (92%) and nurse practitioners (71%). Thirty-five percent practiced in an academic setting and 62% practiced in a community setting. Nearly all respondents believed that clinical trials are important to improve oncology care standards and more than 90% reported that clinical trials are available at their practice. Nearly 80% reported that they are comfortable discussing treatment options with patients, discussing clinical trials in general, and know where to find clinical trials. Furthermore, 80% participate in the care of patients enrolled on clinical trials. Only 60% however, are comfortable discussing trials available at their practice and only 38% routinely explore whether a clinical trial is available for their patients. While 70% of APs approach eligible patients about clinical trials at their practice, only 20% reported doing so “a great deal” or “a lot.” Ninety percent of APs reported that they should play a role in clinical research and 75% would like to be more involved in the clinical trial process. Barriers to greater involvement in clinical trials include lack of time, inadequate awareness of clinical trial specifics, and lack of representation on institutional committees. Conclusions: Most oncology APs are engaged and interested in clinical trials and believe that research is important to improve cancer care. However, they are not being utilized to their full scope. Multidisciplinary team integration, trials-related education, and policy change is needed to allow this group of skilled professionals to realize their full potential within cancer clinical trials. Research Sponsor: None.
Factors associated with clinical trial participation for patients with prostate cancer. First Author: Brian Shinder, Section of Urologic Oncology, Rutgers Cancer Institute of New Jersey and Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ

Background: Clinical trials are critical for the development of new treatment paradigms for Prostate Cancer (PCa). The primary aim of this study was to characterize the factors associated with clinical trial participation for patients with PCa. The secondary objective was to examine survival outcomes in the clinical trial and control cohorts. Methods: The National Cancer Database (NCDB) was queried for patients with PCa who were coded as having enrolled in a clinical trial. Trial patients were matched in a 1:8 ratio to controls based on clinical stage. Sociodemographic variables were compared between the two groups and univariate and multivariate logistic regression models evaluated factors associated with clinical trial participation. Kaplan-Meier product limit estimate was used to compare overall survival (OS) between the two groups.

Results: From 2004-2015, 495 patients enrolled in clinical trials were included for analysis. The mean age of trial patients was 63.2 compared to 66.4 years in the control cohort (HR 95%CI 1.15-2.19, p = 0.005) or came from a zip code where greater than 93% of population were White (OR 2.72; 95%CI 1.86-3.98, p < 0.0001) or traveled between 50-250 miles (OR 1.59; 95%CI 1.22-2.08, p = 0.001). There was no association between race and insurance status on clinical trial participation. Median OS was not significantly different among clinical trial participants than the control cohort (120.9 months vs. not reached, p = 0.928).

Conclusions: In this contemporary analysis of PCa patients from a national hospital registry database, we found that certain patient sociodemographic factors remain associated with clinical trial participation, though clinical trial participation do not seem to experience a difference in OS. Further work, both qualitative and quantitative, is necessary to identify clinical and non-clinical barriers to seeking participation in order to improve the validity of PCa trials. Research Sponsor: U.S. National Institutes of Health.

Access to palliative care services for limited English proficient patients with advanced NSCLC. First Author: Bonnie Leung, BC Cancer, Vancouver, BC, Canada

Background: More than a quarter of people living in British Columbia, Canada speak languages other than English in their homes. Immigrants often encounter communication challenges with their health care providers (HCPs), who have poor health literacy, and have a limited understanding on navigating the health care system. NSCLC patients with limited English proficiency (LEP) may receive less palliative care services despite high symptom burden and significant needs due to these factors. The study goals were to observe the difference in access to community palliative home care (PCHC) and rate of completion of a Do Not Resuscitate (DNR) form between LEP and English proficient (EP) patients. Methods: All patients with advanced NSCLC referred to BC Cancer–Vancouver Centre in 2016 and received medical care were included (N=176). Patients seen with a medical interpreter were considered to be LEP. Demographics and clinical information were collected retrospectively. UVA using X² test and Fisher’s exact test were used to compare EP and LEP patients. Mann-Whitney test was used to compare the median time from PCHC referral and signed DNR to death between EP and LEP patients. Results: Language of communication: English 65%, Cantonese 22%, Mandarin 6%, Korean 1%, Tagalog 1%, and other 5%. Baseline characteristics: median age 69 EP vs 76 LEP, female 44% EP vs 65% LEP, non-squamous 68% EP vs 72% LEP and squamous 14% EP vs 6% LEP. There was no significant difference in the rate of PCHC referral (87% EP vs 80% LEP, p=0.342) and signed DNR form (92% EP vs 89% LEP, p=0.549). The median time from PCHC referral to death was 10 weeks EP vs 15 weeks LEP (p=0.039). The median time from signed DNR to death was 5 weeks EP vs 6 weeks LEP (p=0.806). There was no statistically significant difference in location of death between the two groups: acute care 20% EP vs 19% LEP, hospice 37% EP vs 13% LEP, hospice 36% EP vs 39% LEP, and tertiary palliative care unit 17% EP vs 24% LEP (p=0.253). Conclusions: EP and LEP patients with NSCLC had similar rates of PCHC referral and signed DNR, and their palliative care experiences were similar. Medical interpreters at the time of oncology visits help message delivery between LEP patients and HCPs. LEP patients had earlier referrals to PCHC prior to death which may reflect an enhanced awareness and effort by HCPs to have earlier conversations with patients who may have language and cultural barriers to care. Good communication with patients and their family’s understanding of the goals and scope of palliative care services and allow HCPs to better understand the patients’ wishes. Research Sponsor: None.
100  Poster Session
Assessing disparities in engagement in a post-discharge virtual visit follow-up program. First Author: Abdullah Abdul Kareem, Thomas Jefferson University Hospital, Philadelphia, PA

**Background:** Transitions of care are a frequent focus of quality improvement initiatives. In attempt to improve upon the transitions of care for oncology patients, our institution implemented a post discharge virtual visit follow-up program. These patient onboarding visits included socio-economic status and urban engagement in technology based interventions. Herein, we report the impact of socio-economic status based on area deprivation index (ADI) on engagement with the program. **Methods:** All patients admitted to the elective chemotherapy service were included. Retrospective analysis of characteristics of each participant was conducted. Data included eligibility (access to the internet, appropriate device, English language proficiency, ability to set up video visit and a patient portal account) for video visit, interest in participating, completion of the visit and any interventions performed during the visit. In addition, ADI was calculated for each individual. Patients were classified into quartiles based on ADI (quartiles increased with ADI). Chi squared testing was performed to assess whether socioeconomic status affected enrollment in video visits. Simple descriptive analysis was also performed. **Results:** One hundred seven unique patients were included for review. Of these, 33 (31%), 100 (97%), 16 (15%) and 19 (18%) were in quartile(Q) 1, 2, 3 and 4 respectively. Patient engagement during video visits was 77 (72%), 90 (87%), 83 (80%) and 93 (91%) for Q1, Q2, Q3 and Q4 respectively. Patients with Q1 had the lowest engagement (P = 0.01). A total of 46 patients (85%) were eligible for video visits; of these, 46 patients declined. Of the 46 patients that declined 9 (19%), 20 (43%), 8 (17%), and 9 (19%) were in Q1, Q2, Q3 and Q4 respectively. Fifteen patients cited technology issues as reasons for not participating in telehealth visits -10 (67%) from Q1 and Q2 and 5 (33%) from Q3 and Q4. The vast majority cited lack of interest as reason for declining. **Conclusions:** ADI as a measure of socioeconomic status did not significantly affect eligibility for or enrollment in video visits. This may be explained by our successful access to video services in a large urban setting. Current research is currently being conducted to understand patient barriers to engagement in virtual visits. Research Sponsor: None.

101  Poster Session
Characterizing participants in the North Carolina Breast and Cervical Cancer Control Program (NC BCCCP): A review of 90,000 women. First Author: Sarah D. Tait, Duke University, Durham, NC

**Background:** Overall breast cancer mortality in the US has declined since 1990, but racial/ethnic disparities have worsened. Since 1992, NC BCCCP has provided free/low cost breast cancer screening to underserved women as part of a national effort by the Centers for Disease Control and Prevention (CDC) to mitigate these disparities. We sought to characterize and evaluate benchmarks for this previously unstudied, state-wide cohort. **Methods:** We identified women 18y who underwent their first breast cancer screening via NC BCCCP from 2009-2018. Univariate analysis was used to compare differences in timeline of care and rates of breast pathology (i.e., cancer or atypia) by race/ethnicity and age. Logistic and negative binomial regression were used to identify factors associated with cancer diagnosis and time from enrollment to diagnosis (TDD) and treatment (TTT), respectively. **Results:** 88,893 women with complete records were identified (median age 50y, IQR 44-56): 45.5% were Non-Hispanic White, 30.9% NH black, 19.5% Hispanic, 1.7% American Indian (AI), and 1.1% Asian. Overall participation peaked in 2012 but steadily increased among Hispanic women over time (p < 0.001). Breast pathology was diagnosed in 2,026 (2.3%) women, with rates ranging from 1% in Hispanic women to 2.7% in NH whites. After adjustment, Hispanic women were least likely (vs NH white women; OR 0.40; 95% CI 0.34-0.47) to be diagnosed with breast cancer. Median TTD was 94 and TTT was 33d, both within the CDC's 60d standard. In univariate analyses, women < 50 had shorter TTD (median IQR 20 vs 36d) and TTT (median 30d vs 35d) vs women ≥50 (both p < 0.001), and there were no significant differences by race/ethnicity or between women with atypia vs cancer. In multivariate models, however, older age and NH black race were associated with longer TTD and TTT. **Conclusions:** NC BCCCP meets national quality benchmarks for TTD and TTT. These data also highlight broader opportunities to achieve racial/ethnic parity and improve equity for breast cancer prevention. Research Sponsor: U.S. National Institutes of Health.

102  Poster Session
The effects of COVID-19 on new oral oncolytic treatments. First Author: Rachel L. Mitchell, Tennessee Oncology, Nashville, TN

**Background:** Dependable and timely dispensing and delivery of oral oncolytic to patients with a new indication for therapy is a central part of modern cancer care. The COVID-19 pandemic has presented numerous impediments and challenges to patients receiving oral therapy from many specialty pharmacies in a timely due to remote pharmacy staffing and drug shipment. Tennessee Oncology has an integrated URAC and ACHC accredited Specialty Pharmacy to ensure the seamless care for our patients prescribed oral oncolytics. We investigated the effect of COVID-19 on the number of patients initiating care with an oral oncolytic and the time to fill during the pandemic. **Methods:** We analyzed the number of overall new patients to the practice and initiating care with an oral oncolytic and the time to fill during the pandemic. Time to fill was defined as the time of entry of a regimen in the electronic medical record that was recorded as a one-day turnaround time. **Results:** Of 7% in practice new-patient volume was associated with a 13% increase in treatment numbers. Time to fill remained consistent in March and April 2020 at 1.84 days vs. 1.78 for February 2020. Year to year April and May 2020 data showed an increase (1.90%) in treatments.

103  Poster Session
Maintaining treatment volumes during the COVID-19 pandemic. First Author: Rachel L. Mitchell, Tennessee Oncology, Nashville, TN

**Background:** Uninterrupted care is essential for optimal outcomes in cancer care. The COVID-19 pandemic presented numerous challenges and opportunities for the large volume of new patients to our practice while maintaining a safe environment. **Methods:** A practice-wide effort to continue therapy in cancer patients continued active treatment began in March 2020 in support of the COVID-19 pandemic. Our experience to date demonstrates that our strategy of maintaining stable treatment volumes while providing safe care to patients was successful. We had no known diagnosis COVID-19 cases from potential exposures in our clinics. Decreases in treatment reflected less critical therapies. There did seem to be a delay for chemotherapy/immunotherapy that seemed to resolve as the peak passed for this region. Offloading of less critical treatments can result in continued treatment of cancer patients during a pandemic. Research Sponsor: None.

Background: In 2016, the Association of Community Cancer Centers (ACCC) launched a 3-year initiative to design, test, and refine an OCCM for Medicaid patients with lung cancer. The aim was to help lung cancer programs identify and reduce the barriers experienced by Medicaid patients by strengthening lung cancer care delivery systems. Methods: Phase I included Model development; Phases II and III included selection of 7 community-based cancer programs as testing sites to implement quality improvement projects, utilizing qualitative and quantitative assessments. Beta testing demonstrated the Model's ability to offer practical guidance on improving care coordination to achievable target levels in high-impact areas such as patient access to care, prospective planning, and tobacco cessation. Opportunities were identified to improve care coordination beyond lung cancer to other tumor sites. Refinements for clarity of intent, ease of use, specificity, and uniformity across assessment areas were implemented, based on feedback from testing sites. Members of the Technical Expert Panel and the Advisory Committee, ACCC staff, and consultants reviewed the Model using consensus decision-making. Results: The final OCCM is composed of 12 inter-related assessment areas: patient entry into lung cancer program; multidisciplinary treatment planning; clinical trials; supportive care; survivorship care; financial, transport, and resource needs; navigation and treatment team integration; physician engagement; electronic health records and patient access to information; and quality measurement and improvement. Each assessment area has 5 levels and corresponding metrics—level 1 represents the basic level of care, and level 5 represents optimal care coordination, which may be attainable for some cancer programs and aspirational for others. Progress implies cumulative and sustained fulfillment of lower level criteria. The OCCM can be deployed by cancer programs, regardless of size, setting, or resource levels, to promote greater use. The model is planned through an online benchmarking tool, blogs, a brochure, podcasts, and other resources. Conclusions: The OCCM can be utilized by cancer programs for objective self-assessments of care delivery capabilities across 12 high-impact areas. Dissemination can advance multidisciplinary care delivery and improve clinical outcomes for patients nationwide, regardless of cancer type. Research Sponsor: Bristol Myers Squibb Foundation.

Disparities in utilization of oral antinecancer agents and related costs in elderly patients with metastatic renal cell carcinoma in the United States. First Author: Lauren E. Wilson, Duke University School of Medicine, Durham, NC

Background: Although survival among patients with metastatic renal cell carcinoma (mRCC) has improved with the introduction of targeted therapies, OAAs, and other resources. Conclusions: The OCCM can be utilized by cancer programs for objective self-assessments of care delivery capabilities across 12 high-impact areas. Dissemination can advance multidisciplinary care delivery and improve clinical outcomes for patients nationwide, regardless of cancer type. Research Sponsor: Bristol Myers Squibb Foundation.

Resource utilization rates among English versus limited English proficient patients (pts) by patient-report of low health literacy (LHL). First Author: Nadine Jackson McCleary, Dana-Farber Cancer Institute, Boston, MA

Background: About 30 million people in the US report Limited-English Proficiency (LEP), LEP cancer pts are less likely to understand their medical condition(s) and are at increased risk of LHL, emergency department (ED) visits or hospitalizations. Methods: Dana-Farber Cancer Institute’s New Patient Questionnaire (NPQ) documents clinical and social determinants of health, including LHL. Pts reported LHL if they responded “a little bit,” “somewhat” or “not at all” to 1 of 2 questions: 1) “How confident are you in filling out medical forms?” and 2) “How confident are you in understanding medical statistics?” Pts reporting LHL were compared to those not reporting LHL. Results were stratified by language and English at registration. ED visits/hospitalizations were determined from Partners Healthcare System records. Statistically significant relationships between LEP, LHL and ED visits/hospitalizations and pt demographics (age, sex, race/ethnicity, zip code) and clinical (disease center, treatment intent) characteristics were determined with χ² tests. Results: From 5/30/15 – 4/30/20, 3750 of 98200 eligible pts responded to NPQ; LEP rate was 41% (61% African American, 28% White 1972 (35.4) 3603 (64.6) 0.007 Prior cancer Yes 94 (75.8) 30 (24.2) 0.006

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Anxiety due to COVID-19 and impact on patients receiving chemotherapy in an inner-city minority population. First Author: Muhammad Junaid Tariq, Department of Internal Medicine, John H. Stroger Jr. Hospital of Cook County, Chicago, IL

Background: Cook County Health (CCCH) is one of the largest public safety net hospitals in the United States. COVID-19 pandemic significantly affected patient care. Although hospital improved services to patients safety protocols, the number of new patients coming to our infusion center was offered an anonymous written questionnaire. The survey was given for 10 calendar days in June 2020 after Chicago moved into Phase-3 of re-opening that indicated significant control of COVID-19. The survey was offered in English, Spanish and Polish. It also included the GAD scale for anxiety assessment. Statistics were done using the t-test and z-test. Results: A total of 107 patients completed the survey. About 55% were women with 67% patients over 50 years old. Of the 107 people that specified their race, 44% were black and 42% Hispanic, 9% whites, and 5% others. Overall 68% had high school or less level of education with Hispanics having significantly lower education than blacks. About 30% had testing for COVID-19 with 81% being tested negative. Treatment interruption occurred in 39% patients. Despite 75% finding our infusion center extremely or very safe for treatments 28% still felt moderately or severely anxious on the GAD scale. Blacks had similar levels of anxiety compared to Hispanics in March 2020 but no significant change over the months compared to Hispanics who had a significant reduction in anxiety over time. Blacks also had significantly higher rates of moderate to severe anxiety on the GAD scale (33%), while no Hispanic had severe anxiety and 18% had moderate anxiety. Despite a higher level of anxiety, blacks were less likely to have treatment interruptions compared to Hispanics (Table). Conclusions: Despite low levels of anxiety, Hispanics were more likely to have treatment interruptions during the COVID pandemic compared to blacks who had a higher level of anxiety but lower levels of anxiety compared to Hispanics (Table). The cause of this may be the level of education and awareness between the groups. However, overall there is still a significant amount of anxiety in the inner-city minority population regarding COVID-19. Research Sponsor: None.

Effect of time to treatment and comprehensive care at commission on cancer-accrued practices on survival in rural patients with colorectal cancer. First Author: Suneel Deepak Kamath, Cleveland Clinic Taussig Cancer Institute, Cleveland, OH

Background: Rural cancer care in the United States has unique challenges from variable access to care. This study examined differences in time to first treatment (TTT), a sur- rogate for access, and predictors of overall survival (OS) between rural and non-rural colorectal cancer (CRC) patients. Methods: Patients with stage III CRC from 2004-2012 in the National Cancer Database of Commission on Cancer (CoC)-accredited facilities were included and categorized into rural and non-rural groups. Differences in demographic, disease characteristics, socioeconomic (SE) factors and TTT (< 4 weeks, 4-8 weeks and > 8 weeks) between rural and non-rural patients were assessed by Chi-square test. The effect of demographic, SE factors, TTT on OS were assessed using Cox models. Results: The study population comprised 605,913, 11,649 (2%) of whom were rural. Cancer care was non-rural patients, rural patients were more likely to be age 65+, more likely to be African American, receive care at non-academic centers, have government insurance, have lower income and less education (p < 0.0001 for all). Significant demographic and SE differences are shown in Table. Rural patients had similar mean TTT compared to non-rural patients (2.76 vs. 2.84 weeks, p = 0.351). Slightly more rural patients had TTT > 4 weeks (7% vs. 5%, p < 0.0001). Shorter TTT (both <4 weeks vs. 4 weeks vs >8 weeks) was associated with improved OS (HR: 0.87, 95% CI: 0.85-0.89, p < 0.0001 and HR: 0.74, 95% CI: 0.73-0.76, p < 0.0001, respectively). After adjusting for demographic, disease and SE factors, rural status was associated with modestly better OS compared to non-rural status (HR: 0.96, 95% CI: 0.92-0.99, p = 0.006). Conclusions: Despite several adverse demographic and socioeconomic factors, rural CRC patients had modestly better OS compared to non-rural patients. Rural and non-rural CRC patients had similar TTT in this cohort. These data suggest the comprehensive cancer care delivered by CoC-accredited practices is associated with rapid TTT and improved OS in rural CRC patients, whether our data apply to non-CoC-accredited facilities in rural United States. Research Sponsor: None.

Effect of rurality and neighborhood disadvantage on clinical trial interest and decision-making style in patients with cancer living in the Deep South. First Author: Nicole Caston, University of Alabama at Birmingham, Birmingham, AL

Background: Patients living in rural or disadvantaged areas are historically underrepresented in clinical trials. This study sought to understand associations between neighborhood characteristics and both interest in clinical trial participation and decision-making style preference. Methods: This cross-sectional study collected data on trial interest and decision-making from patients with cancer treated at the University of Alabama at Birmingham from January 2017 to May 2019. Rural-Urban Commuting Area Codes (RUCA) scores were used to determine rurality of patient residence. Area Deprivation Index (ADI) values (range 0-100) were used to identify patients living in the most disadvantaged (top 15%) census block groups. The Control Preferences Scale captured participation and decision-making style preference. Statistical analysis included categorical data comparing rural vs. non-rural patients. Results: A total of 108 patients with cancer, mean age was 67 (SD 11), 68% were female, and 74% white. Gynecologic cancer (32%) was the most prevalent diagnosis, followed by hematologic (20%) and breast (15%) cancer. Of this sample, 16% of patients were living in a rural setting and 18% lived in a disadvantaged neighborhood. Interest in clinical trial participation was no different for patients living in rural vs. urban (RR 0.93, 95% CI 0.73-1.17) or disadvantaged vs. non-disadvantaged neighborhoods (RR 0.88, 95% CI 0.69-1.13). Patients living in rural vs. urban settings trended toward increased likelihood of preferring physician- to-patient-driven decision-making (RR 1.67, 95% CI 0.95-2.94). Patients living in disadvantaged vs. non-disadvantaged neighborhoods trended toward increased likelihood of preferring physician- to-patient-driven decision-making (RR 0.95, 95% CI 0.82-1.15). Conclusions: Though clinical trial participation interest was similar, patients with cancer living in rural vs. urban settings trended toward increased likelihood of preferring physician- to-patient-driven decision-making. Opportunities exist for providers to engage historically underrepresented patients for trial participation. Research Sponsor: Genentech.

Psycosocial impacts of COVID-19 on oncology workflows: Metro versus regional Australia. First Author: Elizabeth Stephanie Ahern, Royal Brisbane and Women’s Hospital, Herston, QLD, Australia

Background: The COVID-19 pandemic poses psychosocial challenges to the oncology workforce. We postulate that these impacts may affect the entire patient-facing workforce. Whether distress is different in varying settings (metro vs regional hospitals) is unknown. Methods: Cancer Care staff were invited to participate via an all-staff email for a weekly online survey administered at two hospital sites, Royal Brisbane and Women’s Hospital (RBWH) (metro) and Sunshine Coast Hospital and Health System (SCHHS) (regional). Surveys included Likert-scale items exploring perceptions of departmental preparation, COVID-19 related query burden and staff well-being, and distress thermometer derived from NCCN. Mean and 95% confidence interval were calculated, with non-parametric t-tests adjusted for multiple comparisons (Holm-Sidak); significance was deemed p < 0.05. Results: 117 participants at RBWH and 59 at SCHHS consented. The survey finished week 10 in April 2020. Data is presented for the initial 6 weeks (COVID-19 preparation phase). Highest survey response was noted in week 1 (87%) and lowest at week 6 (36%). 65% unique responses were from RBWH. 60% participants worked in an outpatient setting, while 9% had inpatient care role. The remainder worked in either community-based or mixed settings. Significant heterogeneity was detected between sites (RBWH vs SCHHS) for some occupational roles: RBWH had more representation of administrative (19% vs 8%, p < 0.001) and ancillary staff (2% vs 0%, p < 0.001). Most EBMT had more allied health (28% vs 17%, p < 0.001). Nursing and medical staff proportions at SCHHS and RBWH were similar (50% vs 45%, and 14% vs 18% respectively). Higher levels of distress were noted early; mean (95% CI) distress thermometer result (0-10) during week 1 was 4.7 (4.3-5.2) at RBWH and 4.9 (4.2-5.5) at SCHHS. Mean distress scores significantly reduced over time: Correlative scores during week 4 were 3.2 (2.3-4.1) at RBWH and 2.5 (1.6-3.4) at SCHHS. Distress levels comparing RBWH with SCHHS were similar (p = 0.22-0.76). No significant difference was noted in staff perception of self- support comparing RBWH with SCHHS, and over 80% responders felt well-supported at work most, or all of the time. Concurrently, participants perceived that the Cancer Care department of their site was either “well” or “very well” prepared for COVID-19 over 85% of the time, with no difference between sites. Conclusions: High perceptions of support and preparedness were evident, with no regional difference. Distress scores reduced over time during the COVID-19 preparation phase, in the context of low COVID-19 rates. Research Sponsor: None.
Temporal changes in rural-urban treatment patterns for early-stage non-small cell lung cancer in North Carolina, 2006 to 2015. First Author: Joshua Herb, Cecil G. Sheps Center for Health Services Research, Chapel Hill, NC

Background: Rural-urban disparities in the receipt of surgery for early-stage non-small cell lung cancer (NSCLC) have been noted, but few studies have considered access to other available treatments (i.e. radiation) or examined changes over time. The primary objective was to evaluate geographic disparities in lung cancer treatment modalities in North Carolina and to characterize how practice patterns are changing over time. We hypothesized that rural patients would be less likely to undergo treatment compared to urban patients with widening disparities over time.

Methods: Data on patients with Stage I or II NSCLC from 2006-2015 were included. Multivariable logistic regression was used to assess the association of rural/urban status, and time period with surgery and any treatment (surgery or radiation) while controlling for clinical, demographic, and area-level factors. Results: Among 7532 patients, 4144 (56%) patients underwent surgery, 1991 (27%) received radiation, and 1397 (19%) had no therapy. Rural patients were as likely to undergo surgery over time, this may have downstream effects on care, while radiation use is increasing everywhere. As rural patients are less likely to be insured, discharges related to lung cancer may have increased in rural patients.

Conclusion: Rural hospital closures, regionalization and workforce changes over time. Rural-disparities over time.

Poster Session

Poster Session

Differences in rural versus urban cancer patients’ perception of care coordination. First Author: Izumi Okado, University of Hawaii Cancer Center, Honolulu, HI

Background: Although advances in anticancer treatment have improved survival of patients with cancer overall, cancer mortality rates remain disproportionately high in rural areas. Disparities in rural cancer health outcomes are partially attributed to challenges with care coordination in rural areas. However, little is known about rural-urban differences in patients’ perception of cancer care coordination. In this exploratory study, we compared rural and urban cancer patients’ perception of care coordination (CC) using a Care Coordination Instrument (CCI), a validated self-report measure. Methods: We conducted a secondary analysis of cross-sectional survey data from two community-based cancer care delivery studies from 2018 and 2019 focused on cancer patients’ perception of CC. Patients receiving active therapy for any cancer completed a 29-item CCI. The CCI assesses overall perceptions of CC (Total) and across 3 domains: Communication, Navigation, and Operational. The rural patient cohort was derived from the American Cancer Society Hope Lodge Hawaii, which provides lodging for patients from neighbor islands (rural) receiving cancer care on Oahu (urban). The urban comparison group included patients residing on Oahu. Multivariable regression analyses were conducted to compare rural and urban patients’ perception of CC with adjustment for age, gender, and cancer type. Results: Data from 243 patients were analyzed; 23 (9.5%) were rural and 220 (90.5%) were urban. The rural and urban groups were similar with respect to patient demographics (age, gender) and clinical status. Rural patients reported significantly lower overall mean CCI scores than urban patients (54.7 vs 61.6; p = .02). Rural-urban differences in patients’ perception of CC were found for Communication (29.5 vs 35.1; p < .004) and Operational (19.7 vs 22.0; p = .02) domains. There were no rural-urban differences for Navigation (p = .36). Conclusions: Our results demonstrate that rural patients had significantly poorer perception of care coordination overall than urban patients. Specifically, the observed rural vs urban differences in patients’ perception of care coordination were noted in communication and operational challenges. Required coordination with a patient navigator to facilitate access to Hope Lodge may have confounded analysis in the Navigation domain. These findings highlight the need for interventions to address communication and operational CC challenges for rural patients in order to improve the quality of cancer care and reduce health disparities for rural cancer patients. Research Sponsor: University of Hawaii Cancer Center.

Poster Session

Incorporating of telementoring (Project ECHO) into practice: efficacy of Point Of Service Testing-Breast Cancer (ePOST-BC). First Author: Lauren Elizabeth Nye, University of Kansas Medical Center, Kansas City, KS

Background: An estimated 327,630 breast cancers (BC) will be diagnosed in the US in 2020, and as high as 14% (45,868) may be related to a hereditary cancer syndrome. Testing eligible patients in clinical practice is hindered by multiple barriers including cost, access, lack of organized referral pathways, provider knowledge, as well as health disparities. To address some of these barriers, our team provided a telementoring and process improvement intervention for BC care providers serving BC patients in Kansas and Western Missouri using Project ECHO. We aimed to improve the process surrounding access to genetic education and testing for patients with BC.

Methods: Rural and community cancer care teams were invited by the Masonic Cancer Alliance, the outreach arm of the University of Kansas Cancer Center, to participate in ePOST-BC. Five 1-hour Project ECHO sessions (community building, didactic, and case-based learning) covered topics included: 1) essential elements of HCS and genetic testing, 2) guidelines for genetic testing in BC 3) enhanced understanding of risk, screening, and weighing of the pros and cons of genetic testing.

Results: Rural and community oncology providers were interested and willing to engage in telementoring to improve implementation of point of service genetic education and testing. This improves provider knowledge, readiness, and implementation of testing. Demonstrating a change in testing completion for eligible patients is difficult in a community setting without intensive data collection. Next steps include the incorporation of technology and standardized tools into practice to address provider and care team burden. Research Sponsor: American Cancer Society.

Poster Session

Is there any health and geographical disparity in Indigenous and non-Indigenous women of Western Australia (WA)? A retrospective review with respect to de novo metastasis. First Author: Azim Khan, Fiona Stanley Hospital, Perth, WA, Australia

Background: Indigenous women with breast cancer have substantially higher mortality than non-Indigenous women. They are more likely to live in more remote communities with potential delays to presentation, investigation and diagnosis as well as slower access to cancer treatment facilities, potentially impacting survival. Here we explore by evaluating the diagnosis of de novo metastasis and any association of remoteness, highlighting the geographic and possibly early access to treatment. Methods: A cohort of patients was retrospectively selected comprising age- and remoteness matched Indigenous and non-Indigenous women in a 1:1 ratio from the Western Australian Cancer Registry. Further data were collected from medical records and results systems. Remoteness was defined by the ARIA system. In addition, the distance from the nearest treatment center was calculated. The survival analysis was performed by Indigenous status and remoteness. Results: The study cohort comprised 250 Indigenous and 261 non-Indigenous women. Of the total, 7.6% (19/250) and 7.7% (20/261) were identified to have de novo metastasis. At 10 years of follow up, most de novo metastatic patients in both groups were from remote communities, distributed as 10.1, 9.1, 7.8, 8.7 and 5.0 % in metropolitan, inner regional, outer regional, remote and very remote areas respectively. In Indigenous group with de novo metastasis the average distance of patient from treatment center was 172km for vs 1018 km in non-Indigenous patient with a p-value of 0.03. In the non-metastasis cohort, Indigenous patient has 1065 km v 1241 km in non-Indigenous group. Considering outcomes for those developing metastatic disease, median survivals after metastasis diagnosis were shorter for Indigenous patients, 21 v 33 months, p = 0.03. Conclusions: Indigenous women in WA with metastatic breast cancer have inferior survival outcomes from diagnosis of metastases relative to non-Indigenous peers. Most de novo metastatic patients were from remote location in both cohorts but no relation between remoteness and de novo metastasis was identified to exist. Future work is required to understand these findings and to better elucidate if any geographical, health care disparities and improve on treatment related outcomes. It is suggested to derive targeted policies to improve survival outcome of all Indigenous cancer patients, particularly those residing in remote areas. Research Sponsor: None.
Background: Multidisciplinary care from high-volume centers (HVCs) improves outcomes for patients with pancreatic cancer (PC). However, rural PC patients lack access to these high-volume PC specialists, an important need for them to travel to distant HVCs for specialized treatment. The barriers and challenges rural PC patients face when seeking care at distant HVCs is poorly understood. Methods: We conducted semi-structured interviews with PC specialists from 30 major centers across the US (n = 9) in a HVC (The Ohio State University) actively treating and co-managing rural PC patients with rural physicians. Using rigorous qualitative methods, two coders independently coded the interview transcripts to develop a thematic account of challenges rural PC patients encounter when receiving care at distant HVCs. Results: PC specialists commonly identified transportation as a major barrier they believed their rural PC patients experienced, and noted the distance these patients needed to travel and difficulties patients reported in navigating major cities to receive care at HVCs. Similarly, providers commented that rural PC patients and their families reported having difficulty finding affordable lodging near HVCs sometimes resulting in the need for frequent and inconvenient back-and-forth travel between the HVC and the patient’s home. One interviewee stressed the importance of health literacy and the need for providers to improve physician-patient communication as well as provide resources to help rural PC patients better understand their condition and recommended treatment plan. PC specialists also indicated that some rural PC patients had expressed discomfort about contacting physicians outside their immediate health-care settings and HVCs. Notably, these challenges may both impact the delivery of high-quality multidisciplinary care and cause additional stress for rural PC patients. Future studies should examine how interventions (e.g., patient navigators, support groups, educational resources) are meaningfully addressing barriers to multidisciplinary PC care for rural PC patients can be designed and implemented. Research Sponsor: None.

Abstract Withdrawn

Multidisciplinary care for rural pancreatic cancer patients: Providers’ perspectives about patients’ challenges navigating between rural health-care settings and high-volume centers. First Author: Natasha Kurien, The Ohio State University College of Medicine, Columbus, OH

The association of polypharmacy with functional status impairment, frailty, and health-related quality of life in older adults with gastrointestinal malignancy: Results from the Cancer and Aging Resilience Evaluation (CARE) registry. First Author: Darryl Alan Outlaw, UAB Hematology Oncology Fellowship, Birmingham, AL

Background: The majority of new cancer diagnoses occur in adults greater than 65 years of age. Polypharmacy is a common and potentially devastating problem amongst older adults; however, its prevalence and impact in older adults with gastrointestinal (GI) malignancy is poorly understood. Our objective was to examine the prevalence of polypharmacy and its association with functional status impairments, frailty, and health-related quality of life (HRQoL) in older adults with GI malignancy. Methods: The Cancer and Aging Resilience Evaluation (CARE) registry at the University of Alabama at Birmingham (UAB) is an ongoing prospective cohort study that uses a brief geriatric assessment (CARE survey) in older adults with cancer. We evaluated older adults diagnosed with GI malignancy prior to starting cancer therapy. Our primary outcomes of interest were functional status impairments, including dependence in activities of daily living (ADL) and instrumental activities of daily living (IADL), frailty (as defined by a frailty index derived using the principles of deficit accumulation), and HRQoL (assessed via PROMIS 10 global that includes physical and mental scores). Patients were dichotomized into those taking ≥9 vs. < 9 medications. Multivariable analyses examined associations between polypharmacy and the above-listed outcomes, adjusted for age, sex, race, cancer type, cancer stage, and comorbidities.

Results: Overall, 397 patients met eligibility criteria; mean age: 70.3 years; primary diagnoses: colorectal (33.6%), pancreatic (24.6%), hepatobiliary (16.2%), gastrointestinal (10.9%), other (14.6%). Patients reported taking a mean of 6.2 medications: 27.7% with 0-3 medications, 48.2% with 4-8 medications, and 24.1% with > 9 medications. Patients taking ≥9 medications were more likely to report limitations in ADL (adjusted odds ratio [aOR] 3.29, 95% CI 1.72-6.29) and IADL (aOR 2.86, 95% CI 1.59-5.14). Polypharmacy was also associated with frailty (aOR 3.06, 95% CI 1.73-5.41) and lower physical (aOR 3.09, 95% CI 1.70-5.69) and mental (aOR 1.73, 95% CI 1.13-2.69) HRQoL. Conclusions: Independent of comorbid conditions, polypharmacy was associated with functional status limitations, frailty, and reduced HRQoL in older adults with GI malignancy. Further study of specific medications and interventions is warranted in order to reduce the negative consequences of polypharmacy in this growing and vulnerable population. Research Sponsor: U.S. National Institutes of Health.

Equitable application of pancreatic cancer treatment guidelines to mitigate racial and insurance disparities at a comprehensive cancer center. First Author: Andrea M. Schiefelbein, Morgridge Institute for Research, Madison, WI

Background: Race and ethnicity-based treatment and survival disparities are documented for pancreatic cancer. Studies cite patient genetic, biological, and social factors and differences across treatment centers and geographical areas that may contribute to disparities. We investigated treatment and survival disparities for a cohort of 1,569 pancreatic cancer (PC) patients at the local level within a National Cancer Institute-designated comprehensive cancer center. Methods: Data from 1,569 PC patients aged over 18 diagnosed with adenocarcinoma, NOS or infiltrating duct carcinoma, NOS from 2004 to 2014 who received care at or all of their care at the University of Wisconsin Carbone Cancer Center were included in the study. Sequential models of adjusted Cox proportional hazard regression were performed to describe the association between race/ethnicity and overall survival. Model I included age, sex and race/ethnicity; model II added BMI, Charlson Comorbidity Index and stage; model III added rurality, treatment course and payer. Treatment course, defined as the receipt of chemoradiation, surgery with/post chemoradiation, or no treatment, rurality, and insurance status were factors of interest. Results: 38.6% of patients were diagnosed with metastatic disease. Overall survival was 11.6 months. Non-Hispanic black (NHB) patients experienced an 88% increased risk of death (95% CI: 23%-188%) and patients categorized as other race/ethnicity experienced a 32% (10%-60%) increased risk of death compared to NH white (NHW) patients in model II. After adjusting treatment course and insurance status, the hazard ratio for NHB patients decreased to 1.41 (1.01-1.95) and unknown/uninsured patients had an adjusted hazard ratio of 1.62 (1.71-4.02) compared to managed care patients. Incarcerated patients had a reduced hazard ratio of 1.28 (0.98-1.67) compared to managed care patients. Conclusions: To reduce disparities across race/ethnicity and insurance status, organizations should invest in financial support programs for patients in need and monitor treatment courses for people of color, underinsured or uninsured patients to verify access to treatment, equitable treatment, and adherence to treatment guidelines. Future studies should investigate the contribution of clinician and healthcare system bias to race and ethnicity-based cancer disparities. Research Sponsor: U.S. National Institutes of Health, University of Wisconsin Pancreatic Cancer Task Force.
Background: Targeted therapies are superior to chemotherapy in metastatic lung cancer with driver gene mutations. Delays in initiation of targeted therapies may result in faster symptom progression, decline in quality of life, and increased mortality. We examined factors associated with time to initiation of targeted therapy (TTT) in patients with metastatic lung cancer with selected driver mutations. Methods: In this retrospective cohort study, IBM MarketScan claims data was used to identify patients who had an initial diagnosis of metastatic lung cancer, defined as continuous insurance enrollment 12 months pre- to 6 months post-diagnosis, with tumor biomarker (i.e., EGFR, ALK, ROS1, BRAF V600E, NTRK)-directed targeted therapy performed within 6 months of the initial diagnosis, during the timeframe of 1/1/2013 to 12/31/2018. Trends in TTT were evaluated with Wilcoxon-Mann-Whitney Quantile regression, a robust model that analyzed factors on different outcome-related quantiles, was used to identify associations among TTT and covariates including age, sex, comorbidity, insurance type, and US region. Results: Among 8977 patients identified with an initial diagnosis of metastatic lung cancer, 710 (7.9%) received targeted therapies within the 6-month timeframe, and 1040 (12%) had tumor biomarker testing performed. The overall median TTT was 21 days (IQR = 36 days), Median TTT decreased from 25 days in 2013 to 18 days in 2018 (p = 0.03). Factors associated with longer TTT (median, 50% quantile) were increasing age (p = 0.04), cardiovascular disease (“CVD”, p = 0.03), HIV (p = 0.04), and mild liver disease (p = 0.05). For the lower quantile (< = 1 day, 5% quantile), female sex (p = 0.01), HIV (p = 0.04), and mild liver disease (p = 0.007) were more strongly associated with longer TTT. Having a previous health plan extended TTT (p = 0.05) at the upper quantile (79 days, 90% quantile). Conclusions: Our study showed an encouraging 5-year trend of the median TTT decreasing by 28%, Numerous factors associated with longer TTT included increased age, CVD, HIV, mild liver disease, female sex, and PPQ plan. This study provides insights into patient-related factors associated with longer time to initiation of targeted therapies for patients with metastatic lung cancer with driver mutations. Additional research is needed to identify the reasons for longer TTT and to develop strategies to expedite delivery of optimal therapies. Research Sponsor: IBM Watson Health.

Poster Session

120 Factors associated with time to targeted therapy for patients with metastatic lung cancer with driver mutations. First Author: Suwei Wang, IBM Watson Health, Union City, CA

Poster Session

121 Nonconscious nonverbal synchrony and patient-physician affect and rapport in cancer treatment discussions with black and white patients. First Author: Lauren M. Hamel, Karmanos Cancer Center, Wayne State University, Detroit, MI

Background: Clinical communication is poorer with Black patients than with White patients, but most studies are limited to verbal communication. Nonverbal synchrony, the nonconscious coordination of movement between individuals, has shown to reflect relationship quality. We investigated nonverbal synchrony’s association with patient and physician affect and rapport in cancer treatment discussions, and if those associations differed by race. Methods: We used motion detection software to measure overall synchrony and synchrony based on who is leading in the interaction (similar to leading in dancing) in video recordings of 68 Black patients and 163 White patients discussing treatment with their physicians. Naïve observers rated the interaction for six constructs: patient and physician positive and negative affect and patient-physician positive and negative rapport. We examined associations between patient race, nonverbal synchrony and the six constructs. Results: In interactions with Black patients, overall synchrony was positively associated with patients’ positive affect and positive patient-physician rapport and negatively associated with patients’ negative affect and negative patient-physician rapport. White patients showed positive synchrony was positively associated with patients’ positive affect and positive patient-physician rapport and negatively associated with patients’ negative affect and negative patient-physician rapport. In interactions with White patients, synchrony was positively associated with patients’ positive affect and positive patient-physician rapport, and negatively associated with patients’ negative affect and negative patient-physician rapport. In interactions with Black patients, White patients discussing treatment with their physicians, showed nonverbal synchrony is particularly important in interactions with Black patients. Next, we will investigate associations with patient outcomes with satisfaction. Findings could contribute to physician training to enhance coordination and outcomes in oncology interactions. Research Sponsor: U.S. National Institutes of Health.

Poster Session

122 Racial differences in hospitalizations associated with COVID-19 in patients with cancer. First Author: Chintant Pandya, Dana Farber Cancer Institute, Boston, MA

Background: Reports concerning possible racial disparities in COVID-19 illness severity and health consequences for U.S. minority population have been emerging. Similar data for patients with cancer diagnosis have been scant. We aimed to evaluate the effect of race on primary outcome of hospitalization in patients with cancer who tested positive for Covid-19. Methods: Retrospective observational quality of care study of electronic health record for patients with cancer who tested positive for Covid-19 between March 1 and June 10, 2020 and had increasing age, CVD, HIV, mild liver disease, female sex, and PPQ plan. The effect of hospital volume on the outcome of stage 4 pancreatic cancer is not well known. We evaluated the effect of hospital volume on time to treatment and survival in patients with stage 4 pancreatic adenocarcinoma (PDAC). Methods: We used the National Cancer Database, including 1,319 hospitals to identify the study population. Adult (> = 18 years) patients with stage 4 PDAC were included. We evaluated the patients based on hospital volume categories, unknown follow-up, and survival of less than 30 days. We categorized the hospital volume as three groups: low (< = 25th centile), medium (25th-75th centile), and high-volume hospitals (HVV) (> = 75th centile). Time from diagnosis to treatment initiation was classified as early (< = 6 weeks) or late (> = 6 weeks). Kaplan-Meier and Cox regression methods were used to evaluate the overall survival (OS) between HVV and low-volume hospital (LVH) groups. Results: Among 72,531 patients with stage 4 PDAC, 65% received chemotherapy. Patients treated at HVV had higher rates of chemotherapy (73% vs. 60%, p < .001), and late chemotherapy initiation (27% vs. 20%, p < .001) compared to LVH. Patients at HVV were more likely to be younger, have less comorbidity score, private insurance, treated at the academic center, and need to travel more than 50 miles (all p < .001). Patients treated at HVV had better OS than LVH (6 vs. 4 months, p < .001). In multivariable analysis, HVV was independently associated with better OS versus LVH (HR 079 [0.72-0.87]). In addition, HVV was associated with better OS in patients who received chemotherapy (HR 0.78 [0.69-0.88]), while early treatment initiation, age, black race, uninsured status was not. Conclusions: Treatment at an HVV is independently associated with improved survival among patients with stage 4 PDAC. Patients seen at HVV had a higher rate of chemotherapy administration but a longer time to treatment initiation. Research Sponsor: None.

Poster Session

123 Effect of hospital volume on outcome of stage IV pancreatic cancer. First Author: Suleyman Yasin Goksu, UT Southwestern Medical Center, Dallas, TX

Background: The effect of hospital volume on the outcome of stage 4 pancreatic cancer is not well known. We evaluated the effect of hospital volume on time to treatment and survival in patients with stage 4 pancreatic adenocarcinoma (PDAC). Methods: We used the National Cancer Database, including 1,319 hospitals to identify the study population. Adult (> = 18 years) patients with stage 4 PDAC were included. We evaluated the patients based on hospital volume categories, unknown follow-up, and survival of less than 30 days. We categorized the hospital volume as three groups: low (< = 25th centile), medium (25th-75th centile), and high-volume hospitals (HVV) (> = 75th centile). Time from diagnosis to treatment initiation was classified as early (< = 6 weeks) or late (> = 6 weeks). Kaplan-Meier and Cox regression methods were used to evaluate the overall survival (OS) between HVV and low-volume hospital (LVH) groups. Results: Among 72,531 patients with stage 4 PDAC, 65% received chemotherapy. Patients treated at HVV had higher rates of chemotherapy (73% vs. 60%, p < .001), and late chemotherapy initiation (27% vs. 20%, p < .001) compared to LVH. Patients at HVV were more likely to be younger, have less comorbidity score, private insurance, treated at the academic center, and need to travel more than 50 miles (all p < .001). Patients treated at HVV had better OS than LVH (6 vs. 4 months, p < .001). In multivariable analysis, HVV was independently associated with better OS versus LVH (HR 079 [0.72-0.87]). In addition, HVV was associated with better OS in patients who received chemotherapy (HR 0.78 [0.69-0.88]), while early treatment initiation, age, black race, uninsured status was not. Conclusions: Treatment at an HVV is independently associated with improved survival among patients with stage 4 PDAC. Patients seen at HVV had a higher rate of chemotherapy administration but a longer time to treatment initiation. Research Sponsor: None.
Early-onset colorectal cancer in younger patients: A population-based study. First Author: Hu Huang, IBM Watson Health, Cambridge, MA

Background: In the US, the incidence of colorectal cancer (CRC) is increasing in patients younger than 50 years who may present with advanced stage, high grade, left-sided colon or rectal cancers with signet ring cell histopathology, aggressive clinical course, and reduced overall survival. Understanding the characteristics of such patients and the factors influencing clinical decision making and optimal treatment is essential. In this study, we describe the attributes of adults who are 50 years and younger with a first diagnosis of CRC and ascertain molecular testing rates and time to surgery by using data from a commercially insured cohort in the US. Methods: This retrospective study of patients ages 50 and younger with a first diagnosis of CRC utilizes the IBM MarketScan database, and focuses on claims from January 2013 to December 2018. Included patients had continuous insurance enrollment of 12 months before and 6 months after diagnosis. We determined rates of tumor testing for microsatellite instability (MSI) or immunohistochemistry (IHC) for mismatch repair (MMR) proteins and referral to genetic services in all patients, as well as mutational analysis of KRAS, NRAS, and BRAF in metastatic CRC patients. Results: Time to surgery rescection of primary tumor (TTS) in non-metastatic colon cancer patients was measured.

Results: During the 5 year period, 10,577 patients ages 18 to 50 years had a first diagnosis of CRC, which was 15.6% of the 67,921 adults of all ages with CRC. Claims for MSI or IHC for MMR proteins within 120 days of initial diagnosis were done in 4,429 (41.9%) patients and referrals to genetics services/counseling within 1 year of initial diagnosis were done in 4,433 (41.1%) patients. Among metastatic CRC patients, KRAS, NRAS, or BRAF tumor mutational analyses within 120 days of initial diagnosis were documented in 323 (31.5%). The median TTS ranged from 7 to 15 days with no statistically significant differences based on geographic region or health insurance plan type. Conclusions: Younger patients with early onsets of CRC had low rates of referral to genetics services, tumor MSI or IHC for MMR proteins testing, and KRAS, NRAS, and BRAF tumor mutational analysis. There were no statistically significant differences among age, sex, and geographic region in the utilization of genetic sex type and TTS in non-metastatic colon cancer patients. Although underreporting is possible in our study, the findings of low utilization of genetic services and tumor genomic testing in these younger patients with early onset CRC are a critical management gap in the care of this population. Research Sponsor: IBM Watson Health.

Trends in obesity among patients registered to SWOG cancer clinical treatment trials. First Author: Riha Vaidya, Fred Hutchinson Cancer Research Center, Seattle, WA

Background: Rising obesity rates have been documented in the United States population since the 1980s. Several studies have shown links between obesity and the incidence of – and the outcomes of – specific cancer types. Few studies have examined the prevalence of obesity among cancer patients at the time of diagnosis or for who participate in cancer clinical trials. We examined the prevalence of obesity over a 35-year period among patients enrolled in clinical treatment trials conducted by the SWOG Cancer Research Network. Methods: We analyzed body mass index (BMI) at registration among patients enrolled in SWOG clinical trials conducted between 1985 and 2020. Patients were included if they had a first diagnosis of one of the following cancers (age ≥18) participating in trials in obesity-related cancers between 1985 and 2020 were included. Obesity was classified as BMI ≥ 30 kg/m². Multivariable logistic regression was used to examine trends, adjusting for age, sex, race, and trial type. Time was defined as year of enrollment and examined in separate models as continuous years and as 5-year intervals. We examined trends among patient subgroups by sex and by treatment type (chemotherapy, immunotherapy, and targeted therapy). Results: 16,374 patients enrolled in SWOG clinical trials conducted between 1985 and 2020 were analyzed. Patients were most commonly enrolled in trials for breast cancer (n = 6,327; 38.6%), colon cancer (n = 2,408; 14.7%), multiple myeloma (n = 2,112; 12.9%), and rectal cancer (n = 1,785; 10.9%). Overall, 32% of patients were obese. We observed an increasing prevalence of obesity over a 35-year period among patients enrolled in clinical treatment trials conducted by the SWOG Cancer Research Network. Conclusions: Younger patients with early onsets of CRC had low rates of referral to genetics services, tumor MSI or IHC for MMR proteins testing, and KRAS, NRAS, and BRAF tumor mutational analysis. These trends persisted even after adjustments for age, sex, race, and treatment type (OR = 1.35 per 5-year increase, 95% CI: 1.31-1.39, p < .0001). Positive linear trends in obesity prevalence were also observed for all subgroups of patients across treatment settings. There was no evidence of difference in trends between males and females or between the three treatment types. Conclusions: We observed an increasing trend in obesity among patients participating in clinical trials for obesity-related cancers, mirroring US adult obesity rates. Our findings indicate good representation of patients in clinical trials, with favorable implications for the applicability of trial findings to this group of patients. Research Sponsor: U.S. National Institutes of Health, Other Foundation.

The relationship between treatment intensity and characteristics of patients with early-stage breast cancer. First Author: Jeffrey Franks, University of Alabama at Birmingham, Mount Olive, AL

Background: Clinical trials are used to generate standard-of-care, yet often do not reflect patient populations treated in real-world settings. Elderly patients or patients of color who are often underrepresented in trials, may improve care are prescribed. This study examined whether patient characteristics are associated with treatment intensity in early stage breast cancer. Methods: This retrospective cross-sectional study included women with a stage I-III breast cancer from American Society of Clinical Oncology’s CancerLinQ database treated by chemotherapy from 2005-2019. Seven standard-of-care regimens were characterized by intensity. For patients with ER+/HER2- breast cancer, low-intensity regimens were Taxol and Cyclophosphamide or Adriamycin and Cyclophosphamide; while Taxol, Adriamycin, and Cyclophosphamide was considered high intensity. For patients with HER2+ breast cancer, the low intensity regimen was Taxol and Herceptin; while Adriamycin and Cyclophosphamide followed by Taxol and Herceptin; Taxol, Carboplatin, and Herceptin; or Taxol, Carboplatin, Herceptin, and Pertuzumab were considered high intensity. A model estimating the likelihood of intensity was calculated using log-binomial regression, in order to produce relative risks. The models were adjusted for patient demographics and cancer stage. Results: Of 24,383 patients, 51% had ER+HER2-20%, ER-HER2-, and 29% HER2+ breast cancer. Most patients were White (60%), age 40-69 (80%), had stage II breast cancer (39%), and received higher intensity treatment (65%). Adjusted for other covariates, patients who were Black were more likely to receive high-intensity treatment than patients who were White (OR = 1.6, 95% CI: 1.51-1.66). Additionally, older adults were more likely to receive low-intensity treatment, with 42% of patients over 70 receiving low intensity treatment, and 29% of patients between the ages 40 and 69 received low intensity treatment (RR 1.5, 95% CI: 1.44-1.54). Conclusions: Differences in treatment intensity were observed for patients with differing demographic characteristics. Further research is needed to determine lack of representation in clinical trials impacts on prescribing patterns, regimen intensity, and survival. Research Sponsor: Robert Wood Johnson Foundation.

Survey of challenges in access to diagnostics and treatment for neuroendocrine tumor (NET) patients (SCAN): Global disparities in quality healthcare for NETs. First Author: Dirk Van Genechten, VZW NET & Men Kanker Belgium, Kortrijk, Belgium

Background: Neuroendocrine tumors (NETs) are rare and complex neoplasms with increasing incidence and prevalence worldwide. SCAN assessed global delivery of healthcare to NET patients. This analysis focused for the first time on healthcare quality evaluation by economic areas-Advanced Economies (AE) and Emerging and Developing Economies (EDE) classification used as per the International Monetary Fund. Methods: During Sept-Nov 2019, NET patients and healthcare professionals (HCPs) completed an online survey (available in 14 languages). Results: 2,795 respondents from 57 countries across 6 continents. AE NET patients/carers were 88% (2076/2359), EDE were 12% (283/2359). EDE were evenly spread 51% AE (221/436) vs. 49% EDE (215/436). The average evaluation score provided by NET patients to the healthcare received in the country they reside in for more than 6 months was 3.6 in AE, while one point lower 2.5 in EDE on a 5-point Likert scale (1-poor, 5-excellent). HCP’s and NET patients’ scores were aligned: 3.9 as per AE HCPs (94% [208/221]), vs. 2.6 by EDE HCPs (68% [190/283]). The availability of top 3 most used NET treatments over the past 12 months was significantly lower in EDE than AE (TTF/65, ECO/269, PRRT/269 vs. EDE 71% [201/283] p<0.0001 [Chi-squared], somatostatin analogues - in AE 67% (1391/2076) vs. EDE 59% (1183/2076) p<0.0001, PRRT was 57% in AE countries (1183/2076), vs. EDE 33% (93/283) p<0.0001. Specialized services were of limited usage globally and in deep disparity by economic areas, namely: NET specialist consultations (AE 55% [1143/2076] vs. EDE 40% [712/283] p<0.0001), multidisciplinary team care 34% (AE 34% [706/2076] vs. EDE 22% [63/283] p<0.0001), a clinical nurse specialized in NETs (AE 28% [589/2076] vs. EDE 7% [21/283] p<0.0001), and psychological care/therapy (AE 13% [261/2076] vs. EDE 5% [15/283] p<0.0001), physical activities like yoga classes, trainings designed for cancer patients (AE 11% [220/2076] vs. EDE 3% [72/283] p<0.0001). State healthcare coverage was claimed by half of AE NET patients (51% [1065/2076]) vs. EDE 13% [36/283] p<0.0001), while 27% of AE patients were covered by social insurance (6% [589/2076] vs. EDE 2% [5/283] p<0.0001). Conclusions: Availability of treatments and access to specialized NET healthcare is a global challenge and is in need of improvement. Additionally, disparities between AE and EDE in terms of treatment availability, support services usage, and state healthcare coverage is significant and manifests deep inequality. Research Sponsor: IPSEN, ITM, Novartis.
128 Poster Session
Breaking down barriers: A strategic initiative to collect sexual orientation and gender identity information in the oncology patient population. First Author: Georgina T. Rodgers, Cleveland Clinic, Cleveland, OH

Background: The LGBT community is a diverse population that crosses race, ethnicity, socioeconomic status, age, and other factors. It is estimated that 8.8 million Americans are part of the community and the number is likely higher due to underreporting. The use of PN for gynecologic cancers has increased risk for certain cancers, sexually transmitted infections, and is more likely to use alcohol, tobacco, drugs, and suffer from obesity, and behavioral health issues. LGBT patients face barriers to accessing care due to being under-insured, fear of discrimination, lack of access to culturally competent health care providers. Our cancer center embraced the need to collect sexual orientation/gender identity (SOGI) data as a means to identify and address the comprehensive needs of our patients and set a goal to provide an inclusive, patient-centered environment through education of our teams to build a trusted patient-provider relationship. Methods: We implemented a history section in the EHR to assist with data collection including, preferred name, sexual orientation, gender identity, legal sex, and sex assigned at birth. A project team was developed in 2019 to improve utilization of the existing tool and provide education to increase the comfort level of our caregivers. Our target groups consist of advance practice providers, RN care coordinators, social workers and physicians. Educational sessions occurred through multiple modes and “champions” were identified within target groups to keep the momentum going. Results: There was initial hesitation in utilization due to lack of understanding of the impact on patient care and lack of confidence in communication. Training was modified to include communication techniques and the whole collection of SOGI data is important. Findings: A monthly report was developed to determine utilization of the SOGI fields and as of May 2020 have increased from 1.5% utilization to 17.5% utilization. A survey has been developed to educate attendees to determine pre and post education comfort levels in addressing the SOGI needs of patients and early data is showing a marked improvement in the comfort level of caregivers. Research Sponsor: None.

129 Poster Session
The use of validated geriatric assessment instruments among U.S. community oncologists. First Author: Ajeet Gajra, Cardinal Health, Dublin, OH

Background: Older adults are disproportionately affected by cancer and may be under-treated due to concerns for adverse events or may suffer excessive toxicity from standard cancer treatments due to comorbidity and diminished physiologic reserve. A geriatric assessment (GA) can assist with GA-related decisions. Therefore, efforts are made to incorporate GA into care of older adults with cancer. This descriptive study aimed to assess knowledge, perceptions, and utilization of GA instruments among community oncologists/hematologists (cOH) with an overall goal to identify actionable disparities in the management of older adults with cancer. Methods: Questions about GA in the care of older adults with cancer were developed by two medical oncologists (AG and BA) and presented to cOH with diverse geographic representation at live meetings and a preceding web-based survey between September 2019 and February 2020. Descriptive statistics were used to analyze the results. Results: Of the 349 participants, the response rate was 100%. The cut-off age used to define older adults by COH was: ≥ 65 years (22%), ≥ 70 years (39%), and ≥75 (32%). The proportion of patients aged ≥ 70 years in their practices was reported as: 26-50% (48%) and ≥ 50% (26%). Most COH (60%) performed no formal GA to inform treatment decisions. The two most common reasons for not performing GA were: “Too cumbersome to incorporate into routine practice” (44%), and “Adds no value beyond the comprehensive history and physical exam” (36%). COH awareness of validated GA/related instruments was: Mini-Mental State Exam (MMSE; 63%), Comprehensive GA (CGA; 37%) and CARG (Cancer and Aging Research Group) GA tool (22%). 22% were not aware of any validated instruments. Outside of clinical trials, the most frequently used validated GA instrument for routine practice was CGA (54%), CGA (23%), CARG (29%), and CRASH (9%). For older adults with cancer, EOCG performance status and comorbidities were the two GA-related surrogate factors utilized in treatment decisions (88% and 73%, respectively). Conclusions: A majority of US community oncologists do not incorporate formal GA with validated instruments in the decision-making for older patients with cancer due to lack of time, resources and awareness. Education directed towards community oncologists may change perception and practice. Research Sponsor: Cardinal Health.

130 Poster Session
Long-term impact of patient navigation (PN) for breast cancer (BCA) screening in an urban academic medical center. First Author: Lisa Phuong, Montefiore Medical Center, Bronx, NY

Background: PN improves BCA screening rates in underserved women, and decreases health care disparities. However, there is limited data regarding the ability of PN sustained change. We evaluated the long-term impact of PN for BCA screening at our institution, by assessing the rate at which women who underwent screening mammogram (SM) in 2017, with the aid of PN, completed subsequent (f/u) SM within guideline-concordant time frames. PNPs: Women who underwent screening mammogram (SM) in 2017, with the aid of PN in 2017. Medians time between 2017 SM and prior SM was 24 mo, p < 0.01) and Spanish speakers (26 to 20 mo, p < 0.01). Conclusions: A single episode of PN for BCA screening had a sustained impact on pts at our institution, leading to improved compliance with future SM. Improvement was seen in pts of diverse races, ethnicities, and languages, with preference for PN if patients did not complete 1 f/u SM is planned. Research Sponsor: National Accreditation Program for Breast Centers (NAPBC) Patient Navigation Project.

131 Poster Session
“Coming out” against cancer: How local outreach to the LGBT community can reduce cancer disparities. First Author: S Timpet, Cleveland Clinic, Cleveland, OH

Background: Lesbian, Gay, Bisexual, and Transgender (LGBT) individuals make up an estimated 4% of the population, qualifying them as a sexual minority. LGBT individuals are also more likely to be a racial or gender minority, to live in poverty, and to have less social support than their heterosexual peers. LGBT populations in 2017, 24% (26 to 20 mo, p < 0.01) and Spanish speakers (26 to 20 mo, p < 0.01). Conclusions: When our healthcare institution met local LGBT people within their community, the result was quite impactful. This pilot program proved successful at educating members of the community about their increased cancer risk, which resulted in higher cancer screening rates. More programs tailored to LGBT-specific health concerns are important to continue reaching these populations and eventually decrease health disparities in the community. Research Sponsor: None.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
**Racial disparities in performance status among cancer patients at a community oncology practice.**

**First Author:** Joanne S. Buzaglo, Concerto HealthAI, Boston, MA

**Background:** Performance status is used to characterize patient ability to tolerate chemotherapy and as a selection criterion for clinical research. Poor performance status can exclude patients from clinical trial participation. Furthermore, financial and race differences can impact performance status. This burden should not be tolerable to cancer patients who are already navigating their cancer care journeys. The aim of this project was to quantify the sociodemographic and geographic contributions to disparities in performance status among patients seen at a community oncology practice with Black patients exhibiting significant worse performance status than White patients. These findings have implications for disparities in treatment outcomes and racially biased access to clinic trials. Research Sponsor: None.

**Results:** 6,613 patients completed the PCQ survey (mean age 59; 33% male/67% female; 55.4% White, 38% Black). Cancer type was known for a subset of patients (22% breast, 9% hemolymphatic, 4% lung, 5% colorectal, 3% prostate, 11% other types). The average ECOG score for the total sample was 0.97. 50% indicated they were able to complete their normal daily activities without any restriction; 26.9% were able to complete their normal daily activities and some light work. In contrast, 10.3% indicated they could take care of themselves, but could not work and are in bed or chair less than half the day. 10.3% could take care of themselves sometimes but could not work and are in bed/chair more than half the day. 4.5% indicated they could not take care of themselves and were in bed/chair almost always. When assessing racial differences between those self-identifying as White or Black/African American, average ECOG score was higher in Black patients (Mean(SD) = 1.03(1.24)) compared to White patients (Mean(SD) = 0.93(1.14)) (p = 0.003). We observed a higher percentage of Black patients not being able to take care of themselves (51.9% vs. 41.0% White). In contrast, a higher percentage of White patients reported being able to complete all daily activities without restriction (38.3% Black vs. 54.5% White). **Conclusions:** This study shows significant racial disparities in performance status among patients seen seen at a community oncology practice with Black patients exhibiting significant worse performance status than White patients. These findings have implications for disparities in treatment outcomes and racially biased access to clinic trials. Research Sponsor: None.

**Disparities in advanced-stage breast cancer: The socioeconomic and geographic contributions.**

**First Author:** Kelli Clemons, Medical College of Georgia, Augusta, GA

**Background:** Socioeconomic disparities in healthcare have been well documented in America, with cancer being a critical area. One in four deaths are reported being able to complete all daily activities without restriction (38.3% Black vs. 54.5% White). Conclusions: This study shows significant worse performance status than White patients. These findings have implications for disparities in treatment outcomes and racially biased access to clinic trials. Research Sponsor: None.

**Methods:** This study used a retrospective, observational design with ePRO collected via the Patient Care Monitor™ (PCM). All study data were collected as part of routine clinical care at a community oncology practice during 1/2019-11/2019. An Eastern Cooperative Oncology Group (ECOG) score was automatically calculated after patients at an initial clinic visit completed a 7-item questionnaire that assessed performance status via eTablet. **Results:** 6,613 patients completed the PCM survey (mean age 59; 33% male/67% female; 55.4% White, 38% Black). Cancer type was known for a subset of patients (22% breast, 9% hemolymphatic, 4% lung, 5% colorectal, 3% prostate, 11% other types). The average ECOG score for the total sample was 0.97. 50% indicated they were able to complete their normal daily activities without any restriction; 26.9% were able to complete their normal daily activities and some light work. In contrast, 10.3% indicated they could take care of themselves, but could not work and are in bed or chair less than half the day. 10.3% could take care of themselves sometimes but could not work and are in bed/chair more than half the day. 4.5% indicated they could not take care of themselves and were in bed/chair almost always. When assessing racial differences between those self-identifying as White or Black/African American, average ECOG score was higher in Black patients (Mean(SD) = 1.03(1.24)) compared to White patients (Mean(SD) = 0.93(1.14)) (p = 0.003). We observed a higher percentage of Black patients not being able to take care of themselves (51.9% Black vs. 41.0% White). In contrast, a higher percentage of White patients reported being able to complete all daily activities without restriction (38.3% Black vs. 54.5% White). **Conclusions:** This study shows significant racial disparities in performance status among patients seen seen at a community oncology practice with Black patients exhibiting significant worse performance status than White patients. These findings have implications for disparities in treatment outcomes and racially biased access to clinic trials. Research Sponsor: None.

**Assessing the demographics of fertility preservation discussions in cancer patients.**

**First Author:** Michael E Auster, University of Texas Health Science Center at San Antonio, San Antonio, TX

**Background:** Young adults undergoing cancer treatment often face increased risk of infertility. Despite current ASCO guidelines recommending prompt fertility preservation education, knowledge about prevalence and barriers to oncofertility care is lacking. This study sought to characterize the utilization of oncofertility counseling in a major Hispanic serving institution. **Methods:** Retrospective chart review was performed at the University of Texas Mays Cancer Center San Antonio and included patients diagnosed with testicular, early stage breast cancer or leukemia/lymphoma between age 18-40 from 2015-2019. **Results:** Of 304 evaluable patients, only 120 had documented fertility discussions. There was no significant difference in the odds of counseling between gender, funding, or race. However, the odds of receiving fertility discussions was higher in non-Hispanic whites compared to Hispanic whites with an odds ratio of 1.94 (p-value: 0.032). For those who opted for fertility treatment there was no statistically significant difference between diagnosis, race, ethnicity, or funding status. **Conclusions:** Our study demonstrates oncofertility discussions occur in a relatively small proportion of eligible patients. Additionally, patients who self-identify as Hispanic were less likely to receive fertility discussions. This study demonstrates that more research is necessary to evaluate the barriers to fertility discussion and treatment, and how these barriers result in decreased oncofertility education in Hispanic young adults with curable malignancies. Research Sponsor: None.
Opioid prescribing practices in adolescent and young adults with sarcomas. First Author: Melissa Beauchemin, Columbia University Mailman School of Public Health, New York, NY

**Background:** Adolescents and young adults (AYAs) with sarcoma undergo procedures that can result in acute and chronic pain. Adult cancer patients are at increased risk of chronic opioid use, and AYAs are vulnerable to misuse. However, opioid prescribing practices in AYAs with sarcoma are not known. We described opioid prescribing during active therapy and identify factors associated with continued opioid prescription post-treatment in AYAs with newly diagnosed sarcoma. 

**Methods:** Patients 10-26 years who were diagnosed with sarcoma between 2008-2016 were identified using IBM Marketscan database. Included subjects received anti-cancer therapy (chemotherapy, procedures, and/or radiation) within 30 days of diagnosis and were continuously enrolled in one insurance plan (commercial or Medicaid) >12-months both before diagnosis and after last therapy. Primary outcome was opioid use, defined as at least one opioid prescription during the 12 months following treatment completion. Covariates included age, sex, insurance, treatment type, mental health (MH) and substance use (SU) diagnoses. 

**Results:** We included 1,349 patients, 75% had commercial insurance, 21% had a previous MH, and 4% had previous SU diagnosis. 63% of subjects used opioids during treatment and 28% received at least 1 prescription in the year post-therapy. Medicaid insurance was associated with 60% higher likelihood of opioid use during treatment and those with prior use were three-times more likely to continue post-therapy. 

**Conclusions:** Opioid prescriptions in AYAs with sarcoma are common during treatment. A significant proportion of patients continue to receive opioids post-therapy, particularly those with a history of use pre-diagnosis. Medicaid insurance and MH disorder are also associated with continued use post-therapy. Further research is needed to establish safe and effective opioid prescribing practices in AYAs with sarcoma. 

Research Sponsor: U.S. National Institutes of Health, Conquer Cancer Foundation of the American Society of Clinical Oncology, P30CA013696.

**Multivariable model: Opioid rx during and post treatment (Tx).**

<table>
<thead>
<tr>
<th></th>
<th>DuringTx Odds ratio (OR)</th>
<th>After Tx OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (10 – 17 v 18 – 26 years)</td>
<td>1.24</td>
<td>0.82</td>
</tr>
<tr>
<td>Sex (F v M)</td>
<td>0.95</td>
<td>0.89</td>
</tr>
<tr>
<td>Insurance (Medicaid v Commercial)</td>
<td>1.64*</td>
<td>1.56*</td>
</tr>
<tr>
<td>Prior Use (Y v N)</td>
<td>1.77*</td>
<td>2.98*</td>
</tr>
<tr>
<td>MH diagnosis</td>
<td>1.03</td>
<td>2.08*</td>
</tr>
<tr>
<td>SU disorder</td>
<td>1.55</td>
<td>1.73</td>
</tr>
</tbody>
</table>

*p<0.01
Background: Despite evidence that rising cancer care costs contribute to “financial toxicity” in cancer pts, no studies, to our knowledge, have prospectively assessed the financial impact of cancer diagnosis (dx) using disease-specific and objective financial measures. S1417CD, led by the SWOG Cancer Research Network and conducted in the NCI Community Oncology Research Program (NCORP), was the first prospective cohort study to evaluate time-to-first evidence of major financial hardship (MFH) in pts with newly diagnosed mCRC. We present results of the primary endpoint analysis. Methods: Pts aged 18-79 were followed dx to systemic therapy over 12 mo. MFH was defined as occurrence of self-reported increase in debt, new loans, selling home, refinancing home, or ≥ 20% income decline during the 12 mo study period. Cumulative incidence (CI) of MFH was estimated to account for competing risk of death. Multivariate logistic regression was used to evaluate the association between pt characteristics with development of MFH. Results: 380 pts (median age 59.9) across 126 clinic sites were enrolled. The CI of MFH was 24.6% for age 45-54, 25.6% for age 55-64, and 26.1% (75%) for age ≥ 65 years old (71.5% vs 57%, p = .0002). pSM scores reported ≥ 2 elements of MFH. Age, race, marital status, employment, and annual income (≥ vs. < $50K) were not significantly associated with MFH. In a post hoc analysis, income < $100,000 and total assets < $500,000 were both adversely associated with MFH. Each increase in number of these 2 risk factors from 0 to 1 to 2 was associated with a 49% increased risk of MFH (p<0.001). Conclusions: In a national sample of mCRC pts on systemic tx, financial hardship, most commonly in the form of increased debt, accumulates progressively over time. Nearly 3 out of 4 pts experiencing MFH at 12 mo despite access to health insurance coverage. These findings underscore the need for clinical and policy solutions such as early financial navigation and enrollment of cancer pts from financial desperation as they continue with tx. Research Sponsor: Conquer Cancer Foundation of the American Society of Clinical Oncology, Other Foundation, U.S. National Institutes of Health.

Cumulative incidence of MFH in mCRC.

### Questionnaire Administration Time Points

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>3 mo</th>
<th>6 mo</th>
<th>9 mo</th>
<th>12 mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any MFH (%)</td>
<td>24.6%</td>
<td>25.2%</td>
<td>61.8%</td>
<td>71.5%</td>
</tr>
<tr>
<td>Debt (%)</td>
<td>19.2%</td>
<td>19.7%</td>
<td>48.6%</td>
<td>56.7%</td>
</tr>
<tr>
<td>New loans (%)</td>
<td>8.7%</td>
<td>20.9%</td>
<td>27.7%</td>
<td>25.8%</td>
</tr>
<tr>
<td>≥ 20% income decline (%)</td>
<td>2.4%</td>
<td>6.8%</td>
<td>12.6%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Refinancing home (%)</td>
<td>0.3%</td>
<td>1.9%</td>
<td>2.2%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Selling home (%)</td>
<td>0.5%</td>
<td>1.6%</td>
<td>1.9%</td>
<td>2.6%</td>
</tr>
<tr>
<td>MFH (exceeding debt) (%)</td>
<td>10.3%</td>
<td>24.4%</td>
<td>31.9%</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

### Symptomatic toxicities (% of events)

<table>
<thead>
<tr>
<th>Symptomatic toxicities</th>
<th>Grade</th>
<th>GA</th>
<th>Baseline adjusted method</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2 (All Items)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue (Grade 2)</td>
<td>84.7</td>
<td>76.5</td>
<td>0.01</td>
<td>0.91</td>
</tr>
<tr>
<td>Dyspnea (Grade 2)</td>
<td>66.4</td>
<td>58.7</td>
<td>0.03</td>
<td>0.99</td>
</tr>
<tr>
<td>Grade 2 (Core Items)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue (Grade 2)</td>
<td>82.0</td>
<td>71.8</td>
<td>&lt;0.01</td>
<td>0.88</td>
</tr>
<tr>
<td>Dyspnea (Grade 2)</td>
<td>53.6</td>
<td>46.2</td>
<td>0.05</td>
<td>0.86</td>
</tr>
<tr>
<td>Grade 3 (Fatigue)</td>
<td>47.3</td>
<td>39.2</td>
<td>0.03</td>
<td>0.70</td>
</tr>
<tr>
<td>Dyspnea (Grade 3)</td>
<td>28.3</td>
<td>19.7</td>
<td>&lt;0.01</td>
<td>0.69</td>
</tr>
</tbody>
</table>

### GLMM with random effect for cluster

<table>
<thead>
<tr>
<th>GA vs Usual Care Risk ratio (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2 (All Items)</td>
<td>0.05</td>
</tr>
<tr>
<td>Fatigue (Grade 2)</td>
<td>0.95</td>
</tr>
<tr>
<td>Dyspnea (Grade 2)</td>
<td>0.03</td>
</tr>
<tr>
<td>Fatigue (Grade 3)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

### Quality of Life (QOL)

- **EORTC QLQ-C30 fatigue symptom score of 50% or greater.** Change in QOL was associated with an increased incidence of grade 3-5 constitutional (16.5% vs. 9.4%, p = 0.002 and 13.9% vs 6.3%, p = 0.002) and neurological (11.7% vs 9.4%, p = 0.002) toxicities. 20% baseline adjusted method (Basch 2016) was used to determine symptomatic toxicities: if the severity of any item increased after baseline to grade 2 or higher, the patient was classified as experiencing grade ≥ 2 event (similarly for grade ≥ 3 events).

**Conclusions:** The effects of GA intervention on symptomatic toxicities were assessed using generalized linear mixed model (GLMM) with random effect for the practice cluster. Results: MAE mean age was 77 years (range 70-96); 43% female, 87% white; 34% had gastrointestinal and 25% had lung cancer; 27% received prior chemotherapy, 70% patients provided PRO-CTCAE data (366 usual care, 344 intervention), 85.6% reported grade ≥ 2 and 49.4% grade ≥ 3 events at baseline. At baseline, compared to usual care, patients in the GA intervention arm reported fewer grade ≥ 2 overall symptomatic toxicities (76.5% vs. 84.7%) and fewer core symptomatic toxicities (grade ≥ 2: 71.8% vs. 82.0%; grade ≥ 3: 46.2% vs. 53.6%). Specifically, less dyspnea and less fatigue was reported in GA-arm (Table). **Conclusions:** GA intervention resulted in fewer symptomatic toxicities as evaluated by PRO-CTCAE. Clinical trial information: NCT02054741. Research Sponsor: U.S. National Institutes of Health.
Caregiver burden: Empowering caregivers with shared decision-making strategies and skills to improve patient quality of life and outcomes. First Author: Martha Ann Raymond, Raymond Foundation, Central Square, NY

Background: Data from the National Cancer Institute’s Surveillance, Epidemiology & End Results (SEER) 2016 program estimates there are 15.5 million cancer survivors in the United States who rely on cancer caregivers every day. Caregivers play an essential role throughout the care continuum greatly impacting a patient’s quality of survivorship. Methods: August 2019-March 2020 the Raymond Foundation hosted nationwide caregiver focus groups and an online survey. Primary goals were reaching caregivers and the patients they care for (41% male, 59% female) participated in our focus groups and online survey; 92% reported a lack of educational resources necessary to participate in shared decision making regarding treatment protocol; 90% reported they lacked communication strategies required to effectively communicate with their healthcare team; 87% reported they would like to learn more about clinical trials but did not know where to start; 85% reported they did not feel comfortable reporting treatment adverse effects; 94% reported working toward a patient-centered, advocate based care approach would lead to enhanced quality of life and improved outcomes. Conclusions: Cancer caregivers and the patients they assist understand the importance of shared decision-making and patient centered care. Based on our focus groups and survey findings, our call to action includes developing the Cancer Caregiver Advocacy Plan. This unique educational resource will provide key information about becoming informed caregivers, working with healthcare advocates. The Cancer Caregiver Advocacy Plan will be a companion resource to the Raymond Foundation’s 2018 Cancer Caregiver Action Plan as we continue to expand our education and outreach to minimize cancer burdens for patients and caregivers. Research Sponsor: Raymond Foundation.

Poster Session

The impact of a cancer diagnosis on worker productivity: Results from a survey of cancer patients and caregivers. First Author: Suepattra Grace May, Precision Health Economics and Outcomes Research, Austin, TX

Background: Traditional approaches to capturing health-related productivity loss—e.g., the human capital method—focus only on the foregone wages of affected patients, overlooking the losses caregivers can incur. Thus, the value of lost parental or caregiver productivity often underestimated. This study comprehensively estimates and describes work-related productivity losses due to a cancer diagnosis among working-age (18-65) breast cancer (BC) and non-small cell lung cancer (NSCLC) patients and their unpaid caregivers in the United States. Methods: A cross-sectional survey of BC and NSCLC patients and caregivers measured loss associated with time absent from work (absenteism) and reduced effectiveness (presenteism). Respondents reported pre- and post-cancer diagnosis income, hours worked, and time to complete tasks. Exploratory variable analyses examined correlations between respondents’ clinical and demographic characteristics—including industry of employment—and post-diagnosis productivity. Results: Of 204 patients (104 BC, 100 NSCLC) and 200 caregivers (102 BC, 100 NSCLC) who completed the survey, 319 participants (162 BC, 157 NSCLC) working ≥40 weeks/year pre-diagnosis were included in the analysis. Over a third of the NSCLC (33%) and BC (43%) patients left the workforce post-diagnosis, whereas 15% of caregivers left. Estimated mean annual productivity loss equaled $25,975 ($50,328 using traditional method) for NSCLC patients and $120,404 ($37,445 using traditional method) for BC. For caregivers, estimated mean annual productivity loss was $97,062 ($39,751 using traditional method) for NSCLC and $23,669 ($33,410 using traditional method) for BC. Exploratory analyses found that greater patient age and later stage at diagnosis were correlated with greater absenteism. Conclusions: Although patients typically experience greater absenteism, productivity loss incurred by caregivers is also substantial. Our results underscore the importance of holistic approaches to understanding the broad impact of cancer on both patients and their caregivers. Research Sponsor: AstraZeneca.

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145 Poster Session
Missed work, lost income, and job loss in survivors of colorectal cancer and their partners: A dyadic study. First Author: Christine M Veenstra, University of Michigan, Ann Arbor, MI

Background: Many survivors of colorectal cancer face long-term job loss stemming from their cancer. However, little is known about employment outcomes among survivor-partner dyads. Methods: In 2018-19, we surveyed 1150 patients who, in 2014-18, underwent resection of Stage III colorectal cancer and were seen at a community oncology practice, academic cancer center, or reported to Georgia SEER (53% RR) completed surveys. Patients and partners were asked about employment consequences of the patient’s cancer. Availability of job support and prevalence of job loss were employment outcomes described among partners. Descriptive statistics were generated to identify trends in job loss within dyads. Results: Among patients, 56% were < age 65, 63% female, 86% white, 27% had > high school education. 61% were employed at time of patient’s diagnosis. Among these, 15% had no job support benefits. 33% had paid sick leave, 47% had flexible work schedule, 28% had unpaid time off. Due to the patient’s cancer, 13% missed 7-30 days of work. In 13% missed >1 month of work. 1 patient’s cancer, 18% lost $2000-$50,000 in income and 11% lost >$100,000. 27% were no longer working at the time of survey. In 47% of dyads, both patient and partner were working before patient’s diagnosis. Among those, 39% one member of dyad was still working at time of survey and in 11% neither member of dyad was still working. In 15% of dyads, only the partner was working before patient’s diagnosis. Among those, in 50% the partner was no longer working at time of survey. In 16% of dyads, only the patient was working before diagnosis. Among those, in 48% the patient was no longer working at time of survey. Job loss in dyads in associated with older age, lower annual income, and lack of flexible work schedule. Conclusions: Missed work and loss of income are common among partners of patients with colorectal cancer. Job loss affects nearly half of dyads in the survivorship period. Employer accommodations such as flexible scheduling may help mitigate job loss among survivors and their partners.


146 Poster Session
Using retrospective adverse event data to assess the impact of visitor management during a pandemic emergency plan at a community oncology practice. First Author: Larry Edward Bilbrey, Tennessee Oncology, Nashville, TN

Background: During the COVID-19 pandemic, our community oncology practice, with over 150 providers at 33 locations, incorporated infection control guidance from the CDC into our Pandemic Emergency Plan, including visitor restrictions at all locations. There were significant increases in our clinics after visitor restrictions were implemented in March 2020, as there were fewer care-givers available in the clinics to assist patients. Methods: Using our adverse event reporting system, we abstracted and trended all safety events that involved patient falls from March 2019 through May 2020. We compared patient fall events during the period of visitor restriction (March-May 2020) to the same period in 2019, and to the 3 months preceding March 2020 and the implementation of COVID-19 restrictions. We reported patient fall events per 1,000 patient visits. Results: Prior to COVID-19, patient fall events averaged .207 falls per 1,000 patient visits for March thru May 2019 and .137 falls per 1,000 patient visits for Dec 2019 thru Feb 2020. Following the implementation of visitor restrictions in March 2020, patient fall events increased to .271 per 1,000 visits, with a vast upward trend resulting in .435 patient fall events per 1,000 visits in May of 2020 when the restrictions were tightened, more than double previous averages prior to COVID-19. Conclusions: Family members and care-givers play an important role in the patient’s care team. We are confident that the significant increase in patient falls in May 2020 is attributed to visitor restrictions. These findings support the vital role of family and care-givers in patient safety. They not only provide transportation, emotional support and information on patient health status, but assist with ADLs, ambulance and transfer needs during the patient’s visits to the clinics. Healthcare facilities are often under-resourced and under-staffed to fully address patients’ physical needs. Limiting care-givers during a pandemic may reduce the transmission of infection, but also may lead to other unexpected adverse events. Using these findings, we will be increasing standard fall prevention procedures. The practice’s emergency pandemic plan on visitor restrictions will also be amended to take this into account. Research Sponsor: None.

147 Poster Session
Communicating the components of informed decision-making in patients with pancreatic cancer receiving preoperative therapy. First Author: Howard J. Lee, Massachusetts General Hospital, Boston, MA

Background: Preoperative therapy for localized pancreatic cancer represents an emerging treatment paradigm with the potential to provide significant benefits, yet with complex risks. Research is lacking about whether clinicians effectively communicate key components of informed decision-making for patients receiving preoperative therapy. Methods: From May 2019 to April 2020, we conducted a two-part, mixed methods study. In part 1, we conducted interviews with clinicians (medical/radiation/surgical oncology, n = 13) and patients with pancreatic cancer who had received preoperative therapy (n = 18) to explore perceptions of information needed to make informed decisions about preoperative therapy, from which we generated a list of key elements. In part 2, we audio recorded the initial multidisciplinary visits of patients with pancreatic cancer eligible for preoperative therapy (n = 20). Two coders (94% concordance) independently identified whether clinicians discussed key elements from part 1. Patients also completed a post-visit survey reporting whether clinicians discussed the key elements. We explored discordance between audio recordings and patient reports using qualitative, explanatory thematic analysis. Results: In part 1, we identified 13 key elements of informed treatment decision-making, including treatment logistics, alternatives, and potential benefits/benefits. In part 2, recordings showed that most visits included discussions about logistics, such as the chemotherapy schedule (n = 20) and use of a port-a-cath (n = 20), whereas few included discussions about risks, such as the potential for hospitalizations (n = 7), urgent visits (n = 6), or need help with daily tasks (n = 6). Patients reported hearing about potential benefits, such as likelihood of achieving surgery (n = 10) and cure (n = 7), even when these were not discussed. Qualitative findings across these consistent cases included clinician optimism regarding present day results versus historical findings and mentions of positive outcomes from prior patients without citing specific data or potential adverse outcomes. Conclusions: We identified 13 key elements of informed treatment decisions. Although clinicians frequently disclosed much of this information, we found multiple cases of patient-clinician discordance for certain key elements, which underscores the need for interventions to enhance patient-clinician communication regarding pancreatic cancer treatment decisions. Research Sponsor: American Cancer Society Institutional Research Grant.

148 Poster Session
Patient and physician decision-making on the use of novel agents in chronic lymphocytic leukemia (CLL); What drives preferences? First Author: Hannah Le, AstraZeneca LP, Gaithersburg, MD

Background: CLL treatment has changed dramatically with the approval of novel agents, but data to guide treatment decisions are still lacking. How patients (PTs) and oncologists (ONCs) prioritize treatment attributes is unknown. Methods: ONCs and PTs completed an online survey to quantify preferences for first-line (1L) CLL treatment with novel agents via a discrete choice experiment; ONCs and PTs chose between hypothetical treatment profiles with varying attribute levels taken from product labels, registral trials, and real-world studies. Hierarchical Bayes models were used to estimate attribute level preference weights, which were used to compute relative importance (RI), a measure of how influential an attribute is in treatment choice out of a total of 100%, respectively. Results: For PTs, 70% were women, 72% were in community practice. PTs (n = 220) had median age 53. 32% were in active surveillance, 36% were in/had completed IL treatment, and 32% were relapsed/refractory. Increasing 2-year progression-free survival (PFS) from 75% to 95% had the greatest impact on preferences, with a mean RI of 40% for PTs and 30% for ONCs (Table). When assessing trade-offs between 2-year PFS and other attributes, ONCs required the largest increase in PFS (1%) to compensate for an increased risk of atrial fibrillation (AF) from 5% to 20%. PTs required a greater increase in PFS (6%) to compensate for an increased risk of infection from 7% to 20%. ONCs (vs PTs) required 2-4 times higher increases in PFS to accept an increased risk of AF, discontinuation due to adverse events (AE), bleeding, tumor lysis syndrome (TLS), and arthralgia/myalgia. Conclusions: ONCs and PTs valued PFS most when selecting a novel CLL agent. While both groups accepted potential risks in exchange for increased PFS, ONCs were less likely to accept a higher risk of AEs. ONCs and PTs may perceive the risks associated with novel agents differently; ONC-PT communication may benefit from a more focused discussion on the risks of AEs, relevant to treatment outcomes, with patient goals in mind. Research Sponsor: AstraZeneca.

Attribute RI by respondent type.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Change from least to most desirable level</th>
<th>PTs</th>
<th>ONCs</th>
<th>RI %</th>
<th>RI %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-year PFS**</td>
<td>75% to 95%</td>
<td>10</td>
<td>40</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>All-grade (G) AF**</td>
<td>20% to 5%</td>
<td>17</td>
<td>11</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Discontinuation due to AF</td>
<td>28% to 93%</td>
<td>14</td>
<td>19</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>G3/4 infection</td>
<td>20% to 7%</td>
<td>13</td>
<td>11</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>G3/4 arthralgia/ myalgia</td>
<td>36% to 19%</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Administration**</td>
<td>Intravenous (IV) monthly for 6 months + daily oral until progression to no treatment</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>G3/4 bleeding</td>
<td>IV + daily oral until progression</td>
<td>8% to 9%</td>
<td>5</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

Ratio data: 49% is twice as important as 20%. *p < 0.05; **p < 0.001.

Background: With the emergence of potent therapies in non-metastatic castration-resistant prostate cancer (nmCRPC) there is a need to understand the impact of nmCRPC treatments on patient comorbidities and concomitant medications. The goal of this study was to understand treatment management of nmCRPC in patients with pre-existing comorbidities from a physician perspective. Methods: Physicians who treated nmCRPC patients with systemic therapy were recruited from a US physician panel for an online survey (Sept-Oct 2019). Physician responses included physician treatment practice, demographic characteristics, and their ‘typical’ nmCRPC patient profile from the past 6 months (i.e., health profile, disease management, and quality of life (QOL)). Results: Fifty US physicians (96% urologists, 44% oncologists) with 27-6 years in practice, treated on average 30 nmCRPC patients in the past 6 months. The most common nmCRPC treatments were leuproide acetate (82%), enzalutamide (80%) and apalutamide (70%). The most common comorbidities reported were hypertension (27.1%), diabetes (28.3%), and urinary issues (28.3%). 78% of the physicians reported taking concomitance and medications for comorbidities into consideration when prescribing nmCRPC treatments. Between 15%-28% of physicians reported a change in nmCRPC treatment and 19%-26% reported a dose change in nmCRPC treatment for up to 1/3 of their patients due to comorbidities (Table). For QOL, urologists versus oncologists indicated more days with poor health status among nmCRPC patients (e.g., median poor mental health days 30 days prior to treatment: urologists=15 days vs oncologists=5 days). Conclusions: Many physicians take into account pre-existing comorbidities and their medications when prescribing nmCRPC treatments. Differences in perceived QOL were observed between physician specialty. These findings highlight the importance of considering therapies that lessen the treatment burden in nmCRPC patients. Research Sponsor: Bayer Pharmaceuticals.

<table>
<thead>
<tr>
<th>Comorbidity</th>
<th>Due to Concomitant Medication</th>
<th>nmCRPC Treatment Dose Change in % of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>27.1%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>28.3%</td>
<td>29.3%</td>
</tr>
<tr>
<td>Urinary Issues</td>
<td>20.5%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Sexual</td>
<td>19.1%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Dysf.</td>
<td>19.1%</td>
<td>14.9%</td>
</tr>
</tbody>
</table>

Physicians reporting treatment change for % of their nmCRPC patients in the past 6 months:

### Poster Session

151

The impact of within-visit and pre-visit decision aids for localized prostate cancer on patient knowledge. First Author: Jon Charles Tilburt, Mayo Clinic, Rochester, MN

Background: Decision aids (DAs) for prostate cancer treatment can improve knowledge and reduce decisional conflict, but the relative effect of pre-visit and within-visit DAs is not known, and effect sizes for minority populations has not been estimated. Methods: We conducted a 3-arm, patient-level-RCT in Specialty-Provided Radiation Oncology Practices in Ohio, South Dakota, and Minnesota. We employed the Health Literacy Measurement Survey and the Explore Decision Aids Survey to evaluate health literacy and the quality of the decision aid, respectively. Medicaid enrollees were included. Patients were randomized to the pre-visit decision aid, the within-visit decision aid, or the usual care control. Results: 103 patients were randomized and 93 completed both visits. The pre-visit decision aid significantly increased knowledge about prostate cancer, with a mean difference of 15 points on the knowledge test (p = 0.001). Conclusions: Pre-visit decision aids can significantly increase knowledge about prostate cancer in a diverse population. Research Sponsor: Raymond Foundation.

152

Patient-centered communication: Collaborative learning and communication strategies for patient and healthcare providers in the new normal of COVID-19. First Author: Martha Ann Raymond, Raymond Foundation, Central Square, NY

Background: Data from the National Cancer Institute’s Surveillance, Epidemiology & End Results (SEER) program estimates in 2020 over 1.8 million new cancer diagnoses will occur. SEER data also indicates that over 15.5 million patients/survivors are currently living with a cancer diagnosis in the United States. Amid COVID-19, positioning care beyond the clinic to minimize exposure for patients and healthcare providers is essential. Now more than ever, new and evolving ways to communicate openly and effectively are crucial for patients and their healthcare team. Methods: March-May 2020 the Raymond Foundation hosted nationwide virtual focus groups and town halls for cancer patients, survivors, and caregivers to gain a better understanding of how COVID-19 is affecting their cancer care, communication with their healthcare team, and shared decision-making. Primary goals included reaching patients in rural (17% of SEER) and community of SEER who were caregivers/primary caregivers of diverse populations. Results: 489 patients, survivors, and caregivers (54% female, 46% male) provided the following insights: 89% reported communication with their healthcare team had deteriorated since the pandemic; 94% indicated the need for increased communication with their healthcare team; 42% had a general knowledge of telehealth while 58% had little to no knowledge; 98% indicated they would like to learn more about telehealth options and would try this advanced class of service if offered by their healthcare team; 64% reported they were not able to accurately communicate treatment adverse effects leading to increased suffering; 96% reported increased isolation and fear of the unknown care landscape. Conclusions: COVID-19 forces the importance of patient-centered communication beyond the clinic to facilitate dialogue and participation in their care. Empowering patients with the skills they require to comprehend and take charge of their care can help minimize patient risk and provide an opportunity for patients to engage with their healthcare teams throughout the cancer continuum. Comprehensive strategies to skillfully serve patients via telemedicine and teleconferencing may be the new normal as we virtually revitalize the classic house call. Research Sponsor: Raymond Foundation.
Baseline cancer worry and tumor marker testing among earlier-stage breast cancer patients participating in a Choosing Wisely pilot. First Author: Karma L. Kreizenbeck, Fred Hutchinson Cancer Research Center, Seattle, WA

Background: We developed a patient-facing video aimed at raising early breast cancer survivors’ adherence to ASCO’s Choosing Wisely recommendation against surveillance tumor marker testing. To understand the impact of the video on cancer worry regarding recurrence, we surveyed breast cancer survivors before and after viewing the video. Methods: Women with stage IIIA breast cancer (N=246) treated at six regional community clinics were surveyed prior to treatment. Treatment-related video (S-WATCH) was made available 2 weeks after follow-up one year later (N=171). Both surveys included the Cancer Worry Scale (CWS; 8-items, 4-point Likert scale). Tumor marker (TM) testing during surveillance was collected for 728 patients and linked to surveys among those who provided consent (N=105). Most women (77%) were white age 50+. Among women who completed both questionnaires (N=153), the average CWS summary score was 17.1 at baseline (range=9-29) and 16.9 at follow-up (p=0.48, range=8-30). Women who did not view the video (A) and those with high baseline cancer worry (B) who viewed the video had similar rates of TM testing (p=0.48) compared to patients with low baseline cancer worry (C) [video viewed the video (3%)].

Cancer worry is highly correlated with the decision to use of TM testing. Viewing an informational video that provided evidence-based advice on follow-up and testing did not impact cancer worry. Enrollment among eligible patients was impacted by challenges to proactively identify and consent patients during their transition to surveillance. Conclusions: Patients with high baseline cancer worry who demonstrated need for TM testing beyond an educational intervention during their transition to surveillance for breast cancer. Research Sponsor: Seattle Cancer Care Alliance, Fred Hutch.

<table>
<thead>
<tr>
<th>Video + baseline questionnaire</th>
<th>Cancer worry</th>
<th>Odds Ratio for TM testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Nonparticipants (N=556)</td>
<td>18.7%</td>
<td>1.48</td>
</tr>
<tr>
<td>(B) High (N=31)</td>
<td>19.4%</td>
<td>1.37</td>
</tr>
<tr>
<td>(C) Low (N=93)</td>
<td>32.0%</td>
<td>0.88</td>
</tr>
</tbody>
</table>

*linkable TM testing + survey data who consented to link (excl. 141 ppts); tupper tercile baseline CWS score (620); lower tercile baseline CWS score (113)

PATIENT EXPERIENCE

Poster Session

154
Leveraging patient-reported outcomes (PROs) in patients with pancreatic cancer: The Pancreatic Cancer Action Network (PanCAN) online patient registry experience. First Author: Arjun Gupta, Sidney Kimmel Comprehensive Cancer Center, Baltimore, MD

Background: By allowing patients (pts) to self-report key issues related to their quality of life and symptoms, PROs have important clinical and research implications. The PanCAN Registry, which began collecting data in July 2015, is a pancreatic cancer-specific global online registry enabling pts to report sociodemographics, disease management characteristics, and PROs via online surveys. We sought to describe pt experiences with the PanCAN Registry and to assess the individual characteristics and methods that impact data collection. Methods: We analyzed survey responses from 3,236 pts who consented to the registry (visits, survey completions, and longitudinal use) from 7/2015-10/2019 for pts who provided permission to use their data. The registry allows pts to complete surveys about their experience (e.g., basics of pancreatic cancer, general information), symptoms (e.g., fatigue, pain), diagnostics (e.g., labs, scans), and drug therapy (e.g., type, frequency). We validated PROs using the PanCAN Know Your Tumor database. For a subset of pts (those with de novo metastatic disease), we compared PROs, treatment patterns, and side effects by age (≥75 years) and treatment site (community or academic). Results: Of 2,836 pts who consented to the registry, 2,076 (73%) completed at least one survey (median age = 64 [range = 18-97], 48% women, 92% white, 32% metastatic disease). Pts most commonly completed the basics (73%), general information (39%), and drug therapy (37%) surveys. Overall, 10% completed surveys longitudinally. We observed 95% concordance between PROs and the PanCAN Know Your Tumor database. Among the 667 pts with de novo metastatic disease, 34% were older (age 65+) and 50% were treated at academic sites. Younger pts were more hopeful about the treatment plan (strongly agree: 24% v 12%, p = 0.001) compared with those treated at community sites. Treatment patterns at academic sites were more aggressive (e.g., chemotherapy, surgery, radiation) than the community setting. During the interview, we observed concordance between pts visiting the PanCAN registry and >70% completing a survey, these findings demonstrate the feasibility, robustness, and research potential of an online PRO registry. We observed important differences by age and treatment site regarding pts’ outcomes, symptoms, treatment patterns, and side effects. With increasing focus on PROs, registries like this can facilitate standardized PRO reporting and monitoring, while also providing a valuable research database. Research Sponsor: PanCAN.

155
Idecabtagene viscvecel (ide-cel, bb2121), a BCMA-directed CAR T cell therapy: Qualitative analyses of pretreatment patient interviews in the KarMMa trial. First Author: Julia Braverman, Bristol Myers Squibb, Princeton, NJ

Background: Outcomes remain poor in triple-class exposed (to an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 antibody) patients (pts) with relapsed and refractory multiple myeloma (RRMM), and there is no standard of care (SOC) for these pts. BCMA-directed CAR T cell therapy, showed deep, durable responses in heavily pretreated RRMM pts in the pivotal phase 2 KarMMa trial (J Clin Oncol 38:2020, Suppl; abstr 8B03). Limited data are available on pts’ experience with prior therapies and expectations on ide-cel. By embedding pt experience during and after ide-cel therapy. Clinical trial information: NCT03361748. Research Sponsor: Bristol-Myers Squibb and bluebird bio.

Conclusions: This qualitative study was conducted in triple-class exposed pts recently diagnosed with multiple myeloma, treated with ide-cel (KarMMa trial). Forty-seven pts (67.7%), and completed at least a bachelor degree (44.7%), were eligible to participate. Older female cancer survivors (n = 171) completed one-time surveys to assess HRQoL (RAND-36), unintentional weight loss, body mass index (BMI), diet quality (Diet History Questionnaire II), and physical activity. Demographic information and registral record data were also collected. Diet History Questionnaire II results were converted to Healthy Eating Index (HEI)-2015 scores. Descriptive analyses, correlations, and stepwise linear regressions were utilized. Results: The majority of the sample (median age = 74.50 [range = 65.00-8.43 years] were white (90%), married (54.7%), breast cancer survivors (67.7%), and completed at least a bachelor’s degree (54.7%). Physical and mental HRQoL of the sample were low; 41.94±10.50 and 48.67±7.18, respectively, out of 100. Physical activity was low; 75.3%, 54.2%, and 68.4% reported no strenuous, moderate, and mild physical activity, respectively. Mean BMI was 27.71±6.24 (overweight), with 64% of the participants being overweight or obese. Mean HEI-2015 scores were 66.54±10.0 out of 100 and below the cutoff score of 80, which represents a “good diet”. Participating in moderate physical activity was associated with higher physiological HRQoL (β = 0.42, p = 0.004). Being older (β = 0.27, p = 0.025), white (β = 0.33, p < 0.001), and having higher HEI scores (β = 0.30, p = 0.001) was associated with higher mental HRQoL.

Conclusions: Older female cancer survivors reported lifestyle challenges including poor diet quality, physical activity, and high rates of being overweight or obese, which were associated with HRQoL. Results indicate the need for tailored health interventions for older female cancer survivors regarding their lifestyle behaviors to improve prognostics and HRQoL. Research Sponsor: None.

Categories:

Poster Session

156
Healthy lifestyle challenges among older female cancer survivors. First Author: Jessica L. Krook-Schoen, Division of Medical Diabetics and Health Sciences, School of Health and Rehabilitation Sciences, The Ohio State University, Columbus, OH

Background: Healthy lifestyles including consuming a healthy diet, being physically active, and maintaining a normal weight can improve prognosis and health-related quality of life (HRQoL) among cancer survivors. The largest proportion of cancer survivors are older adults (≥65 years), yet their lifestyle behaviors are understudied and poorly examined. We examined pts’ initial knowledge of and expectations on ide-cel beyond an educational intervention during their transition to surveillance for breast cancer. Research Sponsor: Seattle Cancer Care Alliance, Fred Hutch.

Conclusions: Most women (77%) were white age 50+. Among women who completed both questionnaires (N=153), the average CWS summary score was 17.1 at baseline (range=9-29) and 16.9 at follow-up (p=0.48, range=8-30). Women who did not view the video (A) and those with high baseline cancer worry (B) who viewed the video had similar rates of TM testing (p=0.48) compared to patients with low baseline cancer worry (C) [video viewed the video (3%)].

Cancer worry is highly correlated with the decision to use of TM testing. Viewing an informational video that provided evidence-based advice on follow-up and testing did not impact cancer worry. Enrollment among eligible patients was impacted by challenges to proactively identify and consent patients during their transition to surveillance. Conclusions: Patients with high baseline cancer worry who demonstrated need for TM testing beyond an educational intervention during their transition to surveillance for breast cancer. Research Sponsor: Seattle Cancer Care Alliance, Fred Hutch.

<table>
<thead>
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<th>Cancer worry</th>
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<td>(C) Low (N=93)</td>
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</tr>
</tbody>
</table>

*linkable TM testing + survey data who consented to link (excl. 141 ppts); tupper tercile baseline CWS score (620); lower tercile baseline CWS score (113)

Potential efficacy

No. of pts

Ide-cel has potential for long-term or complete remission

Past treatment did not work/stopped working

Potential effects

Lower side effect burden than other treatments

Avoids chemotherapy side effects

*Forty-five pts were asked about their perspectives on ide-cel vs previous treatments.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Conclusions: HROQL in pts with GBM receiving IL treatment is poor. Functioning domain scores represent a positive screen for depression, and comorbidities. We used re-
gression models to explore relationships among PROs and clinical outcomes

Patient-reported number of comorbidities was associated with shorter time to
clinical outcomes. Higher baseline QOL was only associated with lower risk of
readmission (HR = 1.49, p = .03) and higher risk of complications (OR = 1.70, P =

Older adults with GI cancer often experience poor surgical outcomes. yet little is known about their PROs, such as physical function, quality of life (QOL), and physical and psychological symptom burden. Methods: As part of a randomized trial of perioperative geriatric care, we provided geriatric assessments age 65+ to adults with GI cancer planning surgical resection. We asked patients preoperatively to self-report their physical function (activities of daily living [ADLs] and instrumental ADLs [IADLS]), QOL (EORTC QLQ-C30), symptom burden (Edmonton Symptom Assessment System [ESAS]), QOL (EORTC QLQ-C30), and IADLS). We included patients age 65+ undergoing planned surgical procedures. We used regression models to explore relationships among PROs and clinical outcomes (receiving planned surgery, postoperative complications [Clavien-Dindo], QOL, and physical and psychological symptom burden). We attempted to identify demographic, socioeconomic and disease factors that predict for a positive patient experience. Methods: Responses were collected from 41 individual cancer centers between Jan 2017 and Dec 2018 as part of a longitudinal prospective experience. Multivariable logistic regression was conducted for each of the 25 items. Results: Demographic are described in Table. Values (OR=1, p<0.020) and in 13% of all the analyzed clinical trials) reported the results of health related QoL. The results were consistent across all subtypes of hematological malignancies and were similar regardless of the studied primary endpoint. Conclusions: QoL measures are under studied in clinical trials of hematological malignancies. Studies that measured health related QoL didn't report the results in more than half of the time. Although results may be reported in separate future publications, improvement in assessing and reporting of QoL will help to incorporate QoL measures in patient care and therapy choice decision. Research Sponsor: None.

<table>
<thead>
<tr>
<th>Disease</th>
<th>All Patients (n=41,298)</th>
<th>Significant Positive Items (x/25)</th>
<th>Significant Negative Items (x/25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease Site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain</td>
<td>53</td>
<td></td>
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<tr>
<td>CNS</td>
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<tr>
<td>GI</td>
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<td>GU</td>
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<tr>
<td>Heme</td>
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<td>H&amp;N</td>
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<tr>
<td>Lung</td>
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<td>Other</td>
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<td>Skin</td>
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<td>Sex</td>
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<td>Last Visit</td>
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<td>Ultrasound</td>
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<td>Last Visit</td>
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</table>

Conclusions: Older adults with GI cancer often have baseline functional limitations and a high symptom burden, all of which are associated with worse clinical outcomes. Further work should study whether addressing preoperative PROs could improve older patients' surgical outcomes. Clinical trial information: NCT02816052. Research Sponsor: NCCN Foundation Young Investigator Award.

Poster Session

Assessment and reporting of quality-of-life measures in pivotal clinical trials of hematological malignancies.
First Author: Samer Al Hadidi, Baylor College of Medicine, Houston, TX

Background: The importance of assessment and reporting of health related quality of life (QoL) has been increasingly recognized in the field of oncology. QoL measures, reflecting patient’s perceived benefits and satisfaction, might be especially important in hematological malignancies clinical trials, where the intervention may not result in cure with modest overall survival benefit. Methods: Data on health related QoL were obtained from studies’ protocols and product labeling available publicly at Drugs@FDA. Drugs approved from 2016 to 2020 were analyzed. On the basis of publicly available study protocols and Food and Drug Administration (FDA) reviews, the authors reviewed the assessment of health related QoL in 53 clinical trials supporting 50 drug approvals from 2016 to 2020. Those trials resulted in approval of medications to treat leukemia, non-Hodgkin lymphoma, Hodgkin lymphoma, myeloproliferative syndrome, and multiple myeloma. Results: A total of 14,819 patients were assessed in the 5 year period after exclusion of unpublished studies. We calculated the frequency of assessment of health related QoL and if QoL measures were reported in the subsequent publications. After exclusion of 7 un-
published studies, we analyzed 46 clinical trials for reporting of HROQL. Thirty percent of the protocols included assessment of health related QoL with only 43% of them (13% of all the analyzed clinical trials) reported the results of health related QoL. The results were consistent across all subtypes of hematological malignancies and were similar regardless of the studied primary endpoint. Conclusions: QoL measures are under studied in clinical trials of hematological malignancies. Studies that measured health related QoL didn’t report the results in more than half of the time. Although results may be reported in separate future publications, improvement in assessing and reporting of QoL will help to incorporate QoL measures in patient care and therapy choice decision. Research Sponsor: None.

Summary of pivotal studies and reporting of HROQL in hematological malignancies.

Poster Session

Patient-reported outcomes (PROs) in older adults with gastrointestinal (GI) cancer undergoing surgery.
First Author: Helen Perry Knight, Brigham and Women's Hospital, Boston, MA

Background: Older adults with GI cancer often experience poor surgical outcomes, yet little is known about their PROs, such as physical function, quality of life (QOL), and physical and psychological symptom burden. Methods: As part of a randomized trial of perioperative geriatric care, we provided geriatric assessments age 65+ to adults with GI cancer planning surgical resection. We asked patients preoperatively to self-report their physical function (activities of daily living [ADLs] and instrumental ADLs [IADLS]), QOL (EORTC QLQ-C30), symptom burden (Edmonton Symptom Assessment System [ESAS]), QOL (EORTC QLQ-C30), and IADLS). We included patients age 65+ undergoing planned surgical procedures. We used regression models to explore relationships among PROs and clinical outcomes (receiving planned surgery, postoperative complications [Clavien-Dindo], QOL, and physical and psychological symptom burden). We attempted to identify demographic, socioeconomic and disease factors that predict for a positive patient experience. Methods: Responses were collected from 41 individual cancer centers between Jan 2017 and Dec 2018 as part of a longitudinal prospective experience. Multivariable logistic regression was conducted for each of the 25 items. Results: Demographic are described in Table. Values (OR=1, p<0.020) and in 13% of all the analyzed clinical trials) reported the results of health related QoL. The results were consistent across all subtypes of hematological malignancies and were similar regardless of the studied primary endpoint. Conclusions: QoL measures are under studied in clinical trials of hematological malignancies. Studies that measured health related QoL didn’t report the results in more than half of the time. Although results may be reported in separate future publications, improvement in assessing and reporting of QoL will help to incorporate QoL measures in patient care and therapy choice decision. Research Sponsor: None.

Poster Session

Demographic, socioeconomic, and clinical factors associated with oncology patient experience in the Ontario cancer system.
First Author: Mary Mahler, Department of Medicine, University of Toronto, Toronto, ON, Canada

Background: Your Voice Matters (YVM) is an electronic real time Patient-Reported Experience Measure (PREM) collected on all patients accessing cancer services in Ontario by Cancer Care Ontario/Ontario Health. To our knowledge, this is the largest oncology PREM database worldwide. A total of 25 Items are assessed including care coordination, wait times, access to care and healthcare providers. We attempted to identify demographic, socioeconomic and disease factors that predict for a positive patient experience. Methods: Responses were collected from 41 individual cancer centers between Jan 2017 and Dec 2018 as part of a longitudinal prospective experience. Multivariable logistic regression was conducted for each of the 25 items. Results: Demographic are described in Table. Values (OR=1, p<0.020) and in 13% of all the analyzed clinical trials) reported the results of health related QoL. The results were consistent across all subtypes of hematological malignancies and were similar regardless of the studied primary endpoint. Conclusions: QoL measures are under studied in clinical trials of hematological malignancies. Studies that measured health related QoL didn’t report the results in more than half of the time. Although results may be reported in separate future publications, improvement in assessing and reporting of QoL will help to incorporate QoL measures in patient care and therapy choice decision. Research Sponsor: None.
Evaluating risk characteristics for patients who die within 30 days of hospitalization. First Author: Christine Kurian, Thomas Jefferson University, Philadelphia, PA

Background: Advanced cancer patients often receive aggressive end of life care despite questionable benefit. As a result, there are ongoing efforts to improve end of life care and coordinate palliative care supportive services. This study is part of a previous, well-performed descriptive data in a population of oncology patients who died within 30 days of admission. Here, we compare patients who died within 30 days of admission against those who survived to evaluate differences in patient characteristics and healthcare utilization. Methods: Adult oncology patients who were admitted from 10/1/2018-3/30/2019 at an academic medical center were evaluated. Two groups of patients were studied: oncology patients who died within thirty days of admission and those who survived. The patients were selected using ICD-10 codes, EMR systems support, and manual chart review. Additionally, we examined demographic (i.e. gender, ethnicity, cancer diagnosis) and clinical characteristics (i.e. level of care, code status, previous palliative care consult, palliative care consult in the hospital, nutrition status, clinical trial status, advance care planning, hospice enrollment). Statistical analysis included chi-squared and ANOVA tests, and logistic regression models.

Results: A total of 267 patients were included in the analysis. For all patients in the study, 38% had a change in code status during their admission, 26% of patients had palliative care involvement and 23% were known to palliative care prior to admission. Twenty three percent spent the duration of their admission in the ICU for their end of life care. Significant mortality-level variation was found compared to overall mean number of admissions for the past 6 months (ANOVA F=25.3, p<0.0001). We conducted a logistic regression and adjusted for ethnicity, number of admits in the last 6 months, and length of stay to identify the outcome of patients who died within 30 days of admission vs. those who did not. Factors associated with increased odds of mortality included the number of admits in the last 6 months (OR 1.753, 95% CI: 1.397-2.200). Length of stay did not increase one’s odds for mortality (OR 0.989, 95% CI: 0.965-1.014). Conclusions: Low utilization of palliative care and advanced care planning was seen widely in both populations. Previous hospitalization within the last 6 months was a predictor of mortality in this patient population. Research Sponsor: None.

162 Poster Session Patient-reported outcomes in routine oncology care: Perceptions, execution, and barriers. First Author: Ajeet Gajra, Cardinal Health, Dublin, OH

Background: There has been an increased emphasis on patient-reported outcomes (PROs) in recent oncology trials, and the benefits of incorporating PRO assessments during routine care have been established. The aim of the present study was to assess the perceptions, adoption and barriers to implementation of PROs in community practices during routine care. Methods: A live meeting in September 2019 surveyed US-based community oncology health care providers (HCPs), including medical oncologists/PACT consortia (PACT consortiums defined as any health care provider including nurses, practitioners and physician assistants) regarding their perceptions of PROs and their adoption of PROs during routine patient care. Participants completed both a web-based pre-meeting survey and live queries captured via audience response system. Results were summarized using descriptive statistics. Results: 71 HCPs (51 medical oncologists/hematologists and 20 APPs) participated. HCPs described their practices as: urban: 50%, suburban: 37%, and rural: 13%. Over 80% reported having collected PRO data from their patients. Over 90% indicated that PROs are important to guide their treatment of patients, irrespective of the data sources (clinical studies or in real-world). Commonly collected PRO data included disease symptoms (66%), activities of daily living (62%), physical function (61%) and adverse events (59%). The NCCN Distress Thermometer (41%) was reported as the most common PRO instrument used during routine oncology care (Table). Despite understanding the importance of implementing PROs, 54% indicated that more resources (software and incentive systems) are needed, and 53% said that discussing PRO results with each patient is critical to facilitate the collection and utilization of PRO data. 84% were unaware of results of a seminal study which dem-onstrated that PROs improve quality of life and survival (Bash et al 2016, 2017). Conclusions: Most of the community oncology providers surveyed collected PRO data and acknowledged its value. However, more resources are needed to increase PRO use in oncology during routine care and education directed towards community oncology practitioners is needed to highlight the value that PROs can add in cancer care. Research Sponsor: Cardinal Health.

163 Poster Session Capturing the financial hardship of cancer in military adolescent and young adult patients: A conceptual framework. First Author: Christabel K. Cheung, 525 W. Redwood St., Baltimore, MD

Background: Cancer can be a setback for young active-duty military patients, with potential implications for their financial well-being, early career paths, and healthcare utilization. To date, there is a lack of research focused on financial hardship following a cancer diagnosis, within these social and environmental contexts. Research Sponsor: None.

Conclusions: Differentiating individual experiences of financial hardship following a cancer diagnosis occur can be a barrier for health systems to address. Programs that directly engage patients, including electronic tracking of patient-reported outcomes (ePROs) can improve symptom control and decrease the need for acute care. Previous ePRO programs have relied on third party vendors with limited EHR integration, constraining their clinical utility and scalability. An integrated solution could offer distinct advantages. Methods: As part of NCI’s Moonshot PRoCT consortia, we developed a multi-dimensional symptom management program (eSyM) based on the PRO-CTCAE questionnaires that is fully integrated into the EHR. The agile, user-centered design process engaged patients, clinicians, and institutions. The core functional components include: 1) symptom surveys in the postoperative period or between chemotherapy visits, 2) self-management tip sheets, 3) clinician alerts, and 4) dashboards for population management. Critical points of integration with supporting EHR functions and workflow impacts were identified; and major challenges of integration and implementation were described. Results: eSyM, which was implemented at two health systems (Baptist Memorial in Tennessee and Memphis and West Virginia University Health) in the fall of 2019, required multiple supporting EHR functions: 1) access a secure, HIPAA-compliant patient ePROs in an EHR, which may be particularly challenging for patient who are managed across health systems and EHRs; 2) record diagsnosis, procedure and chemotherapy treatment plan data; 3) define and target populations and track metrics/events; 4) define and execute autonomous logic-based workflow rules; 5) generate reports for clinicians/patients; and 6) leverage EHR data to support clinical decision making. Conclusions: The eSyM build leveraged many existing EHR capabilities and features to overcome hurdle, but it required design and workflow compromise. Integration of ePRO-based symptom management programs into the EHR could help overcome barriers, consolidate clinical workflows, and foster sustainable sustainability. Research Sponsor: U.S. National Institutes of Health.
ABSTRACT WITHDRAWN
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Poster Session
Using machine learning to identify older adults at high risk for hospitalization and mortality via the Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE). First Author: Huiven Xu, University of Rochester Medical Center, Rochester, NY
Background: PRO-CTCAE captures symptomatic adverse events (e.g., pain, fatigue) and may indicate poor treatment tolerability in older patients (pts) with advanced cancer. Using unsupervised machine learning within a large unknown patient dataset, we aimed to evaluate if clusters identified based on PRO-CTCAE severity were associated with hospitalization and mortality.
Methods: We included pts randomized to the control arm of GAP 70+ (URCC 13003) trial which enrolled pts aged ≥70, with incurable cancer (lung, lymphoma, and/or geriatric assessment (GA) domain impairment starting a new treatment regimen. Measures included 24 PRO-CTCAE items (v1.0) with severity attributes (0-4; total score 0-96, higher score = greater severity). The unsupervised algorithm (K-means with Euclidean Distance) clustered pts at baseline based on similarities of severities of the 24 items. We examined if the clusters were associated with treatment-related hospitalization within 3 months and lower survival at 6 months using Logistic and Cox regressions.
Results: Of the 369 control pts, 366 completed GA and PRO-CTCAE at baseline (mean age 77.2, 94.3% white, 30.9% with GI and 31.4% with lung cancer; mean number of impaired GA 4.4). By PRO-CTCAE, the most prevalent symptoms were fatigue (82.7%), pain (60.9%), and decreased appetite (58.7%). Greater GA impairment was associated with 20 PRO-CTCAE items (fatigue, pain, and decreased appetite having the strongest association; all Pearson’s r > 0.33). Three clusters were identified: Low Symmetry (51.4%); Moderate Symmetry (34.4%), and High Symmetry (14.2%). Mean total severity score was 6.9 (low), 16.9 (moderate), and 28.7 (high), respectively (p < 0.01). No difference in demographics was found among clusters. Percent of pts hospitalized were 21.3% (low), 36.5% (moderate), and 38.5% (high) (p < 0.01); survival rates were 81.9% (low), 71.4% (moderate), and 55.3% (high) (p < 0.01). Controlling for cancer type and GA, compared to pts in Low Symmetry cluster, pts in Moderate and High Symmetry were more likely to be hospitalized and die, as well as be separated into the strongest and second strongest groups, respectively (odds ratio = 1.77; p = 0.033). pts in High Symmetry cluster were more likely to die (hazard ratio = 2.23, p = 0.01). Conclusions: Unsupervised machine learning was able to partition pts into different PRO-CTCAE severity clusters; pts with higher baseline severity were more likely to be hospitalized or die. PRO-CTCAE provides additional information to GA. Funding: R01CA177592, U01CA233167, and U10CA189961.
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Poster Session
Influence in hospitalized cancer patients: A propensity score matching analysis. First Author: Jianli Li, Peking Union Medical College Hospital, Beijing, China
Background: Cancer patients are vulnerable to influenza viruses and are at great risk of developing related complications. However, few studies have assessed the impact of influenza infection among hospitalized cancer patients in China. Using a national sample of inpatient hospitalizations from National Inpatient Sample between 2012 and 2014. A 1:1 propensity score matching analysis was conducted to compare the clinical outcomes between hospitalized cancer patients with and without influenza.
Methods: We identified cancer-related hospitalizations from the National Inpatient Sample database by linking unique patient identifiers across years and adjusting for patient-level covariates using ICD-9-CM codes at discharge. Matched analyses were conducted using a flexible propensity score model and the nearest-neighbor matching algorithm.
Results: We identified 13,186,849 cancer-related hospitalizations, and 47,850 of them (0.36%) had a concomitant diagnosis of influenza. After propensity score matching, cancer patients with influenza had a higher mortality (5.4% vs. 4.2%; odds ratio [OR]: 1.3; 95% confidence interval [CI], 1.13 to 1.49; P < 0.001), longer length of stay (6.3 vs. 5.6 days; P < 0.001) but lower costs (146,059.9 vs. 146,255.5 dollars; P = 0.001) in hospital than those without influenza. In addition, patients with influenza had a higher incidence of pneumonia (18.4% vs. 13.2%; OR, 1.49; 95% CI, 1.37 to 1.62; P < 0.001), neutropenia (7.1% vs. 3.4%; OR, 2.18; 95% CI, 1.91 to 2.50; P < 0.001), dehydration (14.8% vs. 8.8%; OR, 1.80; 95% CI, 1.65 to 1.97; P < 0.001), and acute kidney injury (19.9% vs. 17.6%; OR, 1.16; 95% CI, 1.08 to 1.25; P < 0.001) than those without influenza. Conclusions: Influenza is associated with worse clinical outcomes among hospitalized cancer patients. Influenza vaccination is recommended in this population. Research Sponsor: This work was supported by grants from the National Natural Science Foundation of China (No. 61435001) and the CAMS Innovation Fund for Medical Sciences (No.2016-2M-1001, No. 2017-2M-4-003).

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Poster Session
Machine learning to classify clinically meaningful patient groups by ESAS symptom clusters in oropharyngeal cancer patients undergoing initial treatment. First Author: Ghazal Haddad, Faculty of Medicine, University of Toronto, Toronto, ON, Canada
Background: Cancer patients often experience symptoms in clusters, which could contribute to patient outcomes and quality of life; yet most analyses describe only individual symptom scores or a summation of symptom scores rather than the natural clustering of symptoms. We compared machine learning-based methods for grouping patients by symptoms in a heavy symptom burden patient population: oropharyngeal cancer patients undergoing initial treatment with radiation or chemoradiation (C/RT). Methods: K-means clustering was compared to more traditional statistical methods (i.e., hypothesis-testing) used to quantify and categorize by clinico-demographic features) for classifying patients based on Edmonton Symptom Assessment System (ESAS) symptom scores in newly diagnosed oropharyngeal cancer patients before and after C/RT initiation. Results: 278 patients were classified into 3 K-means groups at each of two timepoints: pre-C/RT and post-C/RT. These groupings were formed primarily based on differences by symptom burden and were thus labeled: low, moderate, and high symptom-burden patient groups. The table shows dynamic change as patients moved from group to group during C/RT treatment. Greatest symptom burdens in pre-C/RT patients were anxiety and tiredness; in post-C/RT, poor appetite and tiredness. Chi-squared residuals attributed being female (residuals of -1.95 for low, -2.46 for moderate, and -2.41 for high burden) and HPV-negative cancer (residuals of -1.48, -0.52, and 2.57, respectively) to being associated with higher symptom burden pre-C/RT; no clinico-demographic characteristics were associated with high symptom burden post-C/RT, suggesting this was a previously unidentified patient group. Although separation into K-means clusters in this population was primarily related to symptom burden, K-means better identified the number of patient groups and classified patients at the boundaries between groups (involving up to a quarter of patients) when compared to traditional statistical methods. Conclusions: Machine learning clustering analysis separated patients into discrete groups by symptom burden. K-means provided an objective means for clustering patients in a clinically-meaningful way when compared to traditional statistical methods for grouping patients. Research Sponsor: McLaughlin Scholarship at the University of Toronto.

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Poster Session
Electronic patient-reported outcomes (ePRO) platform engagement in cancer patients during COVID-19. First Author: Susan A Frailley, Tennessee Oncology, Nashville, TN
Background: Tennessee Oncology partnered with an ePRO platform solution to support patients during their cancer care journey. This cloud-based ePRO platform was designed to assist in improving the management of symptoms. Providing two core pieces of functionality allow both the patient and care team to track symptoms, and access their health records via website or mobile app. The clinician portal provides multiple care teams the ability to manage and prioritize patient needs as well as communicate directly with patients. In March 2020, due to the pandemic, patients needed a convenient and remote way to communicate with the care team. Our communication plan had to be nimble and provide immediate updates to our large patient population. We leveraged our ePRO platform to meet this need. Methods: We focused efforts on increasing patient engagement by educating them on the benefits of this communication platform. We utilized secure messaging to send appointment details and for Teleheath visits a link to the visit was sent. We were able to provide weekly updates outlining our latest information regarding our safety protocols. Results: We noted an increase in the activation of patient accounts and patient-initiated messages in our ePRO platform. We saw an average of 1,000 new patient accounts activated each month during March, April and May. We saw that patient-initiated messages through the platform showed a 15% increase from February to March. The response rate for patients completing post-treatment questionnaires increased 8% from February to May. Conclusions: By providing patients with a single communication platform to contact their care teams outside of their office visits, patients become an active part of their care journey. As an organization, we continue to identify ways to connect our patients to their care team in a meaningful way through technology. Whether during normal business hours or after-hours, patients need a simple, reliable and consistent way to engage with their care team. Research Sponsor: None.
Patterns of physical and mental health well-being in older female cancer survivors. First Author: Audrey M Sigmund, Divisions of Hematology and Medical Oncology, Department of Internal Medicine, The Ohio State University Comprehensive Cancer Center/The James Cancer Hospital & Solove Research Institute, Columbus, OH

Background: The majority of cancer survivors are older adults (>65 years), but their lifestyle behaviors are understudied. Factors associated with improved physical and mental well-being in older female cancer survivors are not well understood. The objective of this study was to evaluate the factors associated with physical and mental well-being in older female cancer survivors, including the role of malnutrition, physical activity, and level of emotional support. Methods: Older female cancer survivors (n=171) completed surveys to assess health related quality of life (HRQoL) using SF-36, malnutrition screening tool (MST), and physical activity. Demographics were also collected. The data was analyzed using descriptive analyses, correlations, and ANCOVAs. Survivors were divided into four phenotypes for analysis using the SF-36 physical and mental composite scores (PCS; MCS) stratified based on the sample’s mean scores (Table). Factors associated with the four groups were assessed including demographic characteristics, cancer type, level of emotional support, risk for malnutrition, and physical activity.

Results: The majority of the cohort (mean age=74.5 years) were white and highly educated. 68.4% were breast cancer survivors, with 10.5% hemolytic anemia survivors, 5.3% gynecologic malignancy survivors, and 15.8% other. Mean PCS and MCS were 41.94 and 48.47, respectively, comparable to general older adult population means. When divided into four groups based on PCS/MCS, there were no significant differences by demographic characteristics or cancer type. Survivors with higher emotional support scores had significantly higher PCS/MCS scores (p<0.001). There was also a significant difference in risk for malnutrition, as those with high PCS/MCS were at lower risk for malnutrition (p=0.001). Survivors with high PCS/MCS entail in less moderate exercise as compared to those with high PCS/MCS (p=0.028).

Conclusions: This study suggests that lower risk for malnutrition as well as higher levels of emotional support are associated with higher physical and mental well-being in older female cancer survivors. These are two potential modifiable targets for interventional studies to optimize physical and mental well-being among older cancer survivors. Research Sponsor: None.

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Poster Session

Patient self-reported awareness of COVID: Overconfidence in knowledge, underestimate of risk. First Author: Ruth Kieran, St. James’s Hospital, Dublin, Ireland

Background: Oncology patients have had to adapt to minimize the risks of contracting COVID-19. We assessed patient knowledge of COVID, and the impact of the pandemic on their behaviours, concerns and healthcare experiences. Methods: A cross-sectional mixed-methods evaluation of patient education/quality and risk of COVID outcomes. Results: Following ethical approval, a 16 page survey was distributed to 120 oncology patients attending the day unit of a tertiary Irish cancer center for systemic anti-cancer therapy (May/June 2020). The Irish COVID rate during this period was 33.8 new cases/day (pop. 4.9 million). Results: 101 responses were received. Cancer types included breast (19%), gastrointestinal (29%), head and neck (11%), and lung (33%). 31% had been tested for COVID; just 1 patient was positive. 100% were aware of advice to “cocoon” and reported good understanding of this. 75% reported complete compliance, but of those, 73% were not social-distance within their homes, 22% received visitors, and 36% continued to shop in-store; of these, 42% shopped as/more often than pre-COVID. Of the 51 patients regularly shopping, many were not using risk-reduction strategies e.g. social distancing (22%), mask-wearing (20%), using “priority shopping” hours (31%), avoiding public transport (26%). 94% felt confident/very confident in recognizing COVID symptoms, but 66% did not recognize two or more key symptoms from a list of 10, most frequently aches/pains (58%), fatigue (55%), altered smell/taste (33%) and dyspnea (64%). The number recognized did not correlate with confidence (p = 0.9) or desire for more information about COVID (p = 0.9). 40% did not feel they were at higher risk of contracting COVID, while 15% thought they were no more likely to be infected than an average person if infected. Many did not know that chemotherapy, steroids, radiation, and immunotherapy can impact morbidity/mortality in COVID (31%, 70%, 44% and 49% respectively). 46% were somewhat/very fearful of COVID, but this did not strongly predict for either protective (e.g. mask-wearing; OR 0.8, 95% CI 0.3-1.9 p = 0.3) or risk behaviors (e.g. continuing to shop frequently; OR 0.5, 95% CI 0.1-1.4 p = 0.2). 66% would like more cancer specific information, particularly about prevention (45%) and symptoms (33%), with a preference for written information (74%). Conclusions: Despite self-reported confidence in knowledge, patients’ self-assessment of their risk category and the preventative strategies they should use may be inaccurate. Increased education about risk, cocooning and symptom recognition is necessary. Research Sponsor: None.

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Poster Session

Associations between perceptions of care experiences and receipt of mental health care among older adults with cancer. First Author: Lisa M Lines, University of Massachusetts Medical School, Worcester, MA

Background: Older adults with cancer and worse self-rated mental health report worse care experiences. We hypothesized that, controlling for health and demographic characteristics, older adults with cancer who received care for anxiety or mood disorders would report better care experiences. Methods: We used AHPS to identify 22,823 cancer inpatient, outpatient, home health, physician, and prescription drug claims for anxiety or mood disorders in 10,403 cancer survivors. Cancer types included breast (19%), gastrointestinal (29%), head and neck (11%), and lung (33%). To identify utilization for anxiety/mood disorders would report better care experiences. Analysis: We estimated linear regression models and also used a Bayesian Model Averaging approach, adjusting for standard case-mix adjusters (including sociodemographics and self-reported general health and mental health status (MHS)) and other characteristics, including cancer site and stage at diagnosis. We also included interaction terms between mental health care utilization and MHS. Results: Approximately 22% of the overall sample (n = 4,998) had both cancer and a claim for an anxiety or mood disorder, and of those individuals, 18% reported fair/poor MHS. Only 7% of those in the cancer-only cohort: reported fair/poor MHS. Before adjusting for mental health utilization, worse MHS was significantly associated with worse experience of care. After accounting for anxiety/mood disorder-related utilization, linear regression models showed no significant associations between fair/poor MHS and worse care experiences, while Bayesian models found that reliable associations remained between worse MHS and lower global ratings of Overall Care and Specialist. Conclusions: Utilization of anxiety/mood disorders mediates the association between MHS and other characteristics, including cancer site and stage at diagnosis. We also included interaction terms between mental health care utilization and MHS. Results: Approximately 22% of the overall sample (n = 4,998) had both cancer and a claim for an anxiety or mood disorder, and of those individuals, 18% reported fair/poor MHS. Only 7% of those in the cancer-only cohort: reported fair/poor MHS. Before adjusting for mental health utilization, worse MHS was significantly associated with worse experience of care. After accounting for anxiety/mood disorder-related utilization, linear regression models showed no significant associations between fair/poor MHS and worse care experiences, while Bayesian models found that reliable associations remained between worse MHS and lower global ratings of Overall Care and Specialist. Conclusions: Utilization of anxiety/mood disorders mediates the association between MHS and other characteristics, including cancer site and stage at diagnosis. Research Sponsor: U.S. National Institutes of Health.

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Poster Session

Initial pilot testing of a smartphone app for detection of chemotherapy-induced peripheral neuropathy. First Author: Daniel Louis Hertz, University of Michigan College of Pharmacy, Ann Arbor, MI

Background: Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect that manifests in the hands or feet primarily as numbness or tingling but can also have motor or painful components. CIPN monitoring is typically conducted by patients self-reporting symptoms during appointments or via questionnaires. Objective CIPN testing may improve early detection but is not typical during treatment, perhaps due to the need for specialized equipment and personnel. The objective of this pilot study was to conduct initial testing of a smartphone app that collects patient-reported and objective CIPN data. Methods: NeuroDetect (available at https://cipn20.thatappisnot.com) is an app-based functional assessments tool, mhealthtools and pdkit. The results of the functional assessments for NeuroDetect V2.0 to test CIPN detection in a longitudinal study of patients undergoing neurotoxic chemotherapy. Research Sponsor: None.
Associations of care experiences with survival among people with cancer in SEER-CAHPS, 2006 to 2017. First Author: Lisa Dimartino, RTI International, Research Triangle Park, NC

Background: A growing body of literature indicates associations between cancer care experiences and survival. Several studies suggest people with cancer who report worse care experiences have greater mortality. However, studies in diverse patient populations have found worse care experiences are associated with lower mortality. To our knowledge, no study has evaluated the relationship between care experiences and survival using a large, nationally representative sample of cancer patients. Methods: We linked SEER cancer registry-Consumer Assessment of Healthcare Providers and Systems (CAHPS) data to identify people diagnosed 8/2006-12/2013 with one of the ten top solid tumor cancer sites with the highest mortality rates among those over age 65 (lung, colon, prostate, pancreas, breast, bladder, ovary, esophagus, kidney, or liver cancers). We included people who completed a survey between 6-24 months post-diagnosis and were continuously enrolled in Medicare A & B from >6 months pre-diagnosis through survey completion. CAHPS outcomes were ratings of Overall Care, Specialist Physician, Health Plan, and Prescription Drug Plan (PDP) and composite scores of Getting Needed Care. We used survey-weighted Cox proportional hazard models to compare those who gave lower (0-6) vs higher ratings (9-10), and lower (0-89) vs higher (90-100) scores. Results: We identified 2,403 eligible people. Mean survival was 46 months and 26% died by 5 years after diagnosis. In unadjusted models, lower Overall Care ratings were significantly associated with higher mortality (HR=1.25, p<0.04), but this did not persist in the adjusted model. In contrast, lower ratings of PDP were significantly associated with lower mortality after covariate adjustment (HR=1.34, p=0.01). Conclusions: Except for PDP, survival was similar among those with worse vs better care experiences. People with better cancer prognoses may perceive worse services from their PDP compared to those with poorer prognoses. Future research examining mechanisms underlying this association may be warranted. Research Sponsor: U.S. National Institutes of Health.

<table>
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<th>Variable</th>
<th>Hazard Ratio</th>
<th>95% Confidence Interval</th>
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<td>PDP rating 0-6 (ref = 9-10)</td>
<td>1.86</td>
<td>1.22 - 2.82</td>
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<td>General health status: fair/poor</td>
<td>3.68</td>
<td>1.59 - 8.53</td>
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<td>NCI Comorbidity Index</td>
<td>1.12</td>
<td>0.84 - 1.49</td>
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<tr>
<td>Cancer stage: distant</td>
<td>2.09</td>
<td>1.36 - 3.20</td>
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<tr>
<td>Cancer stage: unknown</td>
<td>5.46</td>
<td>1.96 - 15.20</td>
</tr>
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*Model also adjusted for survey year, demographics, healthcare utilization, and cancer site.* p≤0.05

An independent oncology second opinion program: 2020 pilot project. First Author: Philip D. Leming, Cincinnati Cancer Advisors, Cincinnati, OH

Background: The estimated number of new cancer cases in the United States in 2020 is 1.8 million with an estimated 606,000 deaths. The science and technology of oncology has dramatically increased in recent years. EMR demands, RVU reimbursements, restriction of time/visit demanded by systems, bureaucratic hurdles, and physician burnout has resulted in reduced patient satisfaction. A pilot project was established to determine if a fully funded oncology second opinion consult program would be feasible and have value to patients/families and their physicians. Methods: Planning started December 2019 for an independent oncology second opinion program that was cost to the patient and funded by The Cincinnati Cancer Foundation. The first patient was seen January, 2020. Two hours of face to face or teleconference time was spent with the patient and family including a comprehensive history and physical in face to face cases. After the initial consultation, a comprehensive written report and case data review was completed. A phone call was made to the treating physician to discuss the case and recommendations. A one-time follow-up was offered to the patient where recommendations were reviewed and the patient answered questions. Surveyed were sent to the patient and their treating physicians for real-time feedback. Results: From 1/2/2020 to 6/1/2020, 70 patients were seen in consultation from 12 different hospital systems with 29 different diagnoses. 4% (3) of consultations were done by video conferencing and 96% (67) were done in person. 54% (36/67) of patient surveys were returned. The overall value of the consultation (1-5 scale with 5 being the best) to the patient was: 97% (35)-5, 3% (3)-4, 20.5% (18/88) of physician surveys were returned. The overall value of the consultation to the physician was: 83% (15)-5, 12% (3)-4, 7% (3)-3. Of the 70 patients, the amount of change in the patient's plan of care due to the consultation was: None 28.5% (20), Small 30% (35), Moderate 18.5% (13), Significant 3% (2). Conclusions: Our findings establish the feasibility of a comprehensive second opinion service in cancer. The feedback and survey data support the value and acceptance of the independent oncology second opinion consultation program to both patients and referring physicians. Research Sponsor: The Cincinnati Cancer Foundation.

Poster Session

Perceptions of care coordination among older adult cancer survivors: A SEER-CAHPS study. First Author: Michelle Mollica, National Cancer Institute, Bethesda, MD

Background: Care coordination represents deliberate efforts to harmonize and organize patient care activities. This study examined sociodemographic and clinical predictors of patient-reported care coordination among Medicare beneficiaries older than 65 with a history of cancer. Methods: This study utilized the Surveillance, Epidemiology, and End Results-Consumer Assessment of Healthcare Providers and Systems (SEER-CAHPS) linked data, including SEER cancer registry data, Medicare CAHPS patient experience surveys, and Medicare claims. We identified Medicare beneficiaries who completed a CAHPS survey within ten years after their most recent cancer diagnosis and reported visiting a personal doctor within six months before their survey (n = 14,646). Multivariable regression models examined associations between cancer survivor characteristics and care coordination, with higher scores indicating better coordination (scale of 0-100). Results: Residing in a rural area at time of diagnosis (1.2-points greater score than urban; p = 0.04) and reporting > 4 visits with a personal doctor within 6 months (3.0-points greater than 1-2 visits; p = 0.001) were significantly associated with higher care coordination scores. Older age (p < 0.001) and seeing more specialists (p = 0.006) were associated with significantly lower care coordination scores. Patients with melanoma (women: 5.2-point difference, p < 0.001; men: 2.8 points, p = 0.03) and breast cancer (women: 2.4 points; p < 0.001) also reported significantly lower care coordination scores than did men with prostate cancer (reference group). Conclusions: Adult cancer survivors who are older, have a history of breast, lung, or melanoma cancers, or see more specialists report worse care coordination. Future research should explore and address the multilevel influences that lead to worse care coordination for older adult cancer survivors. Research Sponsor: None.
Improving the quality of oral cancer drug delivery across a health system. First Author: Katherine Enright, Ontario Health (Cancer Care Ontario), Toronto, ON, Canada

Background: Oral systemic therapy (ST) presents unique care delivery challenges. Gaps in patient education and monitoring for patients on oral ST delivery are well documented. In an increased toxicity burden (Black, OR = 1.91, CI = 1.58 to 2.34), Asian (OR = 1.68, CI = 1.32 to 2.14), and Hispanic (OR = 1.45, CI = 1.06 to 1.99) patients were more likely to receive opioids 1 to 2 years after diagnosis. Conclusions: While the rate of short-term opioid use is rising, the probability of receiving a MED ≥ 200 mg decreased over the study period (OR = 0.98 per year, CI = 0.97 to 0.99) and positively associated with life satisfaction (r = 0.20, p = .001), but not with general satisfaction with life (r = 0.13, p = .06). Hope levels were negatively associated with burnout (r = −0.21, p = .003) and positively associated with satisfaction with life (r = 0.58, p < .001). Consistent with past research showing that people with greater availability of general social support suffer from lower rates of burnout and experience higher levels of psychological well-being, we found that social support was negatively associated with burnout (r = −0.18, p = .007) and positively associated with life satisfaction (r = 0.38, p < .001). In addition, we tested a mediational model using Hayes’ bootstrapping approach in PROCESS macro in SPSS. In this model, hope partially mediated the relationships between social support and both burnout and life satisfaction. In the model, job stress also predicted burnout, but, as in the previous correlation analysis, had no relationship with general life satisfaction. Conclusions: Our cross-sectional results support the use of brief or minimal intervention strategies as a potential component of the workforce training model. Our data indicate that the particular combination of social support and hope may prove helpful for reducing job burnout and increasing general satisfaction with life. Single-session hope-enhancement workshops that incorporate both of these elements have been shown to be effective in a variety of medical populations. Such interventions for healthcare professionals warrant further study. Research Sponsor: SWOG Cancer Research Group.

A hopefulness survey of SWOG members: Relationships among hope, job stress, and burnout. First Author: David Feldman, Santa Clara University, Santa Clara, CA

Background: Hope is a cognitive, goal-directed phenomenon that is measurable. It is “a cognitive set that is based on a reciprocally-derived sense of successful agency (goal-directed determination) and pathways (planning to move).” Although hope has been explored in a variety of contexts, there has been no investigation hope in physicians and other healthcare providers. Low hope has been shown to predict work burnout in other professions. This survey in the SWOG Cancer Research Network tests the relationships among hope, work stress, burnout, and general satisfaction with life. Methods: SWOG members randomly selected and invited to participate by email linked to a 10-minute online survey consisting of the following: The Adult Hope Scale, Satisfaction with Life Scale, demographic questionnaire, and items assessing burnout, work stress, and general social support. Of 1000 invitees, 246 responded to the survey, including physicians (n = 77) and RNs (n = 46). Results: On average, respondents reported relatively high work stress (M = 3.59 out of 5). Levels of work stress were positively associated with burnout (r = .58, p < .001), but not with general satisfaction with life (r = .13, p = .06).Hope levels were negatively associated with burnout (r = −.21, p = .003) and positively associated with satisfaction with life (r = .58, p < .001). Consistent with past research showing that people with greater availability of general social support suffer from lower rates of burnout and experience higher levels of psychological well-being, we found that social support was negatively associated with burnout (r = −.18, p = .007) and positively associated with life satisfaction (r = .38, p < .001). In addition, we tested a mediation model using Hayes’ bootstrapping approach in PROCESS macro in SPSS. In this model, hope partially mediated the relationships between social support and both burnout and life satisfaction. In the model, job stress also predicted burnout, but, as in the previous correlation analysis, had no relationship with general life satisfaction. Conclusions: Our cross-sectional results support the use of brief or minimal intervention strategies as a potential component of the workforce training model. Our data indicate that the particular combination of social support and hope may prove helpful for reducing job burnout and increasing general satisfaction with life. Single-session hope-enhancement workshops that incorporate both of these elements have been shown to be effective in a variety of medical populations. Such interventions for healthcare professionals warrant further study. Research Sponsor: SWOG Cancer Research Group.

184 Rapid Abstract Session

185 Rapid Abstract Session

Use of patient-reported outcomes (PROs) to predict treatment outcomes in patients with advanced cancer. First Author: Aparna Raj Parikh, University of California San Francisco, San Francisco, CA

Background: PROs assessing quality of life (QOL) and physical symptoms often correlate with clinical outcomes in patients (pts) with cancer. Yet, data are lacking about the use of PROs to predict treatment response. We evaluated associations of baseline PROs with treatment response, healthcare use, and survival in advanced cancer. We prospectively enrolled 112 of 131 (85.5% enrollment) consecutive pts (median age = 62.8, 61.6% male, 45.5% pancreatobiliary cancer). For treatment response, 64.3% enrolled 112 of 131 (85.5% enrollment) consecutive pts (median age = 62.8, 61.6% male, 45.5% pancreatobiliary cancer). For treatment response, 64.3%
A multicentered academic medical center experience of a simulated root cause analysis (RCA) for hematology/oncology fellows. First Author: Danielle Wallace, University of Rochester Department of Medicine, Rochester, NY

Background: Quality improvement and patient safety education is an Accreditation Council for Graduate Medical Education (ACGME) common program requirement for hematology/oncology fellowships. Specifically, the ACGME requires trainee participation in interprofessional clinical patient safety activities, such as root cause analyses. These can be challenging to incorporate into busy schedules and are intimidating to some trainees, but simulated RCAs are a novel way to assure trainees gain important patient safety skills. We report on a multicentered experience utilizing a simulated RCA educational module in an attempt to provide fellows with the tools needed to participate in a live RCA and to increase awareness of the need to analyze patient safety events. Methods: The two-hour module included a didactic session explaining the basics of an RCA including common terminology, effective chart review, and personal interviews. The fellows assessed a patient safety event of a missed coagulopathy and created an event flow map and fishbone analysis. They then formed root cause/contributing factor statements and proposed a solution. Seventeen fellows from two institutions completed pre- and post-session surveys regarding the experience. Results: There was a 47% increase in both the percentage of fellows who felt comfortable participating in live RCAs in the future, and in the number of fellows who felt comfortable using the tools typically utilized in an RCA. 70.59% of respondents felt that as a result of the mock RCA, they were more likely to report a near miss or adverse event. Conclusions: Mock RCAs are a feasible method of incorporating ACGME-required patient safety activities into hematology/oncology fellow education and are effective in increasing their comfort and understanding of important quality improvement skills. Research Sponsor: None.

Multisite quality improvement initiative to repair incomplete electronic medical record documentation as one contributor to provider burnout. First Author: Carolyn Russo, St. Jude Children's Research Hospital, Memphis, TN

Background: Provider burnout is a challenge adversely affecting the quality, safety, and cost of health care. We measured burnout among pediatric oncology providers in this St. Jude Affiliate network and used a Plan-Do-Study-Act (PD-SA) improvement cycle to address one of the factors contributing to burnout: providers' inability to accurately complete electronic medical record documentation. Methods: The burnout survey response rate was 44.6%. Burnout was identified in 42.9% of providers. Documentation in the electronic medical record (EMR) was cited as the second-most common contributor to burnout, and it was this issue we chose to address based on a priority matrix. We improved the completeness of oral chemotherapy documentation from a baseline of 13% compliance to 87% compliance within 3 months. The improved compliance was achieved by standardizing the documentation process in the EMR for content and location. Results: The EMR was one of the contributing factors in the burnout survey of the pediatric oncology providers in this St. Jude Affiliate network. A PD-SA improvement model to improve clinical research documentation was successful in addressing one of several contributing factors to provider burnout. Research Sponsor: St. Jude.

Increasing lung cancer screening rates in HIV clinics. First Author: Shawn Jindal, Montefiore Medical Center, Bronx, NY

Background: Data at our institution shows lung cancer is more prevalent and aggressive in HIV patients. A study of lung cancer patients revealed a mean age of 55.8 years in those with HIV vs. 68.0 in those without. Additionally, 67% of HIV patients had metastasis at time of diagnosis, compared to 49% in the overall population. One reason for this is an 18.9% increase in overall mortality among HIV patients who receive NLST-recommended screening. Despite this, data from 2018 estimated only 13% of eligible HIV patients had completed screening at our institution. We pursued a quality improvement initiative to increase lung cancer screening in our patient population over a four-month span. Results of our multi-disciplinary team consisted of strategies used to identify improvements for our intervention. Our intervention encompassed HIV patients that met CMS screening criteria (i.e. age 55-77, 30 pack-year smoking). Our process measure was new referrals to our dedicated screening coordinator, who contacts patients to arrange for CT scans. We plotted trends in appointment referrals on a run chart. Results: Areas for improvement included EMR documentation to assess screening eligibility and an occasional lack of awareness regarding criteria. Providers also cited time constraints may limit referrals. Our team identified patients that met screening criteria and generated EMR reminders for providers to refer patients to radiology. We also held sessions with providers and nursing staff to increase awareness of our screening program. Of 628 patients, 128 (20.4%) had sufficient documented smoking history to assess for screening eligibility. 81 patients (63.1%) met our criteria. Of these patients, 58 (71.6%) had not been screened or referred for screening. Through our most recent interventions, 16 (31.3%) patients have been referred to our screening coordinator, and 7 (12.1%) have received screening CT scans. Our interventions ultimately led to an increase from 23 of 81 (28.4%) patients with completed screening to a projected 46 of 81 (56.8%). Conclusions: Providing education and EMR alerts to raise awareness regarding eligibility, we substantially increased the screening rate in our clinics. Our interventions will be broadened as we return from COVID stoppages. Future interventions include development of methods to fully automate documented screening eligibility in the EMR to allow for automated identification of screening eligibility. PD-SA and interventions are ongoing with continued follow-up of efficacy. Research Sponsor: None.

Protecting high-risk oncology patients during the pandemic of COVID-19 by creating an outpatient cancer clinic for febrile neutropenia (California clinic). First Author: Manidhar Reddy Lekkala, University of Rochester Medical Center, Rochester, NY

Background: Delivering care for vulnerable cancer patients during a pandemic is challenging given the competing risks of death from cancer versus the high case fatality rates from SARS-COV-2 (CV-19). Data currently available suggests a total fatality rate close to 30%/50% with CV-19 in active malignancies. In addition to the usual treatment interruptions from national organizations to reduce the social footprint of patients in order to minimize risk of exposure of CV-19, our cancer center implemented an isolated clinic with personal protective equipment (PPE) and direct access to a CV-19 rule out floor (if admission warranted) in order to manage those with febrile neutropenia (FN) who otherwise would have been triaged to the emergency room (ED). Methods: We implemented an outpatient isolated extended hour clinic with access to PPE, blood work, intravenous antibiotics and fluids for FN patients as a pilot project from mid-April with expected duration during the pandemic with the aim to decrease the ED admissions for FN by 50%. We used the Multinational Association of Support Care in Cancer (MASCC) validated tool to assist with outpatient versus inpatient management of these patients. All patients were screened by a phone call to alert the disease management nurses (DMN) for CV-19 to identify CV-19 in a high-risk population. Our PD-SA (Plan Do Study Act) cycles have been in 2-week sessions with constant re-education to multiple providers. Results: Prior to CV-19, our databases show an approximate 15 to 20 FN admittance per month who are triaged to ED due to symptoms such as fever and leucopenia (leukocytes ≤ 1,000 cells/μL). In the last 45 days, we have screened 8 patients, of which 2 were discharged home with oral antibiotics on isolation until CV-19 testing returned, 6 were directly admitted to CV-19 rule out floor avoiding ED. Our overall patient numbers were low during the peak of the pandemic and we expect to see increasing number of patients utilizing the clinic over the next few months. Conclusions: Implementing the California clinic has thus far successfully decreased the social footprint of our highest-risk cancer patients with FN, in hopes of avoiding potential exposure to CV-19 as well as the unnecessary exposure of the clinical personnel. Research Sponsor: None.
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The prevention of antineoplasto therapy extravasations events in the oncology clinic infusion patient: A quality improvement study. First Author: Lisa Ciafre, Allegheny Health Network Cancer Institute, Pittsburgh, PA

Background: The Allegheny Health Network Cancer Institute (AHNCI) Medical Oncology is comprised of 19 infusion clinics located in the western Pennsylvania region. Safety quality assurance data revealed an extravasation rate of 50% of antineoplasto therapy extravasations. All infrastructure reviewed a benchmark for these extravasations to be 0.09% confirming that the AHNCI had an opportunity to improve patient safety. Methods: A multidisciplinary quality team with support from ASCO’s Quality Training Program was developed to decrease extravasation occurrences utilizing problem solving tools and PDSA methodology. A process flow map and cause and effect diagram revealed opportunities in the following categories: People–Lack of formal IV training resulting in care dependent on experiential knowledge only; Process–There is not a standardized process for IV starts; Plant–Supply standardization was non-existent. Offices and staff utilized the catheter of their choice with varying levels of technology for early detection of vein cannulation. The use of catheter stabilizing dressings or devices did not exist. Diagnostic data analysis revealed that a majority of extravasation events occurred peripheral in the forearm with a 24q, 0.75” catheter. Therefore, this quality team’s focus was on the prevention of peripheral extravasations. Gembas walk utilizing an observation tool identified that nurses often made decisions based on personal comfort rather than best practice. Process measures: Process Change #1: Standardize IV Catheters across the network to reduce variation and ensure that the chosen catheter’s manufacture technology includes vein cannulation technology and to implement IV start kits with a sequential dressing. Process Change #2: Educate nurses in vein assessment technique, catheter selection and insertion skill. Results: Allegheny Health Network Cancer Institute was able to decrease extravasation events from 0.12% to 0.02% due to the innovation of this quality improvement team by standardizing IV starting staff competencies and peripheral vein cannulation knowledge and skills. Conclusions: Validating a problem through data is essential–we can’t manage what we can’t measure. Validating a problem’s value through evidence is necessary (patient harm). Benchmarking must be supported with a high level of evidence. Eliminating variation improves investigative outcomes. Implementing process measures through best practice evidence and not hypothesis is essential. Research Sponsor: None.

193 Poster Session and Poster Highlights Session; Displayed in Poster Session

Improving patient retention by optimizing appointment scheduling in an underserved oncology population within a public safety-net health system. First Author: Jessica Meshman, University of Miami/Sylvester Comprehensive Cancer Center, Miami, FL

Background: Cancer patients in underserved populations are at high risk for cancer-related treatment delays and associated outcomes. We theorized that optimizing appointment scheduling was contributing to a high no-show rate within an urban safety-net hospital. Clinic appointments were being scheduled in the department-specific record and verify system rather than the hospital-wide electronic health record (EHR). We sought to adopt a system-wide approach with the help of the Lean Six Sigma (LSS) methodologies. Our aim was to utilize the Lean Six Sigma (LSS) methodologies to increase EHR scheduling of follow-up and rescheduling of no-show appointments to 50%. Methods: While involving the entire clinic staff, we utilized the Lean Six Sigma DMAIC model: define, measure, analyze, improve, and control, to improve appointment scheduling. Appointment data was collected for the 3 months prior to and during the intervention time period. We determined the root causes for delinquent scheduling, including lack of staff availability to schedule patients into two electronic systems and to call no-show patients. Implementations included implementing an electronic order for follow-up scheduling and blocked time for personnel to contact no-show patients and verify scheduling. After the formation of a novel process map, control plan, and Failure Modes Effects Analysis (FMEA), the pilot study ran for 2 months. Results: Follow-up appointment scheduling into the EHR improved from 2% to 98% (p < 0.01). After the first intervention month, the no-show rescheduling rate improved from 0% to 43% (p < 0.01) below goal. The team revised the process map by substituting a no-show EHR order in place of the calendar intervention. This constituted the beginning of month 2. The no-show rescheduling subsequently improved from 43% to 87% (p < 0.01). The patient no-show rate was 19% during the pre-intervention period, 17% for the first intervention cycle and 15% for the second intervention cycle (p < 0.3). Conclusions: Utilization of LSS allowed for successful adoption of EHR appointment scheduling within our department. While not yet significant, the no-show rate appears to be trending downward as a result of improved scheduling, and we expect the no-show rate to continue to decline as the study matures. These findings suggest that optimized appointment scheduling may decrease patient retention in an atrisk population. Future directions include evaluating cancer outcomes and decreased healthcare costs as a result of higher patient retention. Research Sponsor: None.

194 Poster Session

Improving vaccine administration in patients with solid malignancies in the outpatient setting. First Author: Mariam Alexander, Montefiore Medical Center, Bronx, NY

Background: Pneumococcal and influenza vaccinations are recommended for all patients with any malignancy in accordance with the Infectious Disease Society of America. Patients undergoing chemotherapy for solid tumors have a 40-50 fold higher risk for the development of invasive pneumococcal disease and may also experience a delay in their vaccination while on therapy. We receive the sequential 13-valent pneumococcal conjugate vaccine (PCV13) and 23-valent pneumococcal polysaccharide vaccine (PPSV23). In the outpatient setting, lack of provider knowledge, complexity of the pneumococcal vaccine regimen and lack of workflow of a low volume administration. Towards this end, we conducted a quality project to improve administration of both pneumococcal and influenza vaccines by at least 50% at one of our outpatient oncology clinics at Montefiore Medical Center in Bronx, NY during a 4 month period. Methods: We first provided provider and nursing education with regard to safety and efficacy of the vaccines in both the clinic as well as the infusion setting. Nurses were then prompted to screen patients and offer the vaccines during intake prior to all infusions and clinic visits. We created bulk orders which allowed nurses greater control of reissuing vaccine orders previously entered by the director of the clinic. We also posted “cheat-sheets” on optimal timing, safety and sequence of administration of the vaccines in every patient room and nursing station. After our first cycle, we identified that there was a delay in workflow in the outpatient clinic with delivery of the vaccines to the clinic from the pharmacy. We therefore obtained a secure vaccine fridge that was placed at the nursing station, which allowed nurses easy access to the vaccines. Results: When vaccine administration during the 2019-2020 influenza season was compared to the 2019-2020 influenza season, we found that these interventions improved the administration of the influenza vaccine by 70%. There was a dramatic increase in the number of PCV13 vaccines administered by 350% (more than 4X) in PPV23 in 2019-2020. The rate of administration of patient smoking history by 62% and lung cancer screening for those who meet the criteria according to the guidelines by a relative increase of 105%. We are currently working on PDSA cycle 2 to incorporate education materials in the encounter room and PDSA cycle 3 to incorporate this clinical reminder into the electronic medical record and to implement hospital wide. Research Sponsor: None.

195 Poster Session

Closing the gap in health care disparities by improving the rate of lung cancer screening in an intercity hospital. First Author: Anika Bhargava, MedStar Washington Hospital Center, Washington, DC

Background: The National Lung Cancer Screening Trial showed reduced lung cancer mortality with low-dose computed tomography (LDCT) screening. Although LDCT is generally covered by private and government insurance, the rate of LDCT screening has been reported to be very low (2-3%) in previous studies. We wanted to achieve adequate screening rate of 30% with the help of EHR and smoking history to identify eligible populations. Purpose: To increase the rate of lung cancer screening in Medstar Washington Hospital Center Internal Medicine (WHCIM) clinics from a baseline rate of 2.88% by 50% over a 3-month period. Methods: Retrospective baseline data was collected over a 2-week period 01/06/2020-01/17/2020 from patients visits at WHCIM to assess the rate of lung cancer screening. A session was held with physicians and nursing staff to find the barriers in identifying eligible patients for lung cancer screening and to create a fishbone diagram. The first plan-do-study act cycle (PDSA) was initiated from 02/24/2020-03/13/2020 when we piloted a clinical reminder in the form of a print-out filled out by the medical assistants at check in and then given to physicians. The form included the patient’s age and simple smoking questionnaire according to the lung cancer screening guidelines. Data was collected during this time period which included documentation of patient’s smoking history, lung cancer screening eligibility and referral to LDCT. Results: By retrospective analysis from the time period of 01/06/2020-01/17/2020 providers documented a smoking history in only 16% of patients seen and only 2.88% of all patients seen over the age of 55 were referred for lung cancer screening. Post intervention for the time period of 02/24/2020-03/13/2020 increased the amount of documented smoking history by providers to 26% and number of patients sent for lung cancer screening to 6%. Of patients who met the criteria for lung cancer screening, prior to the intervention only 42% of patients were referred. However, after the clinical reminder was initiated, 86% of patients who did meet the criteria were sent for screening. The clinical reminder increased the rate of documentation of smoking history by 62% and lung cancer screening for those who meet the criteria according to the guidelines by a relative increase of 105%. We are currently working on PDSA cycle 2 to incorporate education materials in the encounter room and PDSA cycle 3 to incorporate this clinical reminder into the electronic medical record and to implement hospital wide. Research Sponsor: None.
Improving the referral rate of universal genetic counseling for pancreatic ductal adenocarcinoma (PDAC) at the Cleveland Clinic Tausig Cancer Center: A quality improvement project. First Author: Kanika G. Nair, George Washington University School of Medicine, Washington, DC

Background: While most PDAC are sporadic, up to 10% are inherited. In 2018, ASCO and NCCN guidelines were updated to recommend that all patients with PDAC receive genetic counseling (GC) and undergo genetic testing. Furthermore, interest in treating patients with targeted therapy, such as olaparib, for germline mutations is increasing. We implemented a quality improvement project to identify the referral rate to GC for patients with PDAC, with the goal of improving the referral rate to 60%. Methods: Barriers to GC referral were identified using quality improvement tools developed at the ASCO Quality Training Program. Three “plan, do, study, act” (PDSA) cycles were implemented: 1) updating the electronic order and tumor board template to include GC recommendation (Aug-Oct 2019), 2) physician education (Nov-Dec 2019) and 3) patient education and physician reinforcement (Jan-Feb 2020).

Baseline data to evaluate impact of PDSA intervention (from April to June 2019) on documented discussions about GC and placement of the referral order was completed via chart review. Results: Between April 2019 to January 2020, 199 patients with PDAC were seen in medical oncology clinic as new patient visits. Thirteen patients had previously completed GC. For the remainder, baseline discussion and referral rates were 25% and 9%, respectively. Discussion and referral rates improved to 55% and 30% after PDSA cycles 1 and 2, respectively. After PDSA cycle 3, 56% and 58% after PDSA 3, respectively. Forty-nine patients were referred at the first visit and 23 were referred at a subsequent visit. Forty-six patients underwent GC. In patients who completed germline testing 8.9% (4/45) were found to have a pathogenic variant in BRCA2, TP53, ATM, and MUTYH. Conclusions: With increased physician and patient education, we were able to improve the GC discussion rate from 25% to 95% and referral rate from 9% to 58%. While we did not meet our aim of 60% GC referral rate, we identified obstacles and outlined an improved process for patient referrals. GC referrals for patients with PDAC is likely to increase detection of germline mutations in this population. Research Sponsor: None.

Improving documentation of cancer staging at an academic cancer center utilizing an EMR-based system with public accountability. First Author: Jade Zhou, UC San Diego Health, San Diego, CA

Background: Accurate TNM staging of malignancy is essential to quality care of cancer patients but maintaining consistent documentation of appropriate staging remains a challenge. We identified documentation of TNM staging at our institution to be below our internal quality goals. We sought to improve the quality and documentation of staging in all patients at our cancer center with a diagnosis of malignancy by implementing both automated and manual reminders through our electronic medical record (EMR) software (Epic), as well as by using team accountability. Methods: We defined an expectation that all patients seen at UC San Diego Moores Cancer Center with a billing diagnosis of malignancy would have TNM staging documented in the EMR within 1 month of their initial visit. The project started in 1/2016, with a phased rollout to individual teams, including education and outreach prior to the start of performance tracking. We used the AJCC staging module in Epic and focused on all new patient visits with a billing diagnosis of malignancy. Providers were asked to add this diagnosis to the problem list and then document the stage using the AJCC staging module in Epic. We tracked compliance by individual provider and by team and emailed performance reports to all providers on a monthly basis. To facilitate compliance, we initiated automatic Epic messages to providers for an unsaved cancer diagnosis on the problem list and followed up with a personal email from administrative staff if documentation was not completed in a timely manner. Results: At the initiation of this project, there was no standardized documentation of cancer staging. The project was phased in with the skin cancer head and neck cancers teams in phase I. Compliance in the initial month of implementation was 28% for the 12 months leading up to implementation of the project, compliance was over 50%, and within 27 months, over 90%. Compliance has remained > 90% since. For 3/2020, 368 patients were eligible for staging and 98% were staged within a month of their visit. Conclusions: Documentation of the TNM staging of malignancy was significantly improved by both automated and personal reminders with a vital component of team accountability. Further efforts to improve the current practice and culture of documentation for diagnosed cancer patients remains a crucial aspect of quality and safety. Research Sponsor: None.

Organizational partnership to expand the ASCO Quality Training Program to oncology pharmacists. First Author: Emily R. Mackler, University of Michigan Health System, Ann Arbor, MI

Background: Pharmacists have a recognized role in optimizing medication management and enhancing patient quality of care. In an effort to enhance knowledge related to oncology quality improvement (QI), the Hematology/Oncology Pharmacy Association (HOPA) partnered with the American Society of Clinical Oncology’s (ASCO) Quality Training Program to develop a 1-day HOPA-ASCO QTP Workshop. Methods: HOPA’s Quality Oversight Committee identified several areas of priority focus, including identifying and developing opportunities for members to participate in education focused on oncology value and quality-based patient care. The QTP-AJC committee was tasked to meet HOPA goals for training due to the practical outcomes associated with the program, the interdisciplinary focus, the successful experience of prior HOPA member participants, and expertise of the faculty. In addition, both organizations have a unified goal in improving the care of cancer patients. Surveys were formulated to assess knowledge pre- and post-participation and actionable efforts participants made given knowledge gained from the workshop. Results: A total of 24 HOPA members participated in the 1-day workshop with 40% having been in oncology practice for >15 years and 70% involved in some aspect of QI within their role. Primary reasons for participation were: to help lead oncology multidisciplinary initiatives in my organization (44%), to increase skills to complete QI projects (28%), and to help lead oncology pharmacy practitioners in my organization (20%). Measures of knowledge and competence increased after participation. Knowledge increased by an average of 3 points from 4.57 to 7.55 (0-10 scale) and competence increased an average of 2.8 points from 4.48 to 7.32. In a 3-month follow-up survey (67% response rate), the majority (93%) of participants indicated they were very likely or extremely likely to use the skills gained from the workshop in practice and 88% of respondents indicated they used the skills gained from the program somewhat often, very often or extremely often. Since the workshop, 21 of the 24 participants have used the skills learned in the ASCO QTP 6-month course. Conclusions: The 1-day HOPA-ASCO QTP Workshop proved to be a successful partnership between the two organizations, providing excellent training and education to HOPA members. Next steps of this collaboration include additional 1-day workshops available to more members and a modified 6-month ASCO QTP program for HOPA members with oncology pharmacists serving as the interdisciplinary team leader. Research Sponsor: None.

Treatment navigation to reduce emergency room (ER) visits in cancer patients. First Author: Henrique Zanoni Fernandes, Instituto De Oncologia Do Vale, São Paulo, Brazil

Background: The practice of conventional oncology has undoubtedly changed in the last 15 years, becoming more efficient, but also more complex and expensive. This complex care needs significant coordination. In the last 2 years, a new initiative of the continuous performance tracking (CPT) to oncology patients monitored by the “Health-Oncology Patient (HOPA)” committee. In the “Navigation Treatment” domain, the impact on reducing ER visits was, in media, 75%. Methods: In 2015 IOV developed a patient-centered Navigation System based on Kanban (board and visual signals-KNS) for managing the treatment plan of our patients. In 2016, we successfully developed a new CPT program based on KNS as an educational grant from QTP-ASCO, we extended this system to manage pain to others cancers and treatment-related symptoms, education, resource referral or Coordination of multi-disciplinary care. This study addresses only decreased ER visits between Dec 15 and May 20 by all patients monitored by Nurses navigators. We measured the proportional reduction of ER visits related to pain to the total ER visits in three successive periods: development of the NKS (dec15-uljul16), pilot phase (aug16-oct17), and as an adopted best practice (oct17-until today). The KNS comprises a set of standardized procedures and successive checks for patients in treatment based on three procedures: (a) standardized treatments prescriptions to pain and symptoms controls; (b) standardized follow up in 24 and 48 hours, 1, 2 and 4 weeks; and (c) manage side effects of opioids or other emerging problem (constipation, confusion, mucositis, diarrhea, fever, etc.). Any patient initiating opioid use is included in the KNS until opioid is discontinued. Once pain is adequately controlled, the frequency of checks become wider up to once a month if no toxicity is identified. Any new condition (will restart the 24-48 hours loop. The KNS is managed by oncology nurses using phone or video calls, messaging, and appointments; Mon-Sun from 6 AM to 8 PM. Results: The KNS managed a median of 204 (table*) patients per month during the last 32 months (Oct17 to Apr20). Of the patients monitored by the KNS, 40% of patients complained of pain who participated. Our data show the managed by the team avoided an unwanted visit to the ER, in media by 75%. Pain represents 20% of ER visits generally; in pilot phase 15% of ER visits, and actually 4% of ER visits, an 80% reduction in pain-related ER visits. ER visits represent patients with uncontrolled pain and not effectively managed by the KNS. Conclusions: The development of a system of navigation to oncology care patients resulted in a 75% reduction of ER visits and adequate pain control in our practice. Research Sponsor: ASCO Quality Training Program, Instituto De Oncologia do Vale.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Geriatric assessment tool to assist physicians in providing patients with quality care in rural community oncology setting. First Author: Mari Montesano, Columbia Memorial Hospital, Astoria, OR

Background: Currently in the USA, 60% of all cancers and 70% of cancer mortality occur in people aged 65 and older. However, there are significant gaps in knowledge of oncology treatment outcomes in the geriatric population. The Cancer and Aging Research Group developed a Comprehensive Geriatric Assessment (CGA) tool in 2007 to assess the abilities of older patients to make judgments and carry out daily activities. The assessment was created to help doctors recognize issues in the geriatric population and develop comprehensive treatment plans with the aim to improve outcomes in this age group. The purpose of the study was to assess whether the CGA tool would be useful in the physician’s decision-making process and in making appropriate and timely patient referrals in a rural community oncology setting. Methods: Newly diagnosed cancer patients with non-hematological cancers above 65 years of age seeking care at the Columbia Memorial Hospital –OHsu Knight Cancer Collaborative during May to August of 2019 were consented and asked to take the CGA survey. A summary of the patient’s responses with the scores and a list of recommendations was provided to the physician at the time of the initial consultation. Along with this summary, a single question survey was given to the physician in order to assess whether the feedback was helpful in their treatment planning. Results: Of the 49 new patients seen at the CMH-OHsu Knight Cancer Collaborative who qualified to participate in the study 22 (44.8%) completed the survey, 18 (36.7%) did not complete the survey, 5 (10%) did not come in for their clinic appointment, and 5 others were disqualified from the survey for other reasons. The results indicate that the survey tool aided the clinician in the majority (95%) of the cases to make overall assessments of their patient’s health and helped make management decisions. The results showed that more referrals were made to physical therapy & primary care clinics in patients who took the survey as compared to the patients who did not take the survey (14% vs 5%).

Conclusions: We conclude that the oncologists at our cancer center found the CARG assessment tool to be beneficial for physicians in their decision-making process while assessing an elderly patient and helped them provide timely and more comprehensive treatment care plan. Research Sponsor: None.

Characteristics of medical malpractice claims related to cancer in Florida. First Author: Guanming Chen, University of Florida, Gainesville, FL

Background: Florida is among the states that have highest number of cases and total medical malpractice payments. The aim of the study is to examine the characteristics of cancer-related malpractice cases in Florida. Methods: Cancer-related malpractice claims with payment occurred during Jan. 2005 to Dec. 2015 were identified from the Florida Office of Insurance Regulation (FLOIR) database. The characteristics of malpractice cases examined in the study include cause of allegation, severity of injury, specialty of healthcare provider, length of delay in diagnosis, settlement stage, and indemnity paid. Results: A total of 811 claims were identified. The most common in patients who are obese (BMI≥30) – including diabetes (DM), hypertension (HTN), and hyperlipidemia (HLD) – are often conflated with obesity with regard to their effects on breast cancer outcomes. We sought to determine the effect of BMI on overall survival (OS) in women with breast cancer after controlling for obesity-associated conditions. Methods: Women identified with stage 0-IV breast cancer at an academic institution from Jan 2014-Jul 2016 and with known BMI at diagnosis were identified, and BMI and ANOVA tests were used to compare intergroup differences. Rates of DM, HTN, and HLD increased with increasing BMI (all p < 0.01). Unadjusted OS by BMI class was estimated with the Kaplan-Meier method. Cox proportional hazards models were used to estimate the association of BMI with OS after adjusting for covariates including obesity-associated conditions. Results: Of 351 evaluable pts treated with an ICI, 129 (37%) were overweight, 227 (22.1%) had class 1 obesity, and 207 (20.2%) had class 2/3 obesity. Non-Hispanic (NH) black women were overrepresented among obese patients, making up 25% (n=257) of all patients but 37.5% of obese patients. Rates of DM, HTN, and HLD increased with increasing BMI (all p < 0.01). Unadjusted OS differed significantly by BMI class, with overweight women having the lowest OS (log rank p=0.02). After adjustment, BMI continued to be associated with OS, with overweight women having significantly worse OS vs normal weight women, but there was no significant association between obesity and OS (Table). Conclusions: Despite higher rates of DM, HTN, and HLD with increasing BMI, a diagnosis of obesity was not associated with worse OS in women with breast cancer but being overweight was, suggesting the need for a more nuanced understanding of body composition, obesity-associated conditions, and their respective potential impact on breast cancer outcomes. Research Sponsor: U.S. National Institutes of Health, Philanthropic funds.
204  Poster Session
Development of a personalized follow-up care algorithm for Medicare breast cancer survivors. First Author: Stephanie B. Wheeler, The University of North Carolina at Chapel Hill, Chapel Hill, NC.

Background: The rapidly growing number of cancer survivors in the US have substantial healthcare needs requiring surveillance and care for the late and long-term effects of cancer treatment and comorbidities. Lacking a clear system of care, survivors often access care through the emergency department or treatment center. A framework to approach survivors in need of care. The objective of this study was to test a clinical prediction algorithm to distinguish low-complexity breast cancer survivors who may be suited to self-manage their survivorship care and be followed by their primary care provider (PCP) from survivors who require specialty care. Methods: We used the Surveil lance and Epidemiology End Results (SEER) registry - Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey data to identify women diagnosed with stage 0-3 breast cancer between 2003 and 2011. Cross-validated random forest machine learning models separately estimated survivors’ independent risk of all-cause death, cancer-specific death, recurrence, or severe late effects within 3 years following treatment completion. The absence of these outcomes identified survivors as potentially eligible for self-management and PCP care. Predictors included measures of baseline health status and health care utilization, patient socio-demographic characteristics, cancer characteristics, and financial burden. Results: Among the 4,516 survivors in the primary cohort, 82% were white, and the mean (SD) age was 75.1 (7.8) years. Almost 50% were diagnosed with Stage I breast cancer, followed by 25.2% with Stage 2, 19.3% with Stage 3, and 5.6% with Stage IV. Within the 3-year follow-up period, 372 (8.2%) survivors died (11% or 2.5% from cancer), 665 (14.7%) experienced recurrence, and 488 (10.8%) were hospitalized due to severe late effects. Predicting all-cause death (≥4% from cancer), 665 (14.7%) experienced recurrence, and 488 (10.8%) 

205  Poster Session
Pre-COVID-19 food insecurity prevalence and risk factors in caregivers of pediatric cancer patients at a children’s cancer hospital. First Author: Stephanie J. Wells, UT MD Anderson Cancer Center, Houston, TX.

Background: Food insecurity (FI) affects In 5 US households with children and is associated with malnutrition and poor healthcare quality in children. Malnutrition negatively impacts clinical trial outcomes, chemotherapy resistance, and survival rate in cancer patients, who may be at higher at risk given the financial toxicity of treatment. Thus, we aimed to assess prevalence and sociodemographic factors associated with FI reported in patients and caregivers at MD Anderson Children’s Hospital (MDACC-CH) and to identify healthcare provider sociodiagnostics and FI practice considerations. Methods: We surveyed caregivers and providers at MDACC-CH anonymously from December 2019 to January 2020. Caregiver surveys included sociodiagnostics and The Hunger Vital Sign FI screening tool. Oncologists and other providers were surveyed on FI-related practice considerations. Univariate relationships between socio-demographics and FI were explored using Pearson’s correlation and multivariate logistic regression to model variables associated with FI risk factors. Results: Baseline characteristics are listed in Table 1. Of 471 caregiver responders, 361 were positive for FI. Univariate analyses revealed that race, education level, parental or child support, marital status, and household income were associated with FI status. Final logistic regression model indicated that other than Non-Hispanic White and lower education level were positively associated with higher FI. All provider responses, 58% reported being knowledgeable about FI to some extent. No providers referred patients to community resources. Conclusion: In a small study, FI prevalence and risk factors in patients and caregivers at MDACC-CH may be associated with race and education level. Further research is needed to assess the impact of the COVID-19 pandemic on FI in this population and to determine appropriate interventions and clinical pathways to improve FI status. Research Sponsor: None.

206  Poster Session
Knowledge and evaluation of geriatric assessment (GA) domains among U.S. community oncologists/hematologists (cOH). First Author: Ajeet Gajra, Cardinal Health, Dublin, OH.

Background: GA is a multidisciplinary assessment consisting of the following domains: physical function, comorbidity, cognition, mood, social support, nutrition, and medication review. Conducting a GA with validated instruments to assess these domains has been shown to improve outcomes in older adults with cancer (Soo, et al ASCO 2020). The utilization of validated GA tools and their domains versus use of other surrogates from history and physical exam (HPE) for risk-stratification in older adults in the community practice setting is unclear. In this survey-based study, we assessed the knowledge of GA and the utilization of GA in older adult patients cOH. Methods: Question pertaining to GA and the care of older adults with cancer were developed by two medical oncologists (AG and BAF) and presented to cOH with materials and data. Results were analyzed using descriptive statistics. Results: Of the 173 participants surveyed, 59% reported performing no GA, while 13% and 28% reported performing GA on all and selected older adults, respectively. When presented with a list of daily living activities, half of the cOH stated they were unable to correctly identify all activities of daily living (ADLs) and instrumental ADLs (56% and 70%, respectively). The top 2 methods used by cOH to assess physical function were the ECOG performance status (82%) and HPE (42%). For assessment of cognition, most cOH used HPE (78%) or the Mini Mental State Exam (MMSE, 12%). Social support was assessed via HPE (44%) or GA (27%). cOH reported that medication review is performed by an office staff (medical assistant, 31% nurse, 12%, and pharmacist, 5%); the physician signing off on the information reported in the chart. In a report of who entered the medication information (MGI), cOH and GA tools were used in 74% of the medical oncologists used GA to inform chemotherapy dose; 48% reported starting at a lower dose with intent to de-escalate if toxicity was encountered. cOH were not adequately equipped to care for older adults with cancer given the complexity involved. Conclusions: Many GA and do not utilize validated instruments to assess the domains of GA. There also appear to be knowledge gaps regarding individual domains of GA. There is a need to further educate GA regarding the component and value of GA in older adults with cancer. Research Sponsor: Cardinal Health.

207  Poster Session
Comparing cancer survivors’ perceptions on lifestyle behaviors between adolescent-young adult (AYA) and middle-aged patients (pts). First Author: Spencer Soberano, University Health Network, Toronto, ON, Canada.

Background: Lifestyle behaviours such as smoking, physical activity, and alcohol consumption are important determinants of cancer survivorship. Previous studies have compared the lifestyle behaviours of elderly and middle-aged patients (pts), yet no studies have compared these behavioural perceptions between AYA and middle-aged patients. AYA pts (age 18-39 years) to those of middle-aged pts (age 40-64 years). Methods: Cancer pts across various tumour types at a comprehensive cancer centre were surveyed with respect to their perceptions of how their well-being was affected by smoking, physical activity and alcohol consumption after diagnosis. Univariate logistic regression models assessed factors associated with perceptions on the effect of various adverse lifestyle behaviours on health and well-being. Results: Of 200 AYA (57% female, 43% male) and 772 MA (56% female, 44% male) pts, a positive smoking history was reported by 33% of AYA and 48% of MA (P<0.001). At diagnosis, 55% of AYA and 59% of MA pts consumed alcohol, 16% of AYA and 16% of MA were ex-drinkers, and 28% of AYA and 25% of MA were never drinkers (P=0.62). Among AYA, 26% exercised compared to 20% in the MA group (P<0.01). The difference was (72-92%) of pts perceived that smoking and lack of physical activity after cancer diagnosis negatively affected quality of life, survival chances, and fatigue; there were no significant differences between age groups. In contrast, both age cohorts displayed misperceptions about how alcohol affects health, which was characterized by perceiving neutral or beneficial influence on their overall well-being: Fifty-seven percent of MA pts had a borderline greater misperception versus 49% of AYA pts (P=0.06). Misperceptions regarding how alcohol affects survival were observed in 49% of AYA pts and 58% of MA pts (P<0.005). Misperceptions regarding how alcohol affects fatigue was observed in 40% of AYA pts compared to 52% of MA pts (P=0.005). Furthermore, MA pts had 1.63 (95% CI 1.36-2.29) times the odds to have misperceptions regarding how alcohol affects fatigue, and 1.41 (95% CI 1.01-1.97) times the odds to have misperceptions on how alcohol affects survival compared to AYA pts. Conclusions: Both the AYA and MA population were not adequately informed about how alcohol affects cancer survivorship; with more misperceptions in MA pts. Results from this study advocate for survivorship programs to implement emphasis on the deleterious effects of alcohol consumption, with particular efforts tailored to the MA group. Research Sponsor: Lusi Wong Family Foundation, Alan B. Brown Chair in Molecular Genomics, Posluns Family meeting, CREMS program (University of Toronto).

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Projecting assessing risk of acute care utilization for patients with an active cancer diagnosis. First Author: Valerie Pracilio Csik, Sidney Kimmel Cancer Center, Philadelphia, PA

Background: Acute care utilization (ACU)–emergency department visits or hospitalizations—is common in patients with cancer. As many as 83% of all patients with cancer visit the emergency department annually; nearly three quarters of these visits for advanced cancer are due to symptoms of cancer diagnosis. Much of this ACU may be preventable. Identifying patients at risk for ACU utilizing model-based approaches has shown potential for risk stratifying certain patient subgroups. However, a model applicable to any patient with an active cancer diagnosis is needed. We developed a real-time clinical prediction model to assess risk for acute care utilization in patients with an active cancer diagnosis.

Methods: We completed a retrospective cohort analysis of patients with an active cancer diagnosis (defined as at least one medical oncology encounter in a 12 month period) at one health system. Clinical factors with potential to impact disease progression and ACU were identified through a clinical review. Significant variables were defined by multivariable logistic regression. Risk of ACU was further characterized through the development of a point scoring system to define the upper decile of patients at highest risk.

Results: We included 8,246 patient records in the analysis. Seven variables were determined to be statistically significant: An emergency department visit in the last 90 days, chronic obstructive pulmonary disease, congestive heart failure, chronic kidney disease, low hemoglobin, low albumin, and low absolute neutrophil count. The model produced an overall C-statistic of 0.726. Each significant variable was assigned a score of 0 or 1 (with the exception of ED visits, which were given one point for each visit, with three points maximum). Each patient received a total score, resulting from the summation of the individual variable scores. An evaluation of the distribution of points determined that 10% of the patients achieved a score of 2 or higher and contributed to 46% of ACU in the last 90 days. Patients receiving 0 points were defined as low risk (73% of patients contributing to 30% of ED/admissions). Patients receiving 1 point were deemed intermediate risk (17% of patients contributing to 24% of ED/admissions).

Conclusions: Risk of acute care utilization for patients with an active cancer diagnosis can be prospectively assessed. This tool is currently integrated into our clinical practice and is updated every 14 days, or any time the chart is accessed. Assessment of efficacy is ongoing.

Research Sponsor: None.

Strategies for comprehensive implementation of survivorship care: A qualitative analysis of CoC-accredited cancer programs. First Author: Soohyun Hwang, University of North Carolina Chapel Hill, Chapel Hill, NC.

Background: The Commission on Cancer (CoC) seeks to promote comprehensive approaches to implementing survivorship programs among accredited cancer programs. In practice, cancer programs’ approaches range from cursory (e.g., developing care plans without robust services) to comprehensive (e.g., facilitating follow-up care). This study identified strategies that were unique to cancer programs with comprehensive approaches to implementing survivorship programs. Methods: We sampled 39 CoC-accredited cancer programs with approaches to survivorship program implementation ranging from cursory to comprehensive, as reported in CoC annual surveys. Within sampled cancer programs, we conducted in-depth semi-structured interviews with a total of 42 healthcare professionals (1-2/program). We identified strategies unique to cancer programs with comprehensive approaches by comparing them to cancer programs with cursory approaches. Results: Cancer programs with comprehensive approaches to implementing survivorship programs had formal committees with ample opportunities to evaluate the process, review roles, and acquire multiple stakeholders’ support. Keeping a good record system enabled these cancer programs to meet accreditation requirements and improve processes. Buy-in from upper management and key physicians was deemed crucial in leveraging cancer program resources. These programs also had roles with shared accountability among multidisciplinary groups. Like cancer programs with comprehensive approaches to implementing survivorship programs, many cancer programs with cursory approaches also had formal committees; however, cancer programs with cursory approaches lacked buy-in from key stakeholders, relying on few staff or a champion for implementation. Cancer programs with cursory approaches had limited resources, cumbersome processes, and team members with unclear roles. Conclusions: Cancer programs contributing comprehensive approaches to survivorship program implementation gained broad stakeholder buy-in and established clear team member roles with shared accountability. Study findings will inform more than 1,500 CoC-accredited US cancer programs’ approaches to implementing survivorship programs. At the conference, we will have results from quantitative and measures validation companion studies. Research Sponsor: Alliance.

Reducing the wait time to initiate inpatient chemotherapy at Lyndon B. Johnson Hospital. First Author: Andrew James Wiel, University of Texas MD Anderson Cancer Center, Houston, TX

Background: Delays in initiating inpatient (inpt) chemotherapy (chemo) for planned admissions can decrease patient (pt) satisfaction and increase length of stay and healthcare costs. Our center, a community public teaching hospital, lacks a standardized inpt chemotherapy protocol. Delays were resulting in significant delays. We developed a process improvement initiative to reduce the pt wait time from admission to chemo administration (time to chemo (TTC)).

Methods: A multidisciplinary team was formed to clarify workflow, standardize processes, and develop a scheduled chemotherapy protocol. We implemented two Plan-Do-Study-Act (PDSA) cycles over a 6-month period. First, in early March, we collaborated with pharmacy and nursing to standardize the inpt chemo operating procedures and extend pharmacy’s evening hours for chemo preparation (prep) from 7pm to 9pm. Second, in early June, we implemented a Pre-admission Checklist that was visibly displayed in clinic for fellows to review with faculty, and began discussing pts scheduled for admission during the daily, multidisciplinary huddle that already occurred on the inpt chemo unit. Using the electronic medical record and available time stamps, baseline data was collected from November-December 2019, post-intervention data for PDSA cycle 1 was collected from March-April 2020, and data collection for PDSA cycle 2 is ongoing.

Results: Root cause analysis identified late afternoon admissions and PICC line placements as two main sources for TTC delays. Hospital procedures also limited inpt PICC line placement between 8am-4pm and inpt chemo prep between 7am-7pm. Baseline data revealed 77.4% (24/31) of pts were admitted between 3pm-10pm, the median TTC was 20.4 hrs, and 6.5% (2/31) of pts had chemos stratified as high risk (>12 hrs TTC; < 12). Admissions 56.5% (26/46) of pts had PICC lines placed during their admission, but 69.2% (12/18) of the pts with PICC lines were eligible for outpatient port placement according to institutional venous access guidelines. After PDSA cycle 1, median TTC decreased by 10% to 18.4 hrs, and 33.3% (5/15) of pts had TTC < 12.

Conclusions: After standardizing inpt chemo procedures and extending chemo prep times, PDSA cycle 1 resulted in a 10% reduction in TTC and a 26.8% increase in the rate of TTC < 12. Although admission times cannot be limited, the impact of inpt PICC line and chemo prep times specifically addressing IV access, for PDSA cycle 2 is currently being evaluated and will be reported at the time of abstract presentation. Research Sponsor: None.
212 Poster Session

Decreasing the number of authorization denials in an academic medical oncology practice. First Author: Monaliben Patel, University Hospitals Cleveland Medical Center, Cleveland, OH

Background: Prior authorizations in medical oncology generate additional work and subsequent stress to providers, contributing to physician burnout. Denials of payments can also impact patient care and lead to loss of revenue for the institution. Methods: In the current system, we first pass denial, then re-submitted to our institution. Imaging/scans denials created the majority of this additional work for providers. We aimed to decrease the monthly first pass denial rate average of oncology scans by 25% by May 31, 2020. Methods: Following the creation of a process map of the current prior authorization process and a cause and effect diagram, we identified many factors that could not be controlled (i.e. insurance company policies). We subsequently created a priority/pay-off-matrix using factors that we could control. Creating a standardized order template for oncology scans was identified as a high impact and feasible countermeasure. Plan-do-study-act cycles (PDSA) plan was developed using this countermeasure to achieve our aim. PDSA1 included creating template for order entry, educating the nurse partners and advance practice providers (APPs). PDSA 2 included educating physicians and measuring the compliance rate of the template. PDSA 3 addressed the barriers for compliance and education on resources was provided. PDSA 4 included education of the prior authorization staff and reinforcement of template use. A sustainability plan created consisting of a designated RN liaison for review of peer-to-peer requests for oncology scans. Results: PDSA1: 100% of the nurse partners and APPs were educated. PDSA2: 80% of physicians were educated and 32.8% compliance rate of template use. PDSA 3: 39.2% compliance. PDSA 4: 89% of the prior authorization staff was educated. With a compliance rate for the standardized order template use did increase, we identified many other opportunities to improve the process. Unfortunately, due to COVID-19 pandemic outbreak, resources have been temporarily allocated to related efforts and the sustainability plan continues to be a work in progress. Conclusions: Peer to peer requests for imaging/scans following authorization denials consume time and effort of providers contributing to burnout and potentially impacting patient care. While many factors cannot be controlled, standardizing the ordering process and educating the involved personnel may decrease the number for peer to peer requests. ASCO’s quality training program helped our institution identify a provider controlled barrier and helped standardize this approach. Research Sponsor: None.

213 Poster Session

Factors determining oncology on-call service utilization and implications for quality improvement. First Author: Marta Wioleta Wronska, Department of Medicine, Division of Oncology-Hematology, NYU Long Island School of Medicine, Perlmutter Cancer Center, NYU Winthrop Hospital, Mineola, NY

Background: Most ambulatory oncology practices utilize an on-call service that is essential for continuity of care after office hours, yet there is limited literature about the economics of this care delivery model and how to improve it from a quality standpoint. We hypothesize that patients with more advanced cancers are more likely to require the on-call service due to acute symptoms arising during their treatment, and that this information can be used to create a risk model to predict subsequent hospitalization. Methods: We performed a single-center, retrospective review of sequential overnight and weekend calls received by an oncology practice with 16 physicians over a 20-week period from January-May 2020. Calls were classified as being either urgent, requiring immediate attention, or non-urgent, which could be addressed during office hours. Data were summarized using descriptive statistics, continuous and categorical variables were compared using Wilcoxon rank-sum test and Fisher’s exact test, respectively. Multivariate analyses were estimated by logistic regression using the penalized maximum likelihood method. Results: The data included 236 consecutive calls among 176 patients, with 65% females and median age of 68 years (range: 25-87). Of these, 185 calls (78.4%) were deemed urgent, among which 139 (75%) were symptom-related. Among the 202 calls (85%) from patients with cancer, 164 (68%) of which were urgent, mostly due to symptoms (82% of these urgent calls, 44% (27%) resulted in admission within 24 hours (P < 0.0001), primarily related to treatment toxicity or disease progression (81%). Patients with stage 4 cancers (42%) or hematologic malignancies (28%) were more likely to have the on-call service and treatment. There was no significant difference between urgent call severity and treatment regimen (P = 0.06). In a multivariable model, advanced age (OR = 1.03(1.0-1.07)) and urgent calls (OR = 33.1(2.4-401.01)) were independently associated with risk of hospitalization. Of note, there were no observed admissions before office hours in the patients included in our analysis. Conclusion: We identified an association between after-hours calls and more advanced malignancy, which was independent of treatment regimen. The majority of on-call issues were urgent and symptom-related, with advanced age being the most common factor associated with admission. These results suggest that strategies can be developed to prevent hospitalizations in patients at higher-risk for adverse events based on a multivariable risk model. Research Sponsor: None.

214 Poster Session

Admission to the ICU in the last 30 days of life and systemic antinecancer therapy in the last two weeks of life at Lifespan Cancer Institute (LCI). First Author: Han You, Rhode Island Hospital, Providence, RI

Background: The ASCO Quality Oncology Practice Initiative identifies ICU admission in the last 30 days of life and systemic anticancer therapy in the last 2 weeks of life as indicators of overly aggressive end-of-life care. We sought to delineate clinical factors associated with these indicators. Methods: An IRB-approved retrospective chart review was performed on patients with solid tumors at LCI who died in timepoints ending in January, July and November of 2016 and 2017. Patients were identified through our tumor registry. Patients' medical records were reviewed for cancer stage, care received, palliative care contacts, and ICU admission in last 30 days, and receipt of systemic anticancer therapy (excluding antithrombolytic therapy) in last 6 months and 2 weeks of life. Results: A total of 250 patients were included in our analysis. 18.8% of LCI patients were admitted to the ICU in the last 30 days of life, 12.8% received systemic anticancer therapy in the last 2 weeks of life, and 19.2% experienced death in the hospital. Significant factors associated with an ICU admission in the last 30 days of life were a diagnosis of lymphoma compared to breast, gynecologic, gastrointestinal, lung, genitourinary, hematologic or benign disease (H&N) (40.6% vs 16.1%; P < 0.001), and age < 45 years at time of metastatic disease compared to age 46-65 or age ≥ 66 (50.5% vs 15.9% vs 18.1%; P < 0.05). A significant factor associated with systemic anticancer therapy in the last 2 weeks of life was age ≤ 45 years at time of metastatic disease compared to age 46-65 or age ≥ 66 (37.3% vs 16.9% vs 9.4%; P < 0.05). Lastly, a significant factor associated with death in the hospital was lack of palliative care team contact (28.9% vs 15%; P < 0.05). Conclusions: Understanding factors associated with intensive care at the end of life is critical to the provision of value-based cancer care. In this study, a diagnosis of lymphoma, systemic anticancer therapy in the last 2 weeks of life, and age < 45 years at time of metastatic disease were associated with increased mortality in the last 30 days of life. Age ≤ 45 years at time of metastatic disease was associated with systemic anticancer treatment in the last 2 weeks of life, while lack of palliative care involvement was associated with greater chance of death in the hospital. Further understanding of the complex interplay that governs care and decision making at the end of life is required. Research Sponsor: None.

215 Poster Session

Is inpatient chemotherapy overutilized? First Author: Natalie S Berger, Icahn School of Medicine at Mount Sinai, New York, NY

Background: Inpatient palliative chemotherapy has been associated with more aggressive end of life care, reduced utilization of hospice services and decreased quality of life. The decision to administer chemotherapy in the inpatient setting is not always standardized which may lead to overutilization. Methods: We performed a retrospective chart review of all patients who received inpatient chemotherapy at an academic center during the year 2016. Patients were stratified by solid tumor (ST) versus hematologic malignancies (HM) and assessed for the urgency of chemotherapy. We also evaluated response to treatment, death within 30 days of chemotherapy administration, and other qualitative and quantitative variables. We used descriptive statistics and odds ratios (OR) were estimated from logistic regression models. Results: We identified 141 patients; 47% HM. HM had a lower urgency of chemotherapy as compared to ST. OR for urgent chemotherapy was 3.4 (95% CI 1.5-7.5), p=0.002). A significant outcome was symptom control (65% vs 24%; p=0.001) and to die within 30 days of chemotherapy (OR=4.1, 95% CI 1.2-13.5, p=0.02). Conclusions: Our study indicates that there is an overutilization of inpatient chemotherapy in ST patients as well as increased mortality within 30 days of inpatient chemotherapy administration compared to HM. The administration of inpatient chemotherapy can be avoided in many cases which can lead to improved quality of life and cost savings. Creation of a standardized algorithm on the appropriate use of inpatient chemotherapy may be a useful tool to guide decision making. Research Sponsor: None.
216  Poster Session  
The impact of social determinants on receipt of colonoscopy in an under-resourced hospital service area: A retrospective cohort study.  
First Author: Amina Dhahri, University of Maryland Capital Region Health, Internal Medicine Department, Cheverly, MD  
Background: Although colorectal cancer (CRC) screening with colonoscopy reduces the risk of CRC mortality, screening rates remain low among African Americans and low socio economic status (SES) patients. However, few studies have assessed CRC screening rates in under-resourced hospital service areas. Using a granular measure of socioeconomic deprivation (SED), we examined the associations between social determinants and CRC screening.  
Methods: We conducted a retrospective cohort study from 2014-2019 to identify primary care patients referred for CRC screening with colonoscopy at an academic hospital system. Patients were identified using annual visits for completion of colonoscopy. SED was assessed using the area deprivation index (ADI), a composite measure of 17 SED indicators including income, housing, education, and employment at the census block group level. Other social determinants analyzed were race and insurance status. Frequency and multivariable logistic regression were used for statistical analysis. Results: 1040 patients met CRC screening guidelines and were referred for colonoscopy, 136 (13.1%) underwent colonoscopy in the follow-up period. High and low SED made up 65% (63%) and 77 (74.4%) of patients, respectively. SED, race, age, sex were not associated with higher screening rates. Uninsured patients had a lower rate of screening. After controlling for other social determinants, uninsured patients had the lowest odds of colonoscopy (OR 0.28; 95% CI, 0.08-0.92).  
Conclusions: In this under-resourced hospital service area, receipt of colonoscopy for CRC screening is significantly lower than previously reported. Furthermore, screening rates were not differently low across strata of SED, race and insurance status, with uninsured patients having the lowest odds of screening. These data suggest that in an under-resourced hospital service area with extensive SES, further research is needed to understand the role of social determinants and behavioral factors to address disparities in CRC screening with colonoscopy.  
Research Sponsor: None.  
Table: Relative odds of colonoscopy: Multivariable logistic regression  
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217  Poster Session  
Identifying high-risk features for readmission in patient with metastatic solid tumor malignancies at an academic community hospital.  
First Author: Nathan Reuben Teich, Winthrop Oncology Hematology Associates, Mineola, NY  
Background: Readmission of oncology patients to hospitals is an undesirable outcome for both the patient and healthcare system. These can lead to delays in treatment and increased resource utilization. 30-day readmission have been a target of multiple national quality initiatives. Adverse outcomes have been associated with readmission in multiple patient populations. The aim of this study was to perform a qualitative and quantitative analysis on inpatient surgical and medical oncology readmissions to an academic community hospital. Additionally, identifying additional risk factors for readmission such as need for fluid drainage and rate of palliative care involvement were assessed.  
Methods: Using ICD-10 codes, 183 patients were identified as being readmitted within 30 days with an oncological diagnosis from January 2019-December 2019. Only the most recent readmission was included for review. 25 of these patients were selected at random for manual chart review to generate data. Results: In the 54 patients who underwent detailed review, 21 were identified as having stage IV metastatic solid tumor disease primarily under the care of a medical oncology team. Common factors identified for readmission included malignant abdominal ascites (6 patients), thoracic pleural effusions requiring drainage (5 patients), CNS/spinal metastases (4 patients). Palliative care was consulted in the index admission in 48% of cases after readmission in patients with high risk solid tumor diagnosis. 17/21 (81%) of patients were discharged on a weekend. Examples of preventable readmissions included identified inadequate treatment hypercalcemia of malignancy and cerebral edema due to brain metastases discharged with insufficient corticosteroid dosing. Conclusions: The high-risk features identified (e.g. recurrent malignant ascites) may benefit from novel systems-based approaches (e.g. EMR alerts, daily oncology/palliative care team huddle to discuss high risk patients). Most patients readmitted to the oncology service with metastatic disease were not discharged in the weekend days. Identification and under-utilization of palliative care during the index admissions for these oncology patients with known metastatic disease. Further quality initiatives will be directed at creation of a risk score for readmission in this subset of patients with high disease burden.  
Research Sponsor: None.  

218  Poster Session  
Disparities between provider assessment and documentation of care needs in the care of adolescent and young adult patients with sarcoma.  
First Author: Grace Eileen McKay, University of Wisconsin Carbone Cancer Center, Madison, WI  
Background: Given the occurrence of cancer during a complex developmental time, adolescent and young adult (AYA) patients have unique psychosocial needs, necessitating supportive care guidelines including National Comprehensive Cancer Network (NCCN) AYA guidelines. We sought to assess compliance with NCCN AYA guidelines and compare to oncology provider identified AYA care needs.  
Methods: Retrospective chart review was performed on AYA patients (15-39 years) with sarcoma at a single institution, identifying documentation of discussions deemed critical per NCCN AYA guidelines. As per ASCO’s Quality Oncology Practice Initiative, we considered a threshold of 75% of patients to be compliant. Compliance was analyzed were race and insurance status. Frequency and multivariable logistic regression were analyzed. In patients with metastatic solid tumor disease, 17/21 (81%) of patients had documentation regarding contraception, fertility, finances, genetics, social work referral and clinical trials indicating non-compliance. Surveys, completed by 38 oncology providers, showed significant discordance between provider’s perception of adequate access to resources and compliance on chart review. Conclusions: Disparities between oncology provider assessment of AYA care needs and lack of documentation of critical components of AYA care demonstrates the need for novel tools to evaluate AYA care needs beyond provider assessments. Care needs identified in our study will serve as the basis of an ongoing quality improvement project to better support AYA patients at UW. Research Sponsor: University of Wisconsin-Madison School of Medicine and Public Health Shapiro Summer Program Research.  

219  Poster Session  
Defining and measuring quality cancer survivorship care: An environmental scan.  
First Author: Lena Ly, The University of Melbourne, Parkville, VIC, Australia  
Background: It is recognised that current models of survivorship care are suboptimal and unsustainable. The landmark Institute of Medicine (IOM) report ‘From Cancer Patient to Cancer Survivor: Lost in Transition’ suggested four essential components of survivorship care: prevention of recurrent and new cancers; surveillance for second cancers; support for psychosocial aspects of living with cancer; and recognition of the economic and social consequences of cancer and its treatment, and coordinated care between health providers. The report also recommended “quality of survivorship care measures should be developed...and quality assurance programs implemented to monitor and improve them”. All such data are currently lacking and the IOM (2019) built on the IOM’s recommendations to develop a quality of cancer survivorship care framework. We undertook an environmental scan to understand how quality survivorship care is conceptualised internationally, and what metrics are available. Methods: This scan comprised limited literature review, review of organisations’ websites, and expert consultation to source documents that described and measured quality survivorship care. Documents were assessed against the domains proposed by Nekhlyudov et al. Metrics were categorised as policy, process or outcome measures. Results: The search yielded 40 documents from six countries. There was agreement that quality survivorship care is founded on the IOM elements, expanded by Nekhlyudov et al. The review also noted risk stratification/ personalised pathways of care and patient self-management as other elements of quality care. Many countries have proposed or implemented quality measures, with greater emphasis on processes over outcome assessments. Only the USA was found to have implemented policy measures. In the process domain, frequently reported metrics included completion of needs assessments and survivorship care plans, and adherence to recommended follow up guidelines. Regarding outcome measures, patient-reported outcomes included completion of needs assessments and survivorship care plans, and adherence to recommended follow up guidelines. The IOM agreed that agreement on what constitutes quality survivorship care internationally. Future work should consider policy or structural elements that support optimal care. Findings from this scan will inform a modified reactive Delphi study to establish consensus-based criteria for high quality survivorship care. Additional work should consider how to define and implement metrics in survivorship care, and how to use metrics to improve survivors’ outcomes.  
Research Sponsor: Department of Health and Human Services Victoria.
220 Poster Session
ECO Experts’ consensus on establishing renal cancer healthcare quality measures in Spain. First Author: Vicente Guillén, Fundación ECO, Medical Oncology Service, Instituto Valenciano de Oncología, Valencia, Spain

Background: The ECO Foundation (Excellence and Quality in Oncology) proposes to establish a set of healthcare quality measures (including indicators and standards) for the diagnosis, treatment and follow-up of renal cancer in Spain which all healthcare professionals involved can assume, being suitable for implementation in the continuous improvement process of our healthcare system. Methods: a) International literature review on the quality of healthcare in renal cancer; b) multidisciplinary driving group (9 oncologists with expertise in renal cancer plus 2 methodologists) to identify and choose possible quality measures to be applied in Spain; c) global evaluation of the relevance of these measures through experts’ consensus (Delphi modified by a stratified state panel, n = 55 oncologists specialized in renal cancer); d) selection of definitive measures, according to their feasibility and efficiency (information provided/effort in obtaining it) using a quantitative online prioritization of definitive measures, according to their feasibility and efficiency; e) standard wording of the chosen measures: definition, indicator, sources of information, exclusions, clarifications, categorization and acceptable standard. Results: The nominal group proposed 43 quality measures for the Delphi panel. Consensus agreement rate = 84.5% (47/55). The professional consensus was reached on 40 measures (4 structural, 33 in healthcare procedures and 3 in clinical results). Therefore, there is a high level of consensus (93%) among Spanish oncologists who specialize in renal cancer on the content of the healthcare quality measures in the management of renal cancer. The final measures were chosen using a high confidence level (95%) in the unanimity of the experts (oncologists in the driving group) for prioritization depending on the feasibility and efficiency in the healthcare system. Finally, 25 measures were chosen (2 structural, 20 in procedures and 3 in results). Conclusions: The level of consensus and prioritization of measures achieved, will most likely translate in a widespread acceptance and viability for implementation in the National Health System. This could provide a valuable tool for quality assessment and equality in the care of renal cancer patients in Spain. Research Sponsor: Bristol-Myers Squibb.

221 Poster Session
Oral chemotherapy education: Hitting the mark? First Author: Jonathan L Berry, Beth Israel Deaconess Medical Center, Boston, MA

Background: ASCO’s Quality Oncology Practice Initiative (QOPI) includes process measures on oral chemotherapy education. Whether achievement of these measures has an impact on clinical outcomes and if an intervention to improve these measures can improve outcomes is not yet known. Methods: A retrospective analysis was conducted of patients initiated on oral chemotherapy in an academic medical center site and a community oncology practice between January 2016 and October 2019. The primary aim was to compare the time to emergency department (ED) within 90 days from initiation of oral chemotherapy of patients who met the QOPI process measure through an intervention of pharmacist-driven education with a comparison group of patients who had not received formal education. A secondary aim was to assess for a difference in oral chemotherapy medication persistence. Data were also analyzed by demographics, concurrent parenteral therapy, intent of therapy, and disease group. Results: 285 patients in the education group and 284 patients in the non-education group. The education group had a higher proportion of patients with gastrointestinal and genitourinary cancers, and a lower proportion of patients with hematologic malignancies, compared to the non-education group. The education group also had a higher proportion of patients treated at the community practice compared to the non-education group. There was no statistical difference in median time to ED, with 49 days (IQR 37-74) in the education group and 59 days (IQR 41-60) in the non-education group (p=0.15). Conclusions: In patients receiving oral chemotherapy, pharmacist-driven education with improvement in QOPI process measures did not result in an improvement in time to ED. One factor contributing to this result may be that only 20% of patients required ED-level care within 90 days of starting oral chemotherapy. We continue to collect data regarding medication persistence, which may be a more sensitive outcome measure. At this point, further work is needed to determine if achievement or modification of the QOPI oral chemotherapy process measures results in a clinically significant change in outcome. Research Sponsor: Massachusetts Society of Clinical Oncologists.

222 Poster Session
Evaluation of Spanish hospitals participating in the Quality Oncology Practice Initiative program. First Author: Rafael Lopez, Fundación ECO, Medical Oncology Service, Hospital Clínico Universitario de Santiago de Compostela, Santiago De Compostela, Spain

Background: Measuring and tracking quality of care is highly relevant in today’s healthcare. The Quality Oncology Practice Initiative (QOPI) program is a referral for evaluating oncology practices worldwide. The ECO Foundation (Excellence and Quality in Oncology), a collaboration of oncology experts from the major Spanish hospitals involved in cancer treatment, reached an agreement with ASCO (American Society of Clinical Oncology) to include Spanish hospitals in its QOPI program. Methods: We analyzed the results of the QOPI core module measures from 19 Spanish hospitals submitting their data in nine rounds (from Fall 2015 to Fall 2019). Results: Of the 19 hospitals, 15 participated more than once; none participated in all 9 rounds (2 hospitals participated in 8 rounds). The highest scores were for pathology report confirming malignancy, documenting plan of care for moderate/severe pain and chemotherapy dose, and chemotherapy administered to patients with metastatic solid tumor with performance status undocumented. Measures regarding a summary of chemotherapy treatment, tobacco use cessation counseling, and assessment of patient emotional well-being were among the lowest scored measures. Six of the 15 practices who participated repeatedly achieved a better score in their last round compared to their first. Overall, scores of Spanish hospitals improved from 67.79% in Fall 2015 to 68.91% in Fall 2019. Conclusions: This is the first study to evaluate QOPI scores in Spain; it showed that repeated participation enhances quality of care, although there is room for improvement. The ECO Foundation will continue supporting and engaging with practices to increase their participation in order to improve oncology care and implement strategies that address the areas for improvement in Spain. Research Sponsor: Bristol-Myers Squibb, Mundipharma and Novartis.

223 Poster Session
Barriers and facilitators to implementation of serial point-of-care hearing tests using a novel iPad-based audiometry in platinum chemotherapy-treated cancer patients (pts). First Author: Spencer Soberano, University Health Network, Toronto, ON, Canada

Background: Platinum-based chemotherapy agents cause significant hearing loss in 40–80% of treated cancer pts. Lack of follow-up serial testing has created gaps in knowledge regarding hearing loss onset, progression, and possible recovery between treatment cycles. This study aims to determine barriers and facilitators to implementation of a strategy of routine serial hearing test, as a serial screening tool to address these knowledge gaps. Methods: From Jul 2019 to Mar 2020, 53 pts receiving high dose platinum agents were recruited from three clinics (Thoracic, head and neck, and testicular cancer) at a comprehensive cancer centre, to undergo serial audiometry testing. Baseline hearing tests, mid cycles (3, 6, and 9 weeks), and post treatment tests (3, 6, 9, 12, 19 and 24 months) were completed during the pts’ clinic appointments. Clinical research coordinators (CRCs) collected feedback from physicians, nurses, and pts to identify barriers and facilitators of implementing serial point-of-care hearing tests in these clinics. An inductive and iterative approach was used to identify themes. Implementation was tailored and mapped to the CIHR Knowledge to Action Framework (KTA).

Results: Barriers: Logistical barriers included locating quiet and accessible rooms to administer the test; pts being distracted or interrupted while completing the test; presence of family members adding to noise levels; concerns over the serial testing during treatment; length of each test; and clinic staff burden. Facilitators: User-friendly self-administered tests; increasing healthcare staff education and pt management. Adapting to the local context: Logistical barriers were resolved by CRCs designating quiet spaces for the study to occur, and meeting pts upon arrival to utilize their wait time. A ‘hearing test in progress’ sign put on exam room doors prevented interruptions. CRCs utilized the test’s ‘assisted mode’ feature to keep pts attentive and/or accelerate the process. Low noise level was emphasized to obtain accurate test results. Pt engagement in their test results facilitated retention in the study. Length of each test shortened in the future by omitting low frequency testing. Conclusions: Participants and stakeholders expressed support for in-clinic hearing tests and identified personal and systematic barriers to implementation. These findings suggest that implementation should focus on addressing concerns related to accessible rooms, pt time investment and overall clinic flow. Research Sponsor: Alan B. Brown Chair in Molecular Genomics, CREAMS program (University of Toronto).
224  Poster Session
Improving medication reconciliation in ambulatory cancer care. First Author: Carissa Milley-Daigle, University Health Network, Toronto, ON, Canada

Background: Adverse drug events are common in ambulatory oncology where care spans multiple providers and medication documentation is often poor. We undertook a QI project with the aim of having 30% of patients have a best possible medication history (BPMH) or medication reconciliation (MedRec) documented within 30 days of starting systemic therapy. Methods: An Electronic Medical record-Integrated Tool (EMITT) was developed to facilitate documentation. 2 Plan-Do-Study-Act (PDSA) cycles have been completed to date; PDSA 1 consisted of piloting EMITT in 3 clinics run by physician champions. PDSA 2 which consisted of expanding pharmacy support and addition of a 4 th clinic was impacted by care changes related to COVID. The proportion of patients with BPMH/MedRec documented in EMITT was calculated monthly for each period (PDSA 1, PDSA 2 pre-COVID and PDSA 2 post-COVID). The balancing measure of time to complete an entry was evaluated through a time motion study. Results: Between 9/9/2019 and 3/1/2020, 9.4% (233/2488) of patients had BPMH/MedRec completed; Table shows proportion of patients by month. BPMH and MedRec were most frequently performed by pharmacists followed by pharmacy students and nurses. On average, it took 5.5 minutes to complete an entry (n = 10; median number of medications per patient = 12.3). Conclusions: BPMH was documented more often than MedRec. While some usage was sustained, the changes to care as a result of COVID-19 negatively impacted ambulatory medication reconciliation. Future PDSA cycles will involve engaging patients in MedRec and extending EMITT to all ambulatory cancer clinics where medication management is a major component of care. Research Sponsor: Princess Margaret Cancer Foundation.

<table>
<thead>
<tr>
<th>Period</th>
<th>Month</th>
<th>BPMH (%)</th>
<th>MedRec (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDSA 1</td>
<td>Sept  (n=247)</td>
<td>1.2</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Oct (n=273)</td>
<td>5.2</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>Nov (n=268)</td>
<td>4.5</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>Dec (n=276)</td>
<td>7.8</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>Jan (n=320)</td>
<td>6.5</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Feb (n=280)</td>
<td>17.9</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Mar (n=307)</td>
<td>9.1</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Apr (n=291)</td>
<td>2.1</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>May (n=227)</td>
<td>6.3</td>
<td>0.4</td>
</tr>
<tr>
<td>PDSA 2 Pre COVID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb (n=280)</td>
<td>17.9</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Mar (n=307)</td>
<td>9.1</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Apr (n=291)</td>
<td>2.1</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>May (n=227)</td>
<td>6.3</td>
<td>0.4</td>
</tr>
<tr>
<td>PDSA 2 Post COVID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb (n=280)</td>
<td>17.9</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Mar (n=307)</td>
<td>9.1</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Apr (n=291)</td>
<td>2.1</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>May (n=227)</td>
<td>6.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

a. BPMH= documentation of name, dose, frequency and route for all non/prescription medications, vitamins and supplements. b. MedRec= evaluation of potential issues with medications following additions, changes or discontinuations.

225  Poster Session
4R Care Delivery Program results: Impact of implementation metrics on patient self-management and 4R usefulness. First Author: Julia Rachel Trosman, Center for Business Models in Healthcare, Chicago, IL

Background: We previously proposed a 4R care delivery model that facilitates teamwork and patient self-management (pSM) in cancer care (I) ASCO Teams Project, Trosman JOP 2016). 4R (Right Info / Care / Patient / Time) enables patient and care team to manage complex care with an innovative 4R Care Sequence. We tested 4R at 10 US sites in a stepwise mode 2016-2019. Methods: Step 1 included 1 academic and 2 nonacademic sites; step 2 included 3 academic and 4 nonacademic sites. Patients with stage 0-II breast cancer received 4R Sequences (4R Cohort). We surveyed 4R and historical control cohorts of patients treated at the same sites pre-4R. We assessed the impact of implementation metrics on usefulness of 4R to the 4R cohort and on improvement of pSM in 4R cohort vs historical control cohort. Results: Survey response rates: 63%, 422/670 (4R cohort); 47%, 466/992 (control cohort). Three of the five implementation metrics significantly impacted patient usefulness of 4R (Table). Patients at step 2 sites; sites with a systematic care process; and sites with small practices reported significantly higher 4R usefulness than patients in the comparison subgroup within respective metrics. 4R usefulness was not affected by practice setting or availability of patient navigators. pSM was significantly improved between control and 4R cohorts along all implementation metrics (p < .001), but the magnitude of incremental improvement between comparison subgroups varied across metrics (Table), with the largest increment associated with the program step metric. Conclusions: 4R is useful to patients across settings, with or without patient navigators. Stepwise design is effective in increasing 4R impact overtime. Future 4R Program will investigate an expanded array of implementation metrics and their influence on 4R outcomes. Research Sponsor: None.

<table>
<thead>
<tr>
<th>Implementation metric</th>
<th>Comparison subgroups of patients for each implementation metric % of patients in 4R cohort who found 4R useful in one comparison subgroup vs other, p value</th>
<th>Incremental improvement in % of high pSM* from historical control to 4R cohort in one comparison subgroup vs other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program step</td>
<td>Care process: Accrued at site with a systematic care process vs site without</td>
<td>75% vs 84%, .02</td>
</tr>
<tr>
<td>Practice setting</td>
<td>Practice setting: Accrued at small vs big practice</td>
<td>85% vs 75%, .01</td>
</tr>
<tr>
<td>Site resources</td>
<td>Site resources: Accrued at site with patient navigators vs without</td>
<td>80% vs 79%, .7</td>
</tr>
</tbody>
</table>

*High pSM composite pSM score > 2.8, on 0-4 scale

226  Poster Session
Providing uninterrupted oral oncolytic therapies during the COVID-19 pandemic. First Author: Edward Arrowsmith, Tennessee Oncology, Nashville, TN

Background: Uninterrupted utilization of oral oncolytics is critical to maximizing safety and efficacy of cancer treatment. The COVID-19 pandemic presented numerous challenges to delivering a continuous and safe supply of oral oncolytics to patients with cancer including potential loss of insurance coverage, patient lost income, making copays more difficult, remote pharmacy staffing difficulties, and logistical challenges in safely distributing drug to cancer patients. Tennessee Oncology has an in-house Specialty Pharmacy that utilizes home delivery of oral oncolytics while coordinating care with providers during changing patient situations. Methods: We analyzed patients who received an oral oncolytic from our pharmacy in two periods: January-May 2019 and January-May 2020. We compared the aggregate patient copay amounts during these periods, the number of patients who utilized copay assistance or foundational financial support. For insights on continuation we also assessed the medication possession ratios (MPR, the sum of the day’s supply for all fills of a drug in a particular period divided by the number of days in that period) during these time periods for five of our most commonly dispensed drugs. Results: The aggregate patient copay was similar between the two time periods. A 22% increase in utilization of copay cards indicated patient’s insurance coverage was sustained. We also observed a 12% increase in the number of patients utilizing foundation support for prescriptions filled. MRPs for five commonly dispensed oral oncolytics were unchanged during COVID-19. Conclusions: Our in-house specialty pharmacy maintained delivery of oral oncolytics during the COVID-19 pandemic. Patient cost share was contained by our pharmacy staff proactively utilizing copay cards for all eligible patients and diligently securing foundational grant support. The pharmacy interventions allowed for affordability, uninterrupted pharmacy operations, and consistent medication supply. This led to continued medication adherence. MPR for the 5 top dispensed medications was consistent in a year-on-year comparison.

<table>
<thead>
<tr>
<th>Drug</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenalidomide</td>
<td>94.29%</td>
<td>94.64%</td>
</tr>
<tr>
<td>Palbociclib</td>
<td>94.85%</td>
<td>94.35%</td>
</tr>
<tr>
<td>Irinotecan</td>
<td>95.91%</td>
<td>96.37%</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>94.05%</td>
<td>92.14%</td>
</tr>
<tr>
<td>Aminophylline</td>
<td>97.92%</td>
<td>94.53%</td>
</tr>
<tr>
<td>OVERALL</td>
<td>95.33%</td>
<td>94.86%</td>
</tr>
</tbody>
</table>

Research Sponsor: None.

227  Poster Session
Moving palliative care upstream for patients diagnosed with head and neck cancers. First Author: Tamara M Day, University of Missouri, Columbia, MO

Background: Adults with cancer face complex treatment choices and symptom burden that impact their quality of life. Goals of palliative care (PC) are to reduce symptom burden and improve quality of life. Strong evidence exists that PC helps reduce symptom burden, decreases hospital utilization, and improve quality of life. Yet, PC remains underutilized, especially in the context of cancer care. Methods: This descriptive longitudinal study evaluated whether use of a psychosocial distress screening tool would help identify patients eligible for PC. A convenience sample of adults with diagnosis of head and neck cancers presenting to an otolaryngology clinic, located in the cancer center of a Midwestern academic health system, were screened for eligibility for PC referral. If eligible, the provider was notified and introduced PC to the patient. Upon acceptance, a PC referral was ordered. The project consisted of baseline (n = 61) and follow-up chart reviews (n = 60) of patients seen in clinic during over a 3-month period. Results: We found an increase in PC referrals from 14.6% at baseline to 30.8% in follow-up, a 227% increase. Psychosocial distress screenings increased from 5% at baseline to 45% in follow-up, an increase of 200%. Of patients who received a PC referral, 85.6% accepted. There were statistically significant differences found between the pre- and post-intervention groups for marital status, χ² (3) = 9.67, (p = .02); and cancer stage χ² (4) = 21.35, (p = .00) with increased referrals for married patients at higher cancer stages in the prospective group. Conclusions: This study has shown physicians maybe more likely to offer PC referrals based on cancer stages, and not based on psychosocial distress symptoms. Potential barriers to early referral to PC were identified and could serve as useful information for future studies. Research Sponsor: None.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
Improving care for patients with stage III/IV NSCLC: Learnings for multidisciplinary teams from the ACCC National Quality Survey. First Author: Ravi Salgia, Beckman Research Institute of City of Hope, Duarte, CA

**Background:** Refinement of the multidisciplinary team (MDT) approach continues to offer significant potential for improving the quality of non-small cell lung cancer (NSCLC) care and adherence to guideline-recommended protocols. This opportunity arises, in part, from insufficient characterization of MDT practice patterns and barriers to optimal care provision within U.S. cancer programs. The Association of Community Cancer Centers (ACCC), therefore, conducted a national survey to improve understanding on how patients with stage III/IV NSCLC were diagnosed and managed across different practice settings, with the aim of informing the design and execution of process-improvement plans to address identified barriers.

**Methods:** ACCC convened an expert steering committee of multidisciplinary specialists, including oncopatologists, thoracic surgeons, pathologists, pulmonologists, and representation from patient advocacy, for a comprehensive, double-blind, web-based survey (January-April 2019) to obtain insights on cancer care delivery for patients with NSCLC in a diverse set of U.S. community cancer programs.

**Results:** Of 1211 questionnaires, 639 responses affiliated to 160 unique cancer programs across 44 U.S. states were suitable for analysis. In total, 41% (n = 261) of respondents indicated that their cancer program did not have a thoracic multidisciplinary clinic. Nurse navigators (P = 0.03) and radiation oncologists (P = 0.04) were significantly more likely to engage in shared decision-making practices than other disciplines. The average time to first therapeutic intervention in newly diagnosed patients was 4 weeks (range = 1–10 days; n = 298). A significant negative correlation between frequency of tumor board meetings and time to complete disease staging (P = 0.03) was observed. The most challenging barriers to delivering high-quality NSCLC care are listed (Table). Conclusions: Multiple opportunities exist to improve the delivery and quality of care for patients with stage III/IV NSCLC, including reducing barriers to effective care coordination and patient education, screening, diagnosis, and biomarker testing, and adhering to evolving standards of care. Research Sponsor: AstraZeneca.

**Key barriers to delivering quality NSCLC care.**

<table>
<thead>
<tr>
<th>Care coordination</th>
<th>Screening</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient quality of biopsy material</td>
<td>Lack of primary care referral</td>
<td>Cost</td>
</tr>
<tr>
<td>Coverage and reimbursement awareness</td>
<td>Lack of community awareness</td>
<td>Cost</td>
</tr>
<tr>
<td>Turn-around time</td>
<td>Scheduling challenges and/or limited access to biopsy procedures</td>
<td></td>
</tr>
</tbody>
</table>

**Table 1. Cost of care coordination, screening, and diagnosis.**

**Key quality recommendations for ideal stage III/IV NSCLC care.**

<table>
<thead>
<tr>
<th>Care coordination</th>
<th>Diagnosis and biomarker testing</th>
<th>Staging and treatment planning</th>
<th>Survivability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardize patient participation in shared decision-making</td>
<td>Multidisciplinary evaluation of suspicious findings</td>
<td>MTX coordination for efficient biopsy collection</td>
<td>Incorporation of innovative staging procedures for increased sensitivity</td>
</tr>
<tr>
<td>Early patients in all aspects of NSCLC management, including diagnosis, staging, and treatment</td>
<td>Use of broad molecular profiling to identify actionable cancer mutations</td>
<td>Staging and appropriate techniques is paramount to define treatment planning</td>
<td></td>
</tr>
<tr>
<td>Provision of access to an MDT care navigator for information on financial aspects of treatment</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Table 2. Key quality recommendations for NSCLC care.**

**229**

**Poster Session**

Defining high-quality NSCLC care at U.S. cancer centers. First Author: Mark A. Socinski, AdventHealth Cancer Institute, Orlando, FL

**Background:** While clinical guidelines for non-small cell lung cancer (NSCLC) provide recommendations on individual components of care and advocate multidisciplinary collaboration, guidance spanning the complete patient journey is lacking. We aimed to compile quality-focused learning from the multidisciplinary team and selected clinical criteria for ideal NSCLC care, and propose a new set of metrics encompassing the entire care continuum. These metrics would be used as a new benchmark for ideal NSCLC care via the Association of Community Cancer Centers (ACCC) national quality care initiative for patients with advanced (stage III/IV) NSCLC.

**Methods:** The ACCC convened an expert steering committee of multidisciplinary specialists and representation from patient advocacy to compile evidence-based recommendations via a systematic search of clinical and quality care guidelines and peer-reviewed journals. Quality recommendations were organized within key areas of the patient journey: care coordination and patient education, screening and biomarker testing, staging and treatment planning, and survivorship.

**Results:** A total of 32 recommendations were included across the 4 key NSCLC care areas. Key quality recommendations are listed (Table). **Conclusions:** The full set of recommendations define ideal NSCLC care and serve as a valuable guide for multidisciplinary practice and quality improvement initiatives. Research Sponsor: AstraZeneca.

**Quality, safety, and implementation science**

**Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.**
Patterns of care in ALK+ or ROS1+ non-small cell lung cancer (NSCLC) in community systems. First Author: Benjamin Philip Levy, Johns Hopkins Sidney Kimmel Cancer Center, Washington, DC

Background: For patients who have ALK or ROS1+ NSCLC, targeted therapies have greatly improved treatment options, though challenges personalizing care have hindered effective implementation. In a quality improvement (QI) program conducted in 2 community oncology systems, practices involving the use of targeted therapies for NSCLC were assessed. Methods: Between 01/04/2020, retrospective EMR audits of 100 patients with ALK or ROS1+ NSCLC were analyzed for demographics, molecular testing, disease characteristics, treatment history, and shared decision-making (SDM). Surveys were administered to evaluate healthcare professionals’ (HCP; N = 47) challenges and barriers. HCPs participated in audit-feedback sessions and developed action plans for resolving identified gaps. Results: 64% of HCPs indicated high confidence in utilizing molecular tests to inform treatment and properly sequencing targeted therapies; however, the EMR audit demonstrated challenges efficiently integrating guideline-aligned testing into practice. The mean time from diagnosis to molecular testing results was 22 days and documentation of testing for genetic aberrations other than testing into practice. The mean time from diagnosis to molecular testing results was solved identified gaps. HCP teams participated in audit-feedback sessions and developed action plans for resolving identified gaps.

Background: The mean time from diagnosis to molecular testing results was solved identified gaps. HCP teams participated in audit-feedback sessions and developed action plans for resolving identified gaps.

Methods: Two retrospective audits were performed: 1) in the primary clinic from 01/04/2020 to 02/28/2020; 2) in the palliative oncology clinic from 03/01/2020 to 04/30/2020. EMR audits were performed at baseline and after the intervention was implemented in the primary clinic. The QI Project: This project was funded by an educational grant from Genentech. The study sponsor did not play a role in the design or analysis of the study or in the decision to submit for presentation.

CONCLUSIONS: The EMR audit demonstrated challenges efficiently integrating guideline-aligned testing into practice. The mean time from diagnosis to molecular testing results was 22 days and documentation of testing for genetic aberrations other than testing into practice. The mean time from diagnosis to molecular testing results was solved identified gaps. HCP teams participated in audit-feedback sessions and developed action plans for resolving identified gaps.

Poster Session

Solving identified gaps.

Poster Session

Solving identified gaps.

Poster Session

Solving identified gaps.

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Solving identified gaps.

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Solving identified gaps.

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Solving identified gaps.

Poster Session

Solving identified gaps.
An effectiveness-implementation hybrid trial for informatics-based cancer symptom management. First Author: Justin D. Smith, Northwestern University Feinberg School of Medicine, Chicago, IL

Background: Oncology outpatients can facesignificant cancer- and treatment-related symptoms that compromise health-related quality of life and quality of care delivery. Although the burden of symptoms is well known, most health care systems are not ideally set up to relieve them. Patients are not typically drawn into meaningful engagement with the health care team in ways that enable symptom self-management. As a result, opportunities for early identification and treatment are lost, causing avoidable human suffering and cost. The Northwestern University IMPACT (NU IMPACT) project aims to evaluate the effectiveness and implementation of an informatics-driven symptom monitoring and web-based self-management intervention. The project uses PROMIS measures, integrated into the EHR, to trigger response and intervention. This presentation describes the effectiveness-implementation hybrid trial design and measurement of implementation. Methods: NU IMPACT will test the effectiveness and implementation of a system-wide symptom management intervention, across six adult hematology/oncology and gynecologic oncology outpatient clinics at Northwestern Memorial HealthCare, using a cluster randomized pragmatic roll-out implementation trial with an embedded individual-level randomized clinical trial. This unique design allows for a fully-powered randomized trial to establish the efficacy of the intervention, as well as a randomized trial of implementation. We are enrolling approximately 6,000 patients in pre-implementation and 6,000 in post-implementation, with half of the latter group randomly assigned to enhanced symptom management, and the other half to usual care. Results: Implementation process is guided by the Exploration, Preparation, Implementation, and Sustainment (EPIS) model with evaluation following the RE-AIM framework. Particular focus is paid to adoption at the clinic and provider level, and to which intervention achievements are meaningful to cancer patients, and the potential for sustainment. Additionally, we are testing and validating a newly developed method for tracking and reporting dynamic changes to implementation strategies. Conclusions: Achieving the aims of the NU IMPACT project is a critical step in the advancement of informatics-driven symptom management interventions for cancer patients. The innovative implementation trial design and measurement approach will aid in the rapid translation of findings to other healthcare systems. Clinical trial information: NCT03988543. Research Sponsor: U.S. National Institutes of Health.

Increasing non-opioid pain management in the cancer patient presenting to the emergency department. First Author: Adriana Wechsler, MD Anderson Cancer Center, Houston, TX

Background: The opioid epidemic is claiming more than 115 lives daily in the US (1). Pain is commonly the chief complaint of cancer patients presenting to the emergency department (ED) and aggressively managed with opioids. A recent statement from the American Pain Society (APS) on high risk for opioid misuse (2). Non-opioid analgesia is often avoided from concerns of masking fevers, intolerance due to nausea/vomiting, or bleeding risk in thrombocytopenia. Our aim was to identify opportunities to reduce opioid use while safely alleviating pain in patients presenting to the Emergency Department of a comprehensive cancer center. Methods: Following the PDSA model, baseline data on current opioid use was obtained and perceived barriers to non-opioid analgesia were identified through questionnaires. Comfort level with non-opioid analgesia in cancer patients and current pain management practice was also queried. Patients eligible for non-opioid analgesia (solid tumors, no fever, pain score < 7) were then identified through retrospective chart review and the prevalence of contraindications for non-opioid use were calculated. This data and opportunities to use non-opioid analgesia was shared with providers in education sessions. Medication order panels were modified to provide easy access to oral and intravenous acetaminophen (APAP) and nonsteroidal anti-inflammatory drugs (NSAIDs). After two months the change in opioid prescribing was calculated. Results: Providers self-reported barriers to prescribing opioids as: low platelets, patient preference, and poor oral intake. Of 237 patients presenting 1/2018 and May 2018, 76 (32%) were eligible for non-opioid analgesia. Only 3 patients had absolute contraindications to both APAP or NSAIDs. After provider education, order entry simplification and prescribing guidance, the use of non opioid analgesia rose from 3.9% to 9.4%. Patient satisfaction with pain control rose from 57.4 to 60.4 % following the intervention based on Press Ganey results. Conclusions: There is opportunity for non-opioid acute pain management in the solid tumor patients. Contraindications to non-opioid pain management are uncommon. In the emergency department, safe pain relief can be provided by non-opioids such as NSAI and APAP. Research Sponsor: None.

ED utilization trends for medical oncology patients at Thomas Jefferson University during COVID-19. First Author: Zachary L. Quinn, Thomas Jefferson University, Philadelphia, PA

Background: For patients receiving cancer care, utilization of acute care resources can be frequent and, in many instances, is avoidable. At Thomas Jefferson University (TJU), up to 50% of emergency department (ED) visits for medical oncology patients on active treatment (receiving intravenous or oral chemotherapy) are within 30 days of initial treatment. This is consistent with the criteria. The COVID-19 pandemic drastically altered healthcare delivery, prompting providers and patients to re-evaluate the safety and necessity of acute care. We aimed to evaluate the effect of the COVID-19 pandemic on ED utilization for oncology patients. We tallied the total number of visits to the TJU ED for all patients and for medical oncology patients from January 1, to May 31, 2020. We defined the months of January and February as “Pre-COVID” and the months of April and May as “COVID”. We excluded data from March in our analysis. For medical oncology patients, we tallied both the number of patients with an ED visit and total ED visits for each month. We stratified patients by whether or not they were on active treatment. We reviewed the outcome of each ED visit and categorized results as admission (inpatient admission or observation) or discharge. We classified each ED visit as avoidable or unavoidable using OP-35 criteria. Results: In the Pre-COVID months there were 489 total visits by 432 oncology patients; 41% (179) of these patients were on active treatment. During COVID months there were 313 visits by 284 oncology patients; 48% (137) were on active treatment at the time of visit. During COVID, total ED visits decreased by 37%. Visits by medical oncology patients decreased by 35%. For medical oncology patients on active treatment, we observed a 21% reduction in ED visits. In the Pre-COVID months, 38% of oncology patient visits were considered potentially avoidable and 41% of visits ended with a discharge to home. With COVID, 31% of visits were considered potentially avoidable and 35% of visits ended with a discharge to home. Conclusions: We observed a decrease in ED utilization and the RAI is considered a tool that mirrors the impact of the COVID-19 outbreak. The decrease was less prominent for patients on active treatment. The percent of visits that were potentially avoidable and the percentage of patients discharged to home from the ED decreased slightly during the COVID period. Further analysis is ongoing to understand factors that contributed to the reduction in ED utilization observed immediately following the COVID-19 outbreak. Research Sponsor: None.

Using the Risk Assessment Index to predict mortality and quality of life in breast and gynecologic cancer patients. First Author: Ellen Ormond, UPMC Hillman Cancer Center, Pittsburgh, PA

Background: Cancer patients vary considerably in health status making it challenging to evaluate the risk of complications from cancer treatment. To aid oncologists in identifying patients with highest risk for adverse outcomes, we investigated the Risk Assessment Index (RAI). RAI can serve to predict frailty in patients prior to elective surgery. We assessed whether the RAI could predict mortality, hospital utilization, and quality of life in cancer patients. Methods: Participants were breast and gynecologic cancer patients treated at UPMC Magee Women’s Hospital. Cancer Center. We completed the RAI between July 2016 and December 2017. Patients completed patient reported outcomes (PROs) during each visit including the Short Form (SF)-12, Edmonton Symptom Assessment, anxiety and depression screens, and MD Anderson Symptom Inventory (MDASI) and were analyzed up to 180 days after the RAI date. Mortality was assessed at 90, 180, and 365 days, and hospital utilization was assessed within 90-days of RAI. Results: There were 1,764 unique breast and gynecologic cancer patients. Significant correlations between the RAI and mortality were observed for both groups with frail patients having higher rates of mortality at each interval. Frailty was associated with higher rates of hospitalization compared to non-frail patients (31% vs 20%, p = 0.05 & 50% vs 34%, p = 0.02 for breast and gynecologic patients, respectively). Frailty correlated with lower ratings of well-being in breast cancer patients (r = 0.13, p = 0.01) and mortality (r = 0.37, p < 0.001). Frailty correlated with lower ratings of well-being in breast cancer patients (r = 0.05, p = 0.012) and higher symptom burden in gynecologic patients (r = 0.23, p = 0.01). No correlations were observed between the RAI and anxiety or depression. Frailty correlated with mortality, hospital utilization, and quality of life in breast cancer patients. Conclusions: We demonstrated the relationship between frailty, hospital utilization, and hospitalizations in breast and gynecologic cancer patients. Using this tool to risk-stratify patients may help to guide shared decision-making discussions and provide appropriate treatment and/or supportive services for this vulnerable population. Research Sponsor: None.
Using an integrated social-behavioral text message approach to improve screening mammography in African American women. First Author: Amina Dhahin, University of Maryland Capital Region Health, Internal Medicine Department, Cheverly, MD

Background: The rate of breast cancer among Black and White women is nearly equivalent but the death rate is 40% higher for Blacks. This disparity is often attributed to lower screening mammography rates in Black women. The effectiveness of text messages on increasing screening mammography among Black women is not well known. Importantly, the themes that are most effective at promoting behavioral changes in Black women’s breast cancer screening rates through text message interventions have not been explored. An integrated social-behavioral approach was used to identify themes associated with Black women’s response to two types of text messaging: reminder and educational texts. Methods: A qualitative study was conducted in Metropolitan Baltimore with two focus groups among Black breast cancer survivors. Participants completed a demographic survey and indicated text messaging practices and preferences for future breast screening texts via survey. Participants provided feedback on a series of 17 educational and reminder text messages. Focus groups were digitally recorded and transcribed for analysis. Text message preferences were then analyzed and context-specific themes were identified, discussed and recorded. Results: 17 participants had an average age of 60. All participants reported cell phone ownership and 82% of participants reported texting. 46% reported an interest in reminder text messages and 54% reported an interest in educational text messages. Four main themes were derived from participant responses: 1) access to cancer care surveillance, 2) social network support, 3) patient-centered approach, and 4) self-advocacy. Text messages were perceived to be more motivating than educational reminder text messages. Conclusion: Breast cancer screening behaviors are affected by various demographic, social-behavioral, and socioeconomic factors. The findings from this study suggest that developing an educational text message content that incorporates social and behavioral themes focusing on the patient may be more beneficial to improve breast cancer screening rates in this population. Research Sponsor: None.

Combining two implementation strategies to increase reach for tobacco treatment with cancer patients: Ask-Advise-Connect and closing care gaps. First Author: Terri Wolf, University of California Davis Comprehensive Cancer Center, Sacramento, CA

Background: Tobacco treatment is an important component of cancer care, and pragmatic strategies are needed. The University of California Davis Comprehensive Cancer Center (UCD CCC) was selected to join the National Cancer Institute Cancer Center Cessation Initiative (NCI C3I) to integrate tobacco treatment into cancer care. As a result of the collaborative effort, tobacco treatment workflows established in primary care, with Health Management Education group classes and a quitline order, but less so in cancer centers. Methods: We use the RE-AIM framework for our study evaluation. During the two years involved (1/2018-12/2019) patient data were collected in 6-month periods to NCI C3I from core Cancer Center clinics including medical, surgical, and radiation oncology. Three strategies were implemented serially and in convergence. Strategy #1 involved cancer provider and staff education and training. Strategy #2 utilized an Ask-Advise-Connect (AAC) content workflow with medical assistants assessing and referring within the clinic encounter, and Strategy #3 conducted Closing Care Gaps outreach to contact “unassisted” smokers outside of the clinic encounter. Stakeholder perspectives for implementation readiness across units were engaged at least bi-monthly by multidisciplinary members of the Cancer Committee, led by the physician-in-chief. Implementation strategies were developed in partnership with clinic management and Health Management Education staff with monthly rapid feedback reports for referral outcomes. Results: Our project improved tobacco assessment from 83.6% to 96.4% and tobacco treatment program orders and outreach by 6-fold (from 40 to 254) over the four NCI C3I 6-month reporting periods. For tobacco treatment program Effectiveness, among 118 patients who engaged in treatment (January 2018-3 June 2019), past-week abstinence at 6 months was 22.9% (missing data assumed to be smoking). Adoption and Implementation of tobacco treatment program referrals were highest in medical (5-10 fold) and surgical oncology (3-fold) among those patients referred for treatment, radiation oncology referrals remained due to a different clinic workflow and electronic health record module. Booster trainings have helped to maintain referrals in the clinic. Conclusions: A matrix cancer center can rapidly adopt and implement tobacco treatment strategies that are internal and external to the clinic barriers with the goal of improving tobacco treatment and maximizing reach to all cancer patients who smoke. Research Sponsor: U.S. National Institutes of Health.

Investigating factors associated with postmastectomy emergency department visits: A population-based analysis. First Author: Steven Langer, Department of Surgery, Cumming School of Medicine, University of Calgary, Calgary, AB, Canada

Background: In 2016, a multi-pronged pathway was implemented in 13 hospitals across the province of Alberta, Canada to improve the mastectomy perioperative care experience focused on two objectives: 1) to increase same day surgery on incision rates and 2) decrease the number of unnecessary postoperative ED visits. The pathway successfully increased same day mastectomy rates from 1.7% to 47.8%, however the rate of postoperative ED visits remained high at 22-27%, a rate several-fold of that described at other centers (3.1-12.8%) in spite of focused interventions at the patient and provider level to enhance perioperative support. Objective: To investigate potential factors associated with high postoperative ED visits following mastectomies in Alberta. Canada. Methods: Data was collected using the Day Care Abstract Database, and the National Ambulatory Care Reporting System database. Eligible patients included all women over 18 years old who underwent a mastectomy in the province of Alberta between 2004 and 2018. Patient demographics and operative variables including age, SES, Charlson comorbidity, date of surgery, surgery type (same-day vs. overnight) and health regions were collected. Primary outcome of interest was an ED visit within 30 days of mastectomy. Univariate and multivariate analyses were performed to identify independent predictors for post-operative ED visits. Results: A total of 18,076 patients had mastectomy. Post-operative the study period of which 4219 (23.3%) had an ED visit within 30 days of surgery. The most common causes of ED visits were infection, pain, and nausea/vomiting. Independent factors associated with ED visits were increasing age, overnight stay, number of additional perioperative interventions, health region, and high despite initiating a province-wide surgical pathway in 2016 which emphasizes patient education and improved perioperative care and supports. ED visits are associated with geographic location, specific comorbidities, and overnight stays. Currently, the hospital is investigating to incent ED visits in non-emergent settings. Further investigations are necessary to discern whether additional perioperative interventions can curb the high ED visit rate. Research Sponsor: None.

Implementing a ride share program for patient transportation home from a hospital admission. First Author: Erin Lightheart, Hospital of the University of Pennsylvania, Philadelphia, PA

Background: This quality improvement project takes place within a large hospital, on a team that manages about 1700 oncology discharges per year. The hospital emphasizes the importance of discharging patients early in the day to encourage more efficient patient flow. On advanced medicine units with longer hospital stays, 90% of the post discharges were related to transportation issues related to family being delayed. Methods: A multidisciplinary group utilized a ride share company to implement a HIPPA compliant transportation program. Upon admission, each patient was screened for transportation needs by the surgical team. The team identified patients who were high-risk despite initiating a province-wide surgical pathway in 2016 which emphasized patient education and improved perioperative care and supports. ED visits are associated with geographic location, specific comorbidities, and overnight stays. Currently, the hospital is investigating to incent ED visits in non-emergent settings. Further investigations are necessary to discern whether additional perioperative interventions can curb the high ED visit rate. Research Sponsor: None.

Other meaningful outcomes are summarized in the table below.

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Use of CARG toxicity tool to predict chemotherapy toxicity in older veterans to facilitate better treatment outcomes. First Author: Srinivasan Chamarthy, Wright State University Boonshoft School of Medicine, Dayton, OH

Background: Traditionally the Eastern Cooperative Oncology Group (ECOG) performance status has been used to assess objective patient well-being and to determine whether geriatric patients can tolerate chemotherapy. Hurria and colleagues from the Cancer and Aging Research Group (CARG) developed a validated geriatric assessment model for adults > 65 yrs. to predict the risk of grade 3-5 chemotherapy toxicity in the treatment of solid tumors. The CARG score, ranging from scores of 0 to 19, incorporates measures of functional status such as fall history, hearing problems, physical capabilities, performance status as well as objective measures including age, gender, height, weight, cancer type, type and dose of chemotherapy, hemoglobin, and creatinine clearance. Methods: At the Dayton VA Medical Center, the utility of the CARG tool was studied in patients to predict chemotherapy tolerance for treatment naive veterans age > 65 yrs, who were diagnosed with solid tumor malignancies excluding leukemias. CARG scores were stratified as low (score 0-5), intermediate (score 6-19) and high risk (score 10-19). The CARG toxicity score was compared with standard use of ECOG performance status alone to predict chemotherapy toxicity. Subsequent changes in chemotherapy dosage, treatment delays due to adverse effects as well as mortality rate after treatment were also monitored. Results: The study, which enrolled 20 patients over 1 year, revealed that out of 18 patients with ECOG 0-2, 94% had at least an intermediate CARG risk for chemotherapy toxicity and 50% were shown to have high CARG risk for chemotherapy toxicity. Of the 11 high-risk CARG patients in the study, 45% had chemotherapy intolerance. Of the 17 treated patients with calculated CARG risk 50% or > of 10 had 41% mortality rate. Conclusions: Geriatric assessment modalities are integral to predict chemotherapy toxicity in geriatric patients. These modalities should be part of routine assessment of geriatric cancer patients in order to adequately incorporate their functional status when calculating chemotherapy risk. Using the CARG score as the solitary use of ECOG performance status appears to be inadequate for this purpose. The calculated CARG risk percentage may be a better predictor of mortality rate than the ECOG score. Research Sponsor: None.

Care redesign of pelvic radiotherapy using Design Thinking: An enhanced quality improvement initiative. First Author: Cho Hao Francis Ho, National University Cancer Institute, Singapore, Singapore

Background: Cone Beam Computed Tomography(CBCT) is the cornerstone of image guided radiotherapy(IGRT) which is an integral part of pelvic cancers like prostate cancer. Each pelvic radiotherapy (RT) session is preceded by a planned CBCT to ensure target localisation and organ at risk avoidance. When there are deviations from the planned CBCT, a re-planned CBCT is performed to rule-out any problems. Possible reasons for an unsatisfactory CBCT include an under filled bladder, distended rectum or prostate gland movement. Repeated un-satisfactory CBCTs are a key factor in the incidence of unplanned CBCT and could be a platform to monitor the process changes and address safety concerns.

Methods: Using a quality improvement and the design thinking methodology, in the diagnostic phase up to March 2017, the baseline incidence of CBCT in patients receiving pelvic RT was 21%. We hypothesized that there were reversible factors leading to a higher incidence of unplanned CBCT and sought to identify and rectify these reversible factors to reduce the incidence of unplanned CBCT. Using human centered design, we designed a new process of performing a bladder ultrasound prior to CBCT to ensure a full bladder prior to RT using the steps empathy, define, ideation, prototyping, testing, sharing.

Results: A total of 97 patients that underwent pelvic radiotherapy were included in this study, 40 patients were pre intervention and 61 patients received the bladder ultrasound intervention implemented from April 2017 onwards. After intervention, incidence of unplanned decreased from 21% to 5.8%. A 2 sample t test was used to compare the unplanned CBCT pre and post intervention. We found the mean pre and post intervention difference in pooled mean incidence of unplanned CBCT to be significantly different by 13.3%. The reduction in unplanned CBCT was attributed to adhering to the existing protocol and ensuring that each patient had an average equivalent to 3000 chest x rays worth of unnecessary radiation.

Conclusions: Design Thinking is a feasible strategy in quality improvement. We redesigned the workflow using the CARG tool and anticipated a relative reduction in mortality, toxicity due to the potential bias that this could have impacts on outcomes. Yet studies are limited regarding specific differences in screening rates amongst various outpatient care settings. Methods: We conducted retrospective chart reviews of patients followed by resident providers within an academic internal medicine residency program who met USPTF guidelines for lung cancer screening between 2015-2020. This was conducted at three separate outpatient clinic sites including a state-funded academic institution, inner city community health center, and veteran affairs medical center. Data collection included patient demographic and smoking histories as well as rates of ordered and completed LDCT screening. Results: A total of 832 patients were identified as current or former smokers between the ages of 55 and 80 years: 320 from Hartford Hospital Community Health (HHHC), 262 from University of Connecticut Health Center (UCHC), and 250 from the Veteran Affairs (VA) Medical Center. 85 (27%) of these patients from HHHC, 84 (32%) from UCHC, and 56 (22%) from the VA met USPTF eligibility criteria for LDCT screening. Overall compliance rates of screening were found to be 44% at HHHC, 52% at UCHC, and 55% at the VA. Conclusions: Screening rates for lung cancer with LDCT remain low but have been steadily improving throughout the United States following new recommendations and increased awareness provided by multiple medical organizations. We sought to compare differences in compliance rates amongst various outpatient clinics within the same internal medicine residency program at University of Connecticut. Our findings demonstrate significant differences in LDCT screening for lung cancer between the program’s community health center versus its state and federally funded outpatient clinics. Automatic reminders to providers can potentially improve compliance rates of lung cancer screening. Patients should also be educated on the importance of screening to improve adherence with imaging. Research Sponsor: None.
Impact of a built-in electronic medical record prompt on guideline-recommended prophylactic antiviral usage in patients with multiple myeloma receiving proteasome inhibitors. First Author: Garrett Young, OneOncology, Nashville, TN

Background: Guidelines support the use of prophylactic antivirals to prevent reactivation of dormant virus cells in patients treated with multiple myeloma or proteasome inhibitors (PI). In our network of five oncology practices spanning over 100 clinic sites, one practice has a built-in prompt for acyclovir use in patients receiving a PI, while the other four practices do not. We used this natural experiment to determine the impact of this prompt on appropriate prophylactic antiviral usage in this patient population. Methods: We retrospectively identified all patients in our network with MM beginning a regimen containing a PI between 1/1/2019 and 12/31/2020. Of these patients, we identified the time with cumulative follow-up from prescription for acyclovir or valacyclovir before or within 2 days of the first PI dose. We compared prophylactic usage across five practices. Practice 1 had built a prompt for the prescription of acyclovir in regimens containing bortezomib or carfilzomib within the electronic medical record (EMR) which both reminded physicians and nurses and simplified the prescribing process. No other practices had similar EMR prompts. Results: We identified 583 patients with MM who received a PI during the study period. Wide variation in rates of prophylactic antiviral usage existed across the five practices (range 23%-94%). The highest rate of prophylactic antiviral usage was practice 1 (94%). This was the only practice with a built-in EMR prompt for acyclovir usage in PI regimens. We found no association between use of prophylactic antivirals and individual provider volume of patients with MM. Conclusions: Use of prophylactic therapy is heterogeneous across practices. A comprehensive treatment plan containing a prompt in the EMR can markedly increase appropriate utilization. We plan to add an EMR prompt and analytics-driven reminders across our network. Further long-term review of patient utilization of all guideline-recommend, orally administered prophylactic medications. Research Sponsor: None.

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Improving performance status documentation by hematology-oncology fellows. First Author: Ana L. Velazquez Manana, University of California, San Francisco Medical Center, San Francisco, CA

Background: Accurate performance status (PS) documentation is essential as poor PS is a strong predictor of treatment-related toxicity. At our institution, a baseline chart review revealed missing PS documentation in 28% of Fellow seen new patient visits (NPV). PS documentation as an unstructured text comprised the remarked chart field. The lack of structured PS documentation represents a missed opportunity for accurate data in registries, trial registration, and supportive care referrals. Methods: To improve standardized documentation of PS for NPVs, we designed a Fellow-led quality improvement (QI) initiative over the course of 2 PDA cycles. Specifically, we developed and implemented a structured PS smart data element tool (SDET) into our electronic medical record (EMR). PDSA cycle 1 (7/2019-11/2019) included SDET implementation and publicity using flyers & emails. PDSA cycle 2 (12/2019-2/2020) incorporated individualized feedback to Fellows, biweekly email reminders, and outreach to attendings regarding our SDET. We calculated cumulative usage of our SDET for PS documentation during the 2019-2020 academic year among NPVs seen by Fellows. Our aim was to assess and document PS in at least 50% of NPVs seen in person. Results: During PDSA cycle 1, cumulative structured PS documentation increased from 8% to 31% (Table). Focus groups revealed that Fellows were not consistently incorporating our SDET into their note templates or were relying on pre-existing written templates. Over PDSA cycle 2, the cumulative structured PS documentation rate increased from 24% to 54%. Overall cumulative documentation rate is 40%, in large part driven by cycle 1 because of a drop in actual PS documentation in cycle 2 compared to the transition to telehealth during the COVID-19 pandemic. Conclusions: Our Fellow-led QI intervention improved cumulative structured PS documentation from 8% to 40% using two rapid PDSA cycles. Our intervention highlights the importance of real-time data review and stakeholder feedback to identify ongoing challenges. Our third PDSA cycle will include expansion to all clinic providers (Fellows, attendings, and advanced-practice providers), as well as the incorporation of telehealth encounters and follow-up visits. We also hope to align our initiative with broader steps toward data interoperability via the ASCO-sponsored mCODE initiative. Research Sponsor: None.

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Standardization of cardiac monitoring practices in patients receiving cardiotoxic cancer therapy at an ambulatory oncology center. First Author: Hannah DeLuna, NorthShore University HealthSystem, Chicago, IL

Background: A significant number of cancer-directed therapies are associated with cardiotoxicity. This adverse effect is well-established in anthracyclines and anti-HER2 agents. At our ambulatory oncology practice, the recent availability of echocardiograms with strain imaging has prompted an evaluation of current practices for cardiotoxicity monitoring in breast cancer patients. The Mount Sinai Health System was in the epicenter of the COVID-19 pandemic in NYC. We implemented dynamic testing, isolation and treatment policies in order to continue delivering necessary cancer treatments and ensure the safety of our patients and our staff. Here, we describe the rapid rollout of IT optimizations to enhance the delivery of quality care during this time. We developed an IT strategy for a distributed healthcare infrastructure that involved integration of a health informaticist, IT analyst, and data analyst along with cancer center leadership to help create and optimize electronic health record (EHR)-based tools to support the clinical missions. Methods: We developed and implemented dynamic EHR innovations to optimize cancer care delivery in New York City during the COVID-19 pandemic. Conclusions: Dynamic EHR optimizations were essential to continue our cancer care delivery services during the pandemic. Research Sponsor: None.

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Poster Session

Adverse event clusters present at dose-reduction in CLL patients on ibrutinib in the U.S. Veterans Health Administration. First Author: Christopher R Frei, South Texas Veterans Health Care System, San Antonio, TX

Background: Previously, we reported that adverse events (AEs) were the top reason for dose reductions in VHA patients on novel agents. Some AEs might be problematic but might not directly lead to dose reduction; however, these concomitant AEs should not be overlooked. This study describes AE clusters that occurred with the primary AE that led to dose reduction in VHA CLL patients receiving ibrutinib. Methods: This is a retrospective chart review study of CLL patients treated with ibrutinib in the VHA from October 2013 to March 2018. Variables included the presence of dose reduction, the reasons for dose reduction, primary AEs leading to dose reduction, and concomitant AEs present at the time of dose reduction. Descriptive statistics were used to summarize AE clusters. Results: Out of 1069 CLL patients on ibrutinib, 285 patients experienced dose reduction due to AEs and were included in this analysis. The most common AEs leading to dose reduction were: musculoskeletal (11%), bleeding (11%), fatigue (10%), infection (9%), atrial fibrillation (8%), diarrhea (8%), and rash (8%). Fatigue was the leading concomitant AE present at dose reduction among patients who were dose reduced due to musculoskeletal (28%), infection (22%), diarrhea (28%), and rash (25%). Fatigue was also the second-leading or third leading concomitant AE among those who were dose reduced due to atrial fibrillation (13%) or bleeding (10%). Musculoskeletal was the leading or second-leading concomitant AE present at dose reduction among those who were dose reduced due to fatigue (17%), infection (12%), or diarrhea (14%). Bleeding was the leading concomitant AE among those who were dose reduced due to atrial fibrillation (17%) and vice versa. Conclusions: This study provides evidence that fatigue and musculoskeletal AEs are problematic in CLL patients on ibrutinib in the VHA. These were not only among the most common primary AEs but also the leading concomitant AEs present at dose reduction. Although not directly leading to dose reduction, these ‘nuisance’ AEs can greatly affect quality of life among CLL patients and warrant more attention from clinicians. A better understanding of all AEs present at dose reduction may help clinicians better manage patients on novel agents. These data also highlight the unmet need for novel agents with a ‘cleaner’ safety profile. Research Sponsor: AstraZeneca.

Poster Session

Use of antiemetic prophylaxis and oral breakthrough medication for highly emetogenic chemotherapy (HEC) in a large community oncology network. First Author: Garrett Young, OneOncology, Nashville, TN

Background: Prophylaxis for highly emetogenic chemotherapy (HEC) is well established in clinical guidelines, but real-world treatment patterns are unclear. Today, consistent use of prophylaxis is more easily accomplished due to the incorporation of ordering premeds into the workflow prior to administration of intravenous chemotherapy. However, prescription of oral agents for treatment of breakthrough chemotherapy induced nausea and vomiting (CINV) is less consistent and standardized and has a scant evidence base. In an effort to standardize utilization, we evaluated the use of prophylaxis and oral breakthrough medications in a large national community oncology network. Methods: Data from electronic medical records at five practices comprising over 100 clinic sites was analyzed to examine the frequency of guideline-recommended triplet 5-HT3 receptor antagonist, NK1 receptor antagonist, and corticosteroid use for prophylaxis prior to the administration of HEC agents. Oral breakthrough medication use and preference was also analyzed. Data was collected and analyzed at the practice level. Results: We identified 2645 patients that received HEC between 1/1/2019 and 5/8/2020. We found consistently high utilization of guideline-concordant triplet prophylaxis regimens for patients receiving HEC, ranging from 90-100% at each of the five practices. In addition, most patients (mean 83%, range 67% - 94%) received a prescription for at least one oral breakthrough medication, but the agent(s) utilized varied widely across practices (Table). Ondansetron was the most commonly prescribed oral breakthrough medication (mean 68%, range 53% - 88%), while olanzapine use for either prophylaxis or breakthrough CINV across practices ranged from 1% - 4%. Conclusions: In this national community oncology network, standard recommended triplet agent prophylaxis for HEC was delivered successfully. However, opportunity exists to increase appropriate use of olanzapine and reduce variation of oral breakthrough antiemetic medications in order to optimize clinical care. Research Sponsor: None.

In this national community oncology network, standard recommended triplet agent prophylaxis for HEC was delivered successfully. However, opportunity exists to increase appropriate use of olanzapine and reduce variation of oral breakthrough antiemetic medications in order to optimize clinical care. Research Sponsor: None.

Oral breakthrough antiemetic use at practice level.

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Rapid Abstract Session

**Prospective validation of a clinical tool developed with machine learning to identify high-risk patients with cancer and reduce emergency department visits.** First Author: Lorinda A. Coombs, University of North Carolina Lineberger Cancer Center, Chapel Hill, NC

**Background:** Clinicians in oncology are often challenged to identify when patients with cancer are at high risk for adverse outcomes and would benefit from more intensive cancer care. Preemptive identification of these patients may improve efficiency and improve patient care. The objective of this quality improvement pilot was to prospectively validate a machine learning (ML)-based clinical tool designed to identify patients with cancer who are at high risk for an emergency department (ED) visit, and whom the tool met eligibility criteria for clinical services at home, such as Huntsman at Home (HiHiH). Methods: Patients with cancer who received care at Huntsman Cancer Institute (HCI) between Jan 4 and Feb 7, 2020 were included in the analysis. For patients with HCI contact in a given week, the ML-based tool predicted the probability of an ED visit within the next 60 days to identify “high-risk” patients using real-time structured EHR data (e.g., demographic characteristics, vital signs, and laboratory values). Risk of an ED visit was used as a proxy for eligibility for HiHiH. Patients were randomized to two cohorts to assess eligibility precision and outcome forecast precision. Eligibility precision was defined as the percentage of ML-classified high risk patients who were confirmed by a nurse practitioner to be eligible for admission to H@H. Outcome forecast precision was defined as the percentage of ML-classified high risk patients who experienced a future ED event within 60 days after the last ED visit. Results: 1,236 patients; 53% were women, median age was 65 years, and 84% were Caucasian. The tool was 85% sensitive (95% CI: 0.81-0.89) and 77% specific (95% CI: 0.74-0.81) to the baseline prevalence of ED visits within 60 days during the same time period. The IRB determined this to be a quality improvement project. Conclusions: This quality improvement pilot included 1,236 patients. 53% were women, median age was 65 years, and 84% were Caucasian. The tool classified 94% of the patients as high risk. The tool classified 99% of patients as high risk. The tool identified 2% of patients. 0.76 (95% CI: 0.62-0.89), demonstrating concordance with clinician assessment and 0.07, demonstrating concordance with clinician assessment and 0.07, demonstrating concordance with clinician assessment and 0.07, demonstrating concordance with clinician assessment and 0.07, demonstrating concordance with clinician assessment and 0.07, demonstrating concordance with clinician assessment. This quality improvement pilot demonstrates the potential application of an ML-based tool to identify patients with cancer who may benefit from home care services through the HiHiH program. The approach and framework of an ML-based tool to enhance clinical services at home. Research Sponsor: Flatiron Health (Pharmaceutical Company), Other Foundation.

Poster Session

**Impact of increased understanding of personal and family health history on patients.** First Author: Lynn A. McCain, University of Michigan, Ann Arbor, MI

**Background:** The InheRET personal and family health history survey was administered to 384 patients at three Michigan Medicine Clinics (2 primary care centers [11% of patients] and one breast and ovarian cancer risk clinic [89% of patients]) between October 1, 2018 and May 31, 2019. Since family history alone misses ~30% of those with deleterious germline mutations, this study follows the previously published work and what, if any, additional information patients had on patients’ lifestyle choices, cancer prevention screenings, and risk-reducing therapies adopted based on perceived risk status: Meeting or not meeting NCCN Guidelines for referral to genetics for further evaluation. Methods: One year after patients completed their health histories, patients who did not meet referral guidelines and were not referred for counseling and testing (population risk patients) still made lifestyle changes to improve their health and engaged in at least one cancer screening activity in the past year to reduce their cancer risk. The only preventive medical treatments received by this group were Tamoxifen (12.9%), and Hormone Replacement Therapy (3.2%). Among patients meeting NCCN Guidelines and tested (4 positive, 17 negative, 8 inconclusive/VUS/unknown results), 58.6% made positive lifestyle choices, 86.5% engaged in one or more cancer screening activities, and 34.5% sought additional medical interventions such as chemoprevention, hormone replacement and/or prophylactic surgery. Conclusions: By learning more about their personal and family health history, patients who did not meet NCCN guidelines and were not referred for counseling and testing were proactive in taking actions to improve their overall health and reduce their cancer risk. This demonstrates the importance of knowing and understanding one’s family health history, even for those who do not meet NCCN referral guidelines. Research Sponsor: U.S. National Institutes of Health.

Poster Session

**Pilot randomized controlled trial (RCT) in women with non-small cell lung cancer (NSCLC) undergoing treatment to assess the feasibility of delivering group-based psychosocial care via videoconference.** First Author: Kathrin Milbury, University of Texas MD Anderson Cancer Center, Houston, TX

**Background:** Women with lung cancer are vulnerable to psychological distress and social isolation, which may be related to the smoking-related stigma of the disease. We developed a group-based psychosocial intervention seeking to address the specific needs of this understudied patient population. The goal of this pilot RCT was to examine the feasibility and acceptability of delivering group-based psychosocial care via videoconference (i.e., Zoom). Methods: Women with NSCLC within 3 months of diagnosis completed baseline measures of their computer literacy and were then randomized to a group-based psychosocial intervention or arm with usual care. Participants randomized to the intervention met criteria for group-based attention control (AC) arm receiving psychoeducation. Both arms included five, 60 min. videoconference sessions (groups of 3-5 patients) that were led by a master-level counselor. Participants completed one Zoom survey prior to the first session that asked participants to rate the overall experience of the intervention delivery and the specific software. Results: Seventy patients (mean age = 66 yrs with 54% over age 65. 71% non-Hispanic White; 50% college educated; 75% advanced stage) consented (63% consent rate) and 65 were randomized (intervention: N = 33; AC: N = 32). At baseline, 47% indicated that they use a computer daily while 50% said they rarely or never use a computer. Attendance was high in both arms (means: intervention = 3.18; AC = 3.56 with 63% attended all sessions). Across arms, 89% preferred a group-delivery and 92% preferred the online delivery. The majority used a smartphone or tablet to participate (72%). Regarding the Zoom software, 71% said it was easy to use, 65% of women would recommend it to others, and 41% felt comfortable with it after one use (but 26% said they felt never comfortable with it). Only 44% thought that the sessions via Zoom were the same as they would have been in-person. Conclusions: It seems to be feasible and acceptable to deliver group-based psychosocial interventions via videoconference in women with NSCLC undergoing treatment. Challenges regarding scheduling group sessions and familiarizing infrequent computer users with the technology were encountered but were resolved over the course of the trial. Clinical trial information: NCT03731585. Research Sponsor: Duncan Family Foundation.

Poster Session

**Provision of smartphones in a symptom monitoring program of gynecologic and breast cancer patients during active therapy.** First Author: Michelle Joy Naughton, Department of Internal Medicine, The Ohio State University, Columbus, OH

**Background:** With advances in technology, smartphones are being used for multiple research and clinical care functions. However, not all patients have these devices, leading to disparities in participation. We report on a quality improvement program that provided smartphones to patients without these devices. Methods: Gynecologic (n = 120) and breast (n = 193) cancer patients under active treatment were enrolled in a 12-month text-based symptom monitoring program which utilized smartphone devices and text messaging. Patients without a smartphone were provided with an iPhone through a partnership with a U.S. wireless company. The company provided smartphone devices at zero cost, and program funds paid for 12 months of phone service. Program staff helped patients set up the iPhones, and provided basic education and ongoing phone support. After 12 months, patients were able to keep their iPhones, but had to secure their own phone plan for calling and texting functions. Results: iPhones were provided to 42 (13.4%) patients across all cancer types. Patients who received iPhones, compared with those who had a smartphone had incomes below $50,000/year (p = 0.03) and an educational level of < high school (p = 0.0001). Program staff had few difficulties training patients to operate the phones or in patients’ adherence to symptom monitoring after receiving the iPhones. Phone service charges (ranged $50 per month or $550 per person for 12 months). Greater than 90% of patients believed the phones enabled them to better communicate with their health care team and family/support networks, and 95% believed the phones had a positive impact on their life. However, only 70% planned on retaining their iPhone phone service. A drop in the use of smartphones to a baseline of a baseline of 65% and were 92% preferred online belief that a smartphone was not a necessity. Conclusions: Providing smartphones to patients enabled them to better communicate with their health care team and families, and participate in remote symptom monitoring during active treatment. Programs such as these are needed to reduce disparities in patient care, and support quality improvement efforts using electronic devices. Research Sponsor: Merck Foundation.

Visit quality.asco.org to search by abstract for the full list of abstract authors and their disclosure information.
The role of telehealth in improving patient care and satisfaction during a pandemic: University of California Cancer Consortium experience. First Author: Pelin Cinar, University of California San Francisco, San Francisco, CA

Background: The adoption of telemedicine in providing patient-centric care has been limited due to concerns related to upfront cost and the uncertain reimbursement models. Telehealth modalities, which encompass broader services and quickly became a central focus of care delivery, are designed to decongest centers across the nation during the COVID-19 (C19) pandemic. Our aim is to describe five University of California (UC) Cancer Centers’ experience with telehealth during the pandemic. Methods: Between March and June 2020, UC Cancer Centers developed or increased the use of telehealth modalities to continue to provide care to our oncology patients during the pandemic. Digital platforms were used to screen for symptoms and exposures related to C19, as well as for symptoms of distress. In addition, providers performed remote visits via video and telephone visits. Each of our centers monitored visit volumes as well as patient satisfaction scores during the pandemic. Results: Our Cancer Centers, each with various levels of pre-pandemic (Jan-Feb) use of telehealth, saw an increase in the volume of patients who were seen via remote visits including video and telephone visits during the pandemic (Mar-Apr). UC Davis, UC Los Angeles and UC San Francisco had implemented telemedicine prior to the pandemic, but the rates of use were 1%, 0.4% and 7%, respectively. In contrast, UC Irvine and UC San Diego did not offer remote visits prior to the pandemic. Despite these differences, during the pandemic, telemedicine rates increased to 50-70% of visits in the cancer centers. In addition, patient satisfaction scores were comparable to in-clinic visits. The use of digital platforms allowed 80% of patients to be screened for risk of C19 prior to their in-clinic visits. Conclusions: C19 comfort while delivering care was possible with telemedicine. While different levels of implementation was in place for telehealth services in our cancer centers prior to the pandemic, each cancer center was able to continue to see patients via remote visits. In addition, telehealth technology automated activities that would have been performed manually pre-pandemic. The increased use of telemedicine visits with high patient satisfaction scores is an indication that some patients can continue to receive their care via telehealth beyond the pandemic. Research Sponsor: None.

Implementing clinic to home telehealth services to promote quality of life for ambulatory oncology palliative care patients. First Author: Megan Begnoche, Lifespan Cancer Institute, Providence, RI

Background: The Lifespan Cancer Institute (LCI) identified strategies to improve the palliative care experience and outcomes by providing clinic to home telehealth services. LCI is an integrated academic medical center program combining three hospital programs operating at six separate sites across the state. One quality goal is to embed and increase palliative care within the fabric of oncology by providing palliative telehealth in the home to avoid office visits, ED and hospital admissions. Methods: LCI’s multidisciplinary palliative care team, including administrators, physicians, nurses, advanced practice providers, and community partner physicians assessed telehealth challenges with a vulnerable patient in the home setting. Process development included operations, technology, patient and staff education. The group modified existing telemedicine work flow, converted to clinic visits to behavioral health clinic to clinic for providers, to create the clinic to home method. This process benchmarked patient and behavioral health noting video differences with the clinic setting versus the home. Results: Outcome metrics include no show rate, chemotheray minimum of 14 days of ED/ICU within 30 days of death, patient and provider experience. Initial data shows no show rates decreased from 10% (January) to 6% (May) as telehealth increased. Patients marked deceased within 3 months of a LCI visit for January (n = 52) and May (n = 61) unfortunately did not have a negative trend for chemotherapy in the last 14 days of life (Jan: 8%, May 15%), ED and ICU visits both had modest decreases from January (EO 50%, ICU 29%) to May (ED 48%, ICU 21%). In anticipation of future Press Ganey results, patient feedback includes an increase in feelings of comfort while receiving care. Patient satisfaction increased with the ability to assess the patient in their own home instead of the sterile clinic environment. Encountered challenges include insurance restrictions for Rhode Island (not a rural state), technology, and remote trouble shooting. Conclusions: The success of clinic-to-home telehealth services set the foundation for the COVID-19 telehealth insurance and led to the palliative team acting as role models to medical and radiation oncology. End of life oncology patients stayed home while having their palliative needs addressed remotely. The innovative approach to implement telehealth services will serve as a model for future LCI telehealth programs including treatment education sessions, oral chemotherapy follow-up, survivorship and post hospital discharge assessments. Research Sponsor: None.

Perception of patients regarding telemedicine at times of COVID-19: Do they miss the personal touch? First Author: Shira Peleg Hasson, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel

Background: The patient- oncologist relationship is cultivated from the first clinic visit, trust and assurance established throughout the follow up period until the end of life. In March 2020, with the break of the COVID-19 pandemic, social distancing measures were implement throughout the nation. The use of telemedicine services were incorporate as a response to our institution. Almost all ambulatory activity in the oncology division in Tel Aviv Medical Center was converted to telemedicine services. Several studies report favorable results in telemedicine visits with higher satisfaction scores and cost effectiveness compared to traditional telemedicine. Methods: We conducted a telephone interview questionnaire assessing patient satisfaction. Inclusion criteria included solid tumor patients over 18 years who utilized the telemedicine platform at Tel Aviv Sourasky Medical Center between March 2020 - May 2020. We aimed to evaluate patient’s perspectives and preferences regarding telemedicine and assess whether this virtual communication affects the patient-doctor relationship. Results: Following the COVID-19 outbreak, 400 telephone calls were made to patients. 100 patients agreed to participate and surveyed. Fifty-two percent were female. The majority of patients independently downloaded the telemedicine application and did not encounter technical constraints (67%). Family members and friend attended 45% of telemedicine visits. Patients cancer diagnosis included colorectal cancer (47%), breast cancer (18%), genitourinary cancer (18%), sarcoma (9%) lung malignancies (6%), gynecological cancer (1%) and CNS tumors (2%). Visit intent included post treatment follow up (40%), active treatment follow (53%), and first visit intake (7%). The majority of patients felt their emotional needs were met (88%) during their treatment compared to only 10% that felt emotionally cared for absent of a physical visit (84%). Almost all patients (99%) felt their privacy was maintained. Ninety-five percent of patients affirmed that the virtual visit relieved their worries regarding colorectal cancer (47%), breast cancer (18%), lung cancer (18%) and gastrointestinal cancer (18%). Most (75%) patients affirmed their interest to continue telemedicine regardless of COVID-19 pandemic. Conclusions: Telemedicine is an acceptable platform that may replace follow up visits without comprising patients’ experience. Our data call for research and development of tools enabling long-term implementation of remote telemedicine and assess the patient-physician relationship and quality of care among oncology patients. Research Sponsor: None.
262 Poster Session
Implementing teleoncology in a safety-net hospital during the COVID-19 pandemic. First Author: Andrew James Wiele, University of Texas MD Anderson Cancer Center, Houston, TX

Background: In response to the COVID-19 pandemic, telehealth has emerged as a key strategy to ensure the safety of patients and healthcare workers and minimize disease spread. Lyndon B. Johnson Hospital (LBJ) is a safety-net hospital with a low-income uninsured patient population (pts) and MD Anderson Medical Oncology faculty and fellows diagnose and treat over 800 new cancer cases per year in the LBJ Oncology Clinic. We piloted a teleoncology (TO) program to replace in-person visits for pts with clinic appointments (aps) during the COVID-19 pandemic. Methods: A multidisciplinary team was formed to implement TO in the LBJ Oncology Clinic. Fellows and APPs screened their appts in advance and used guidelines to determine pts appropriate for TO. Clinic visits were prioritized for new pts, treatment consents, and symptomatic pts; stable pts on treatment and surveillance had appts changed to TO. Pts were notified when their appts were converted, with integrated video visits preferred over telephone visits. To limit disease exposure, 3 fellows rotated in clinic for one week at a time and cared for the pooled clinic pts; the other 16 fellows and 2 APPs conducted TO and remotely staffed their pts with faculty on their assigned clinic day. We reviewed TO visits during the initial 1-month pilot period and survey results from involved personnel.

Results: From 4/13/2020 - 5/8/2020, we identified 251 pts that utilized TO. Median age was 57 years (range, 20-88) and 66% were female; 63% were Hispanic and 21% were African American; 52% spoke Spanish and 46% spoke English. 57% of TO visits were conducted via telephone and 43% via video. 48% of the TO visits were for pts on active treatment, including IV therapy, surgical procedures, and oral targeted agents (35%); 15% were surveillance pts with (9%) or without (6%) restaging imaging, 8% were on endocrine therapy, and 16% had transitioned to the Survivorship Clinic staffed with APPs. Survey response rate was 100% (5/5) for faculty, 74% (14/19) for fellows, and 100% (2/2) for APPs. 74% (248/334) of 575 faculty, 57% of 100 Fellows, and 100% of 100 APPs were generally satisfied (agree/strongly agree) with the patient care delivered via TO; 100% of faculty, 64% of fellows, and 100% of APPs believe patients were generally satisfied with TO. Conclusions: This study demonstrates that implementing TO in a safety-net hospital can be safe, effective, and efficient. Nearly half of the TO visits conducted during this pilot period were for pts on active cancer treatment and the majority of caregivers were satisfied with TO. Pt care via TO is ongoing and pt survey data is currently being collected. Research Sponsor: None.

264 Poster Session
Creation of a telehealth task force to improve successful use of telehealth to maintain patient access during the COVID-19 pandemic. First Author: Avnish K Bhatia, Thomas Jefferson University Hospital, Philadelphia, PA

Background: In response to the COVID-19 National Emergency, the Sidney Kimmel Cancer Center (SKCC) medical oncology practice desired to greatly expand telehealth (TH) utilization to decrease patient risk while maintaining access to care. TH utilization has increased dramatically at SKCC, and there are digital media access in our patient population. A digital literacy survey performed at the SKCC in 2018 noted that 30% of patients used Android phones and >60% of patients accessed the internet from a PC. Methods: In response to increased TH demand, the development of an oncology-dedicated Telehealth Task Force (TTF) to address barriers to TH access. The TTF team consisted of nine full-time individuals with digital and healthcare literacy to assist in telehealth and patient portal troubleshooting. Critical functions of TTF's targeted patient solutions include; set-up and delivery of smartphones, creating email accounts, performing test visits, creating EHR patient portal accounts, real-time assistance during TH visits with implementation of this intervention beginning on April 3, 2020 with monthly follow-up for patient interactions/feedback. Results: The SKCC medical oncology clinic noted increased interactions with patients immediately with a marked increase in the composite of medical oncology appointments completed by TH (35.6% in April 2020 compared to a prior level of 15.7% in March 2020). Additionally, there was a statistically significant increase in the proportion of patients have an active patient portal EHR account during this same period (14.6%, 95% CI, 12.3% to 16.9%; p < 0.0003). Oncology infusion treatment appointments reductions remains on consistent over time. Conclusions: The SKCC medical oncology practice experienced an exponential rise in TH utilization during an uncertain public health crisis. Disparity in digital literacy and resources essential for successful TH use were quickly appreciated as potential barriers to access. The creation of a dedicated Telehealth Task Force was critical in maintain access to care for oncology patients given their vulnerability to infection. Further investigation of TH supports to improve TH use are warranted. Research Sponsor: None.

TTF impact on TH/Patient Portal access

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265 Poster Session
Utilization of telemedicine to meet the demand throughout the COVID-19 pandemic at a community oncology practice. First Author: Larry Edward Bilbrey, Tennessee Oncology, Nashville, TN

Background: A large community oncology practice in Tennessee participates in value-based payment arrangements, the success of which depends on close patient monitoring. Telemedicine as an innovative solution was initiated in 2017. To no regulation, we were able to develop telemedicine services. This study was performed to assess the experience at a community oncology practice. Methods: In response to the COVID pandemic and loosening of restrictions, telemedicine services were expanded. We identified a cloud-based platform that allowed patients to use any device with a camera and microphone and required no software downloads. On-line training sessions were provided to clinical staff. All training and workflow implementation were completed in a 2-week time frame. Telemedicine was expanded to include surveillance, urgent care, psychology, palliative care and post-BMT visits as well as new patient consents for medical, radiation and gynecologic oncology patients. Patient satisfaction surveys were administered. Results: Our telemedicine visits increased weekly beginning March 1, peaking in the month of April with an average of 77 scheduled telemedicine visits per day across the practice. During the month of April, our practice saw a record clinical trial accrual in our Phase1 Drug Development Unit with a 22% increase over the previous average. Patients who responded to a satisfaction survey were highly satisfied with the telemedicine visit with a 73% positive response rate. Nearly half of our eligible patients did not have the technology or bandwidth access to be able to participate in telemedicine. Conclusions: Our prior experience with telemedicine, though limited, facilitated the development of a structure that provided adequate number of devices and internet bandwidth capacity to support rapid expansion of telemedicine. We were able to maintain high quality care and access to clinical trials during the pandemic and see the value of this service long-term. We hope to add tele-diagnosis and care coordination services. Political leadership and patient advocacy groups should explore ways to ensure that all patients may benefit from this technology, especially those in under-served areas. Research Sponsor: None.

266 Poster Session
Telemedicine usability for cancer care during the COVID-19 pandemic. First Author: Christian Miller, The George Washington University School of Medicine and Health Sciences, Washington, DC, DC

Background: Healthcare delivery via telemedicine has increased substantially amid COVID-19. The George Washington Cancer Center (GWCC) now provides cancer care services via tele-visits for patients at high risk of morbidity and mortality secondary to COVID-19. This study was performed to assess usability of virtual care delivery, to identify barriers to successful delivery, and to evaluate patient experiences. Methods: In response to increased telehealth demands for support, the SKCC launched an oncology-dedicated Telehealth Task Force (TTF) to address barriers to TH access. The TTF team consisted of nine full-time individuals with digital and healthcare literacy to assist in telehealth and patient portal troubleshooting. Critical functions of TTF's targeted patient solutions include; set-up and delivery of smartphones, creating email accounts, performing test visits, creating EHR patient portal accounts, real-time assistance during TH visits with implementation of this intervention beginning on April 3, 2020 with monthly follow-up for patient interactions/feedback. Results: The SKCC medical oncology clinic noted increased interactions with patients immediately with a marked increase in the composite of medical oncology appointments completed by TH (35.6% in April 2020 compared to a prior level of 15.7% in March 2020). Additionally, there was a statistically significant increase in the proportion of patients have an active patient portal EHR account during this same period (14.6%, 95% CI, 12.3% to 16.9%; p < 0.0003). Oncology infusion treatment appointments reductions remain consistent over time. Conclusions: The SKCC medical oncology practice experienced an exponential rise in TH utilization during an uncertain public health crisis. Disparity in digital literacy and resources essential for successful TH use were quickly appreciated as potential barriers to access. The creation of a dedicated Telehealth Task Force was critical in maintain access to care for oncology patients given their vulnerability to infection. Further investigation of TH supports to improve TH use are warranted. Research Sponsor: None.
Barriers to telehealth: The patient perspective. First Author: Charles Douglas Bodine, UAB, Birmingham, AL

Background: During the COVID-19 pandemic, the need for telehealth has come to the forefront of healthcare. In the right clinical context, telehealth is an easy and effective way for providers to deliver high quality care, while also taking away barriers to care access such as clinic inconvenience, distance travel, or lack of transportation. This data, etc. An absence of the above data exists regarding the benefits and potential of telehealth, but most data is from the perspective of the provider. Unfortunately, there is little information regarding the patient’s perspective and satisfaction; and even less regarding accessibility issues in terms of technology and cultural perception of telehealth. We posited that there is a need for individualized grass root level understanding of the population being served to make sure telehealth adoption is sustained and equitable. We are studying this using a rapid cycle improvement project using a Plan Do Study Act format (PDSA), with a cohort of veterans in a medical oncology clinic in Birmingham, AL. Methods: We spoke with a pilot cohort of 67 patients in the medical oncology clinic at the VA Medical Center in Birmingham, AL. Surveys were done on all patients prior to their initial telehealth visit. Patients first agreed to participate, and then answered a question survey regarding their perception of telehealth, their willingness to participate, and their perceived barriers to participation. We then identified barriers to intervene upon, with the plan to engage senior VA Leadership for the same. Results: 67 medical oncology patients in the Birmingham VA between May 1 and May 31, 2020, agreed to participate in a survey prior to their first telehealth appointment. We found that of the 67 patients surveyed, only 48 (71.6%) had a video capable phone and only 41 (61.2%) had high speed internet or data to support that call. Interestingly 25 patients (36.6%) did not feel they could access the video on their own phone. While this presented one barrier to telehealth, we also found that 11 patients (16.4%) would not want to participate in telehealth even if they had a video capable device. Conclusions: This data, while not exhaustive, clearly captures some unique barriers to telehealth that may not have been previously studied or understood. Hearing the voice of the patient is critical in developing culturally competent forms of telehealth delivery. We will use this data to implement interventions that will not only provide an access to the telehealth community, but will also make sure to specifically address the cultural/socioeconomic barriers to this form of healthcare distribution and how to overcome these barriers. Research Sponsor: None.

268 Readiness of health care systems to generate RWE: Frequency of radiographic imaging of metastatic disease during first-line systemic therapy. First Author: Brandon Chan, BC Cancer, Vancouver, BC, Canada

Background: Regulatory and Health Technology Assessment (HTA) agencies are increasingly using real world data (RWD) to support real world evidence (RWE), but the readiness of health care systems to reliably generate RWE is unknown. As a quality assurance measure we examined the preparedness of a single payer system to provide RWE by evaluating the frequency of CT imaging during standard first line metastatic systemic treatment of breast, colorectal (CRC) and lung cancer. Methods: A 7-year cohort of de novo metastatic breast, CRC, lung cancer patients treated with first line systemic therapy (excluding hormone therapy) referred to BC Cancer in 2016 was retrospectively reviewed. Duration of first line treatment was calculated from first to last dose of therapy. This data, while not exhaustive, clearly captures some unique baseline imaging (up to 3 wks after 1st tx) for each treatment.

Conclusions: In our publicly funded health care system, baseline CT scans within 4 weeks prior to treatment ranged from 57-72%. The median CT imaging interval during first line metastatic treatment was ranged from 7.9-11.3 weeks. RWD from routine clinical practice differs significantly from clinical trials. Population-based data may contribute to RWE with caution due to limitations imposed by clinical practice. Research Sponsor: None.

269 Real-world clinical outcomes in avelumab-treated patients (pts) in the United States (U.S.) from SPEAR-Merkel: Study informing treatment pathway decisions in Merkel cell carcinoma (MCC). First Author: Abhijeet Bhanegaonkar, EMD Serono, Inc, A business of Merck KGaA, Darmstadt, Germany, Rockland, MA

Background: MCC is a rare, aggressive disease associated with poor prognosis. Avelumab, a fully human anti-PD-L1 monoclonal antibody, was the first immune checkpoint inhibitor approved by the FDA for the treatment of metastatic MCC (mMCC). In the JAVELIN Merkel 200 trial, avelumab resulted in durable responses and a high objective response rate (ORR) in pts with mMCC. This retrospective descriptive study assessed real-world clinical outcomes in avelumab-treated pts with locally advanced MCC (laMCC) and mMCC in a US community oncology setting. Methods: This study included data on avelumab-treated laMCC and mMCC pts from 1/17 to 3/31/19 within The US Oncology Network. Study data were captured through 9/30/19 using structured fields and chart review of InterMedec healthcare records. Real-world ORR was assessed. Duration of response (DOR), progression-free survival (PFS), and overall survival (OS) were estimated using the Kaplan-Meier method. Results: 33 pts treated with avelumab (laMCC n = 11; mMCC n = 22) and were followed up for a median of 10.9 months (range, 0.5-27.2 months). Median age was 77 years (range, 44-90+ years), 78.8% of pts were male, and the majority (84.8%) of pts were treated in the first-line setting. During treatment, 27.2% of pts had emergency department visits and 39.4% were hospitalized; 1% and 23%, respectively, were treatment related. Clinical outcomes are reported in the table. Conclusions: This is the first study to examine pts with laMCC treated with avelumab in a real-world setting. Although the same population is small, results may reflect the clinical benefits in the real-world in pts with mMCC treated with avelumab with consistent benefits reported in the JAVELIN Merkel 200 trial. Research Sponsor: This research was financially supported by EMD Serono, Inc, a business of Merck KGaA, Darmstadt, Germany, and is part of an alliance between Merck KGaA and Pfizer.

<table>
<thead>
<tr>
<th>Breast cancer</th>
<th>Colon cancer</th>
<th>Lung cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (ORR)</td>
<td>56 (44-66)</td>
<td>65 (56-73)</td>
</tr>
<tr>
<td>Sex</td>
<td>Female</td>
<td>78 (96%)</td>
</tr>
<tr>
<td>Male</td>
<td>3 (4%)</td>
<td>12 (18%)</td>
</tr>
<tr>
<td>Baseline imaging (up to 3 wks after 1st tx)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without prior tx</td>
<td>48 (59%)</td>
<td>104 (49%)</td>
</tr>
<tr>
<td>Within 4 wks prior to tx initiation</td>
<td>59 (72%)</td>
<td>127 (59%)</td>
</tr>
<tr>
<td>Within 6 wks prior to tx initiation</td>
<td>77 (85%)</td>
<td>187 (76%)</td>
</tr>
<tr>
<td>Within 8 wks prior to tx initiation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemotherapy 1</td>
<td>Cm (29)</td>
<td>13 (49%)</td>
</tr>
<tr>
<td>Median duration of first line treatment, weeks (ORR)</td>
<td>14 (9-20)</td>
<td>15 (9-24)</td>
</tr>
<tr>
<td>Median number of CT scans during first line treatment (ORR)</td>
<td>2 (0-3)</td>
<td>2 (0-3)</td>
</tr>
<tr>
<td>Median CT imaging interval, weeks (ORR)</td>
<td>10.9 (6.6-17.7)</td>
<td>11.3 (8.0-15.2)</td>
</tr>
</tbody>
</table>

ORR, % (95% CI): (Physician assessed) 54.6 (33.4-73.3), Median DOR (Months) (ORR) | NOS (95% CI) | 91 (4-275) |
| DOR Rate at 6 Months (95% CI) | 100.0 (100.0-100.0) * | 66.7 (33.7-86.0) |
| Median PFS (95% CI) | 2 (2.9-27.2) | 89 (2.8-14.6) |
| PFS Rate at 6 Months (95% CI) | 100.0 (100.0-100.0) | 66.7 (23.2-86.0) |
| OS Rate at 6 Months (95% CI) | 9.6 (2.6-15.5) | 54.6 (23.4-83.3) | 54.6 (32.2-75.6) |

NR, not reached * Based on small N
**TECHNOLOGY AND INNOVATION IN QUALITY OF CARE**

**272**  
Poster Session  
**Real-world patient pathway of care for diffuse large B-cell lymphoma (DLBCL). First Author: Fei Yang, Roche Diagnostics Information Solutions, Basel, Switzerland**

**Background:** Use of immunophenotyping and molecular diagnostics is the most important first step in the care process for DLBCL patients according to recommendations by the NCCN and the WHO. Process mining is a novel approach of statistical and graphical analytics and may provide insights on real-world patient pathway of care and guidelines-recommended diagnostic testing for appropriate DLBCL classification in clinical settings. **Methods:** This retrospective study included patients diagnosed with DLBCL between 01/01/2011 and 12/31/2019, using the Flatiron Health Electronic health record-sourced de-identified database. The database includes information on the date of diagnostic testing and corresponding results abstracted from pathology reports or clinical visit notes. This study included information on diagnostic testing by immunohistochemistry (IHC) and molecular diagnostics through fluorescence in situ hybridization (FISH) or karyotyping for markers with a confirmed known result that can be used to classify cell of origin according to Hans algorithm and to identify double-/triple-hit lymphoma and double expressor lymphoma. We explored the application of process mining techniques to produce patient pathway graphs for visual investigation on the real-world care process for DLBCL patients, from initial diagnosis through diagnostic testing and line of therapy, until death or end of the study follow-up. **Results:** A total of 5387 patients (female 45%, male 55%, mean age at diagnosis 66.4±13.6 years) were included. During a median follow-up of 19.2 months (IQR: 6.1-43.8), 4400 (82%) patients had evidence for IHC testing, 3205 (59%) had evidence for molecular testing, and few had information for next-generation sequencing (n = 91). Among those with evidence of diagnostic testing, 3721 (85%) and 1636 (50%) had the first test performed on the day (specimen collection date) of DLBCL diagnosis by IHC and molecular testing, respectively. During the study follow-up, most patients (n = 5005, 93%) started treatment within a median of 24 days (IQR: 14-36) and few participated in clinical trials (n = 131). When stratified analysis by year of DLBCL diagnosis, patients with evidence of diagnostic testing increased from 67% (249/372) in 2011 to 86% (506/591) in 2019 for IHC and 50% (184/372) in 2011 to 67% (396/591) in 2019 for molecular testing, respectively. **Conclusions:** In DLBCL, use of recommended diagnostic testing appeared to increase from 2011 to 2019. Clinical insights generated using process mining could be used by institutions for benchmarking and for care pathway optimization. Research Sponsor: Roche Diagnostics Information Solutions.

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**274**  
Poster Session  
**Treatment patterns of advanced or recurrent endometrial cancer following platinum-based therapy in the U.S. real-world setting. First Author: Andrew J. Klink, Cardinal Health, Dublin, OH**

**Background:** Patient (pt) prognosis is poor following disease progression on or after primary (PL) platinum-based therapy (PBT) for advanced/recurrent (A/R) endometrial cancer (EC), and no consensus on standard second-line (2L) therapy exists. This retrospective analysis aimed to understand real-world (RW) treatment patterns of pts with A/R EC progressing to subsequent lines of therapy following prior PBT. A/R EC progressing to subsequent lines of therapy following prior PBT (pts) who received systemic treatment for A/R EC following PBT from 2016 to 2018. During a median follow-up of 19.2 months (IQR: 6.1-43.8), 4400 (82%) patients (female 45%, mean age at diagnosis 66.4±13.6 years) were included. During a median follow-up of 19.2 months (IQR: 6.1-43.8), 4400 (82%) patients had evidence for IHC testing, 3205 (59%) had evidence for molecular testing, and few had information for next-generation sequencing (n = 91). Among those with evidence of diagnostic testing, 3721 (85%) and 1636 (50%) had the first test performed on the day (specimen collection date) of DLBCL diagnosis by IHC and molecular testing, respectively. During the study follow-up, most patients (n = 5005, 93%) started treatment within a median of 24 days (IQR: 14-36) and few participated in clinical trials (n = 131). When stratified analysis by year of DLBCL diagnosis, patients with evidence of diagnostic testing increased from 67% (249/372) in 2011 to 86% (506/591) in 2019 for IHC and 50% (184/372) in 2011 to 67% (396/591) in 2019 for molecular testing, respectively. **Conclusions:** In DLBCL, use of recommended diagnostic testing appeared to increase from 2011 to 2019. Clinical insights generated using process mining could be used by institutions for benchmarking and for care pathway optimization. Research Sponsor: Roche Diagnostics Information Solutions.

**275**  
Poster Session  
**Trends in germline genetic testing and results into survivorship for women diagnosed with breast cancer or ovarian cancer, 2013 to 2017. First Author: Steven J. Katz, University of Michigan, Ann Arbor, MI**

**Background:** Genetic testing is increasingly central to breast and ovarian cancer prevention and treatment. Yet, little is known about trends and disparities in receipt of testing and test results after diagnosis. **Methods:** We linked electronic patient files for breast or ovarian cancer patients identified through the SEER-Medicare linkage for the years 2013-2017 in Georgia and California and reported to SEER registries to genetic testing results from four laboratories (Ambry Genetics, GeneDx, Invitae, Myriad Genetics). We combined test results from all labs with SEER data. We conducted a test as a multivariable regression model if it was conducted in addition to BRCA1/2. We grouped pathogenic variants (PVs) by level of evidence that supported clinical testing: BRCA1/2; other genes associated with well-established syndromes (syndromic genes); genes whose cancer association is less certain (emerging genes); and any other tested genes (other genes). We categorized patients with a variant of unknown significance (VUS) in any gene but no PVs as VUS-only. We examined trends in receipt of testing and test results overall and by race/ethnic groups. **Results:** One quarter (25.5%) of 198,003 breast cancer patients, and 34.5% of 15,461 ovarian cancer patients had genetic tests. Test rates increased by only 2% annually; while the number of genes tested per patient increased by 28%. The mean number of genes tested rose from 10 to 35 during the study period. In early 2013, 18.3% of testers had a PV or VUS result, which increased to 37.2% in late 2017. The upward trend was largely due to increase in VUS-only findings. The proportion of tested breast cancer patients with any PV increased from 9.1% to 9.9%; PVs in BRCA1/2 decreased from 7.5% to 5.0% (p < 0.001), while PV for the two clinical syndromes (syndromic and emerging genes) increased from 1.6% to 4.9% (p < 0.001). PVs in any of the other 61 genes were very rare (<1%). By contrast, the VUS rate in breast cancer patients increased markedly from 9.6% in 2013 to 26.2% in 2017. The VUS rate was higher in racial/ethnic minorities (41.0% Asian, 36.5% Black, 28.0% Latinos versus 25.6% non-Hispanic Whites diagnosed in 2017; p < 0.001). We observed similar findings for patients with ovarian cancer. **Conclusions:** A large gap persists in testing ovarian cancer patients (35% versus 100% recommended). Testing more genes per patient was associated with a substantial racial/ethnic gap in VUS with little difference in yield on clinically relevant PVs. Testing a limited subset of genes may optimize yield-to-noise of genetic testing, particularly for racial/ethnic minorities. Research Sponsor: U.S. National Institutes of Health.

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276 | Poster Session
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Machine learning to predict tamoxifen adherence among U.S. commercially insured breast cancer patients. First Author: Tyler J. O’Neill, Roche Diagnostics Information Solutions, Pleasanton, CA

**Background:** Adherence to tamoxifen among women diagnosed with hormone receptor positive metastatic breast cancer (mBC) can improve survival and minimize recurrence. Screening for non-adherence at treatment initiation may inform personalized care, improve health outcomes, and minimize cost of care. This study aimed to use real world data (RWD) and machine learning (ML) methods to classify tamoxifen non-adherence.

**Methods:** A cohort of women diagnosed with incident mBC from 2012 to 2018 were identified from Truven MarketScan Commercial Claims and Encounters and Medicare supplemental administrative claims databases. Patients with < 80% proportion of days coverage (PDC) in the year following treatment initiation were classified as non-adherent. Training and internal validation cohorts were randomly generated (4:1 ratio). Clinical procedures, comorbidity, treatment and healthcare encounter features in the year prior to treatment initiation were used to train logistic regression, boosted logistic regression, random forest, and feed forward neural network models and internally validated based on the year of treatment initiation.

**Results:** A total of 3,022 patients were included with 39.9% classified as non-adherent. All ML models had moderate predictive accuracy. Logistic regression (AUROC 0.64) was easily interpreted with sensitivity 94% (95% confidence interval [CI]: 0.89, 0.92) and specificity 0.31 (95% CI: 0.29, 0.33). The model accurately classified adherence (negative predictive value 88.7%) but was non-discriminate for non-adherence (positive predictive value 47.7%). Variable importance identified top predictive factors, including patient features (<55 years old and pre-treatment procedures (lymphatic nuclear medicine, radiation oncology, arterial surgery). Conclusions: ML using baseline administrative data predicts tamoxifen adherence. Baseline claims may not be sufficient to predict treatment non-adherence. Further validation with enriched longitudinal data may improve model performance for incorporation of predictions into clinical decision support. Research Sponsor: Roche Diagnostics.

278 | Poster Session
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Biomarker testing patterns and use of targeted therapy in Medicare Fee-for-Service (FFS) beneficiaries newly diagnosed with metastatic non-small cell lung cancer (mNSCLC). First Author: Anik Patel, Amgen, Global Health Economics, Thousand Oaks, CA

**Background:** The number of targeted therapies approved for treatment of mNSCLC has increased over the past 5 years. Strategies to identify eligible patients with actionable mutations for targeted therapy can include simultaneous testing of ≥ 2 genes via next generation sequencing (NGS) or multiple singleton gene testing (SGT). Current clinical practice guidelines strongly recommend broad molecular profiling in all patients for the simultaneous assessment of multiple genes, including EGFR, ALK, and ROS1, that may have potential roles in cancer development. Limited real-world (Rw) evidence is available describing the up-take of these strategies and receipt of targeted therapy.

**Methods:** Medicare beneficiaries age 65 years or older, newly diagnosed with mNSCLC and tested for mutations of interest in mNSCLC (ALK, EGFR, ROS1, BRAF, HER2, KRAS, MET, NTRK, RET) from July 2014 - June 2018 were identified using Medicare FFS claims (100% sample) linked to biomarker results in PROGNOS NSCLC Explorer. Patients were followed from date of first metastatic diagnosis and stratified by line of therapy, testing strategy, and year of mNSCLC diagnosis. Those testing positive for an actionable biomarker were identified and then segmented by timing of receipt of a subsequent targeted therapy.

**Results:** 12,727 beneficiaries met inclusion criteria: median age: 75 years, 51% were female, 86% white. Among mNSCLC patients with at least one biomarker test result, EGFR and ALK mutation status were the most commonly tested and reported in 85% and 63% respectively. Overall, 1540 (12.5%) tested positive for EGFR, ALK or ROS1. The relative use of NGS or SGT vs. SGT for biomarker testing increased over time, from 63% in 2014 to 80% in 2018. During this period, 789 patients were identified as having at least one positive biomarker test result prior to initiating IL therapy; 635 were identified via NGS or SGT while 154 were identified via SGT. Despite a positive test for mutations of interest, only 292 patients received a targeted drug (Table 1). This RW study of mNSCLC patients demonstrates an increasing trend to test patients for multiple biomarkers at once via NGS or other SGT methods. The number of patients receiving appropriate targeted therapies was low, suggesting the need to address the barriers to administration of guideline-recommended therapy. Research Sponsor: Amgen.

277 | Poster Session
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Concordance of MRI-guided and systematic prostate biopsy for the detection of prostate cancer (PCa). First Author: Matthew Parsons, University of Utah, Salt Lake City, UT

**Background:** MRI/US guided biopsy (fusion biopsy) is increasingly utilized over systemic 12-core transrectal ultrasound biopsy (12-core biopsy) for men with MRI-visible prostate lesions who underwent fusion and 12-core biopsy from 2016-2020 in the Intermountain Healthcare (IHC) system were consecutively analyzed. This was in the setting of a continuous quality assurance initiative among the reading radiology. Primary outcome was PCa detection defined by Gleason grade group (GGG) ≥ 2. Sufficient clinical cancer (CSC) was defined as GGG 2 or higher. Patients were stratified by date biopsy was performed, 2016-2017 and 2018-2020, and lesions were stratified by PI-RADS v2 categories. For men with multiple lesions, the highest PI-RADS category per lesion was used. Results: A total of 142 men with 254 MRI-detectable lesions underwent both fusion and 12-core biopsies in the IHC system from 2016 to 2020. CSC was detected in 21.6% (55/254) of fusion biopsies. Comparing PI-RADS v2 categories 3-5 to PI-RADS v2 categories 4-5, the PPV for detecting CSC was 9% (15/162) compared to 44% (40/92) respectively. Fusion and 12-core biopsies were concordant for any PCa in 79% of men (102/142) and CSC in 83% (118/142). Fusion biopsy detected any PCa in 22/84 (26%) and CSC in 15/103 (15%) of men in whom 12-core biopsy was negative. 12-core biopsy detected any PCa in 8/70 (11%) and CSC in 9/97 (9%) of men in whom fusion was negative. In total, 15 patients had a CSC that would have been missed if fusion biopsy was omitted while 9 (6%) had a CSC that would have been missed if 12-core biopsy was performed. Conclusions: Omitting fusion or 12-core biopsy for PI-RADS v2 lesions would have resulted in a missed CSC in 11% or 6% of patients from 2016-2020, respectively. The combination of MRI/US-guided fusion biopsy and systematic 12-core biopsy increased detection rate of CSC. These results are in the setting of a continuous, multi-disciplinary quality assurance program and results are not necessarily applicable to other healthcare systems. Research Sponsor: None.

279 | Poster Session
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Impact of 12 months of immunotherapy for metastatic cancer patients on oncology workload. First Author: Victoria Andreotti, Department of Medicine, University of Udine and Department of Oncology, University Hospital of Udine, Udine, Italy

**Background:** In the last years, the introduction of immune checkpoint inhibitors (ICI) in clinical practice translated into major changes in oncology workload. We conducted a study to estimate the shift in workload generated, within 1 year of first treatment, for any new metastatic cancer patient receiving ICI at the Oncology Department of the Academic Hospital of Udine, Italy. Methods: We collected from our electronic accountability system the data of all cases of metastatic cancer patients between 01.01.2017 and 31.12.2018, leading to at least a second clinical episode (treatment sessions, unplanned presentations, hospitalizations, re-evaluations, follow-up, and inpatient oncology advices) during the following year. All data (pts) were divided into those receiving ICI (ICL) plus/minus anti-PD-1/PD-L1/PD-L2 vs. receiving other treatments. Mean number per patient and standard deviation were calculated for clinical episodes, and the mean numbers in each group were compared using Student’s t test (significance p<0.05). Follow-up continued until 31.12.2019. Results: 469 pts were included: 115 were treated with ICI. 854 received other treatments. In the first group a greater number of treatment sessions, re-evaluations and unplanned presentations were reported, with a statistically significant increased workload of patients receiving other treatments generated a greater workload in terms of follow-up. In detail, data are reported in Table. Conclusions: ICI have transformed the oncology landscape, leading to longer lasting treatment period with emerging toxicities. Estimating the workload generated by ICI is crucial for the implementation of more sustainable systems and for planning clinical activities. Mean number of clinical episodes in the first year of treatment with ICI for metastatic disease: Mean number per patient is represented by mean value and standard deviation (SD). Total number of clinical episodes is shown (N). Data are reported for ICI versus other treatments group. Research Sponsor: None.
**280**

**Poster Session**

**Real-world evidence for U.S. Food and Drug Administration-approved oncology products, 2015 to 2020.**

First Author: Bhakti Arondekar, Pfizer Inc., New York, NY

**Background:** Since the 21st Century Cures Act, there has been growing interest in using real-world evidence (RWE) to support regulatory filings for new drugs and indications. The goal of this study was to provide a comprehensive source of RWE use cases of U.S. Food and Drug Administration (FDA) approved oncology products. **Methods:** A systematic review of FDA new drug approval (NDA) and biologic license applications (BLA) was conducted from 2015-2020. Discontinuation of anti-HER2 regimen was assessed and the FDA in their approval decision. RWE results were used to provide contextualization to the pivotal trial, rather than statistical comparison. Common data sources included Flatiron (38%) and chart reviews (38%). FDA critiques included lack of a priori study protocol, incomparability with the pivotal trial population and endpoints, and unconfirmed confounding. **Conclusions:** There have been few examples of RWE in oncology submissions, and most served to complement clinical trial results. To meet FDA standards, RWE studies should be clearly designed and discussed with the FDA and include robust methods to minimize bias. Research Sponsor: Pfizer.

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**282**

**Poster Session**

**Utilization of anti-HER2 regimens among HER2-positive metastatic breast cancer patients.**

First Author: Sandhya Mehta, Dalichi Sankyo Inc, Basking Ridge, NJ

**Background:** HER2-positive (+) metastatic breast cancer (mBC) has a poor prognosis and many patients require multiple lines of HER2 targeted regimens. This study aims to examine the treatment sequencing of anti-HER2 regimens for HER2+mBC among Medicare beneficiaries. **Methods:** A retrospective study was conducted from 2015-2019 Surveillance, Epidemiology, and End Results (SEER) cancer registries and Medicare claims. **Results:** From 2015 to 2020, 458,135 patients initiated an anti-HER2 drug, and 336,454 patients initiated two or more anti-HER2 drugs. Discontinuation of anti-HER2 regimens was assessed and the FDA in their approval decision. RWE results were used to provide contextualization to the pivotal trial, rather than statistical comparison. Common data sources included Flatiron (38%) and chart reviews (38%). FDA critiques included lack of a priori study protocol, incomparability with the pivotal trial population and endpoints, and unconfirmed confounding. **Conclusions:** There have been few examples of RWE in oncology submissions, and most served to complement clinical trial results. To meet FDA standards, RWE studies should be clearly designed and discussed with the FDA and include robust methods to minimize bias. Research Sponsor: Pfizer.

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**281**

**Poster Session**

**Real-world outcomes among patients with epidermal growth factor receptor (EGFR) mutated non-small cell lung cancer treated with EGFR tyrosine kinase inhibitors versus immunotherapy or chemotherapy in first-line setting.**

First Author: Daniel Simmons, AstraZeneca plc, Gaithersburg, MD

**Background:** While EGFR tyrosine kinase inhibitors (TKIs) are the NCCN-recommended first-line (1L) therapy for non-small cell lung cancer (NSCLC) patients with EGFR mutations, many patients initiate non-targeted therapy (chemo) prior to receiving EGFRm test results. This study assessed clinical outcomes associated with initiating EGFR-TKI vs other therapies in stage IV EGFRm NSCLC. **Methods:** A retrospective study was conducted in adults with stage IV EGFRm NSCLC who initiated 1L EGFR-TKI, chemotherapy, or chemo alone from 2015-2017/2018, using Flatiron Health Electronic Health Record data. Treatment patterns were characterized with respect to timing of EGFRm test results. Kaplan-Meier analysis and log-rank tests were used to evaluate the median duration of therapy (DoT) and time to next therapy (TTNT), as proxies for progression-free survival. Adjusted hazards ratios (HR) and 95% confidence intervals (CI) representing the effect of 1L therapy on the risk of discontinuing treatment or death (DoT) and the risk of initiating second-line therapy or death (TTNT) were reported from multivariable Cox proportional hazards models controlling for differences in demographics, smoking history, histology, cancer stage, ECOG score, NCI index, time from diagnosis to treatment initiation. **Results:** Among 593 study pts, mean age was 67.5 years and 65.4% were female. EGFR-TKI was used as 1L therapy for 77.2% of pts (n=458), IO in 13.3% (n=79) and chemo in 9.4% (n=56), 7.2% of EGFR-TKI pts, 54.4% of IO pts, and 57.1% of chemo pts initiated 1L before receiving EGFRm test results. Compared to pts on IO and chemo, pts on EGFR-TKI had a lower median DoT (EGFR-TKI: 8.7 months [mo]; IO: 4.8 mo; chemo: 3.0 mo, p<0.01) and median TTNT (EGFR-TKI: 12.3 mo; IO: 6.5 mo; chemo: 4.0 mo, p<0.01). Adjusted analyses showed that compared to pts on IO or chemo, pts on EGFR-TKI had a significantly lower risk of discontinuing therapy or death (DoT) and initiating second-line therapy or death (TTNT) (Table). **Conclusions:** Substantial numbers of pts initiated non-chemo in 1L and EGFR-TKI was associated with better outcomes than IO or chemo, suggesting the importance of adhering to NCCN-recommended therapy for stage IV EGFRm NSCLC pts. Research Sponsor: AstraZeneca.

**Association between 1L therapy and real-world clinical outcomes.**

**Table:**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>HR</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGFR-TKI vs IO</td>
<td>0.49</td>
<td>0.34-0.70</td>
<td>0.02</td>
</tr>
<tr>
<td>EGFR-TKI vs chemo</td>
<td>0.29</td>
<td>0.13-0.65</td>
<td>0.0059</td>
</tr>
</tbody>
</table>

Conclusions: This is the first known feasibility study of linked administrative data to measure outcomes of large clinical panel sequencing for advanced solid tumors. Patients were recruited from August 2016 to 2018. Only clinically actionable variants based on OncoKB annotation Level 1 and 2 were assessed for genotyype-informed treatment decisions. **Results:** All 888 eligible patients were successfully linked to administrative data. Mean age was 58 (±13) years, 635 (71.5%) were female. Most common disease sites were ovary (26.4%), uterus (14.0%), colorectal (11.8%) and breast (9.5%). Administrative data vital status was more complete than trial collected data with 262 of 476 deaths only recorded in administrative data. Median survival was 1.70 years (95% confidence interval 1.50-1.91), 247 (27.8%) had actionable mutations, most commonly PIK3CA (54.7%), BRCA1 (15.8%), BRCA2 (15.0%) and BRAF (8.9%), 37 (15.0%) and 42 (17.0%) patients with actionable mutations received targeted therapy within 6 and 12 months of test report date, respectively. **Conclusions:** This is the first known feasibility study of linked administrative data to measure outcomes of large clinical panel sequencing for patients with advanced solid tumors. Vital survival and TKI use were more complete with administrative data compared to trial-collected data, and treatment data was successfully linked. About one in twenty-one enrolled patients received genome-informed treatments within 12 months, or about one in six of all patients with actionable mutations. This may be due to short intervals from test report to therapy initiation. Further studies are needed to standard of care treatments, early patient deterioration or limited alterations covered by the panel, among other causes. Research Sponsor: Ontario Institute for Cancer Research (OICR).
Methods: Using an oncology electronic database, consisting of >27,000 patients treated at our institution, we selected consecutive patients with metastatic or locally advanced lung, colon, pancreatic, bile duct and gastric cancers who started standard first-line. We then assessed the correlation between proceeding to second-line therapy and demographic and clinical variables, including age, gender, initial performance status, BMI, hemoglobin, WBC, creatinine, glucose, calcium, as well as duration on first line therapy and survival. Results: A total of 492 patients met the inclusion criteria. Their median age was 67 and 285 were men. Their diagnoses were colon (169), lung (102), pancreas (101), bile duct (65) and gastric (55) cancers. Only 52% (255) received second-line treatment for at least 30 days (36% colon, 26% lung, 18% pancreas, 9% bile duct and 11% gastric). Receipt of second-line therapy was associated with disease site (P<0.001) as well as with age, with patients who received second-line being 5 years younger compared to those who did not (64 vs. 69 years, P=0.004). Patients who reached second-line had better performance status and higher hemoglobin level at presentation, additionally their median duration on first-line chemotherapy was substantially longer (P<0.007 for all comparisons). Survival of patients not starting second-line was significantly shorter across all tumor types (19.8 vs 6.5 months, P=0.001). General deterioration and toxicity were the main reasons for avoiding second-line therapy at progression, 43% and 30% respectively. Conclusions: These real-life data indicate that only half of the patients starting standard dual or triplet treatment for advanced cancer reached second-line therapy, and this can be hardly predicted in advance using standard clinical and laboratory characteristics. Our data challenge the practice of saving good treatment options for subsequent lines, and call for the development of tools enabling prediction of response and tolerance to treatment, pursuing for better patient selection and patient-tailored therapy. Research Sponsor: None.

286 Poster Session Real-world utilization of quality-of-life data: Perspectives from community oncology providers. First Author: Bruce A. Feinberg, Cardinal Health, Dublin, OH

Background: Quality of life (QoL) is commonly assessed in oncology clinical trials. However, it is unclear if oncology healthcare providers (HCPS) perceive value in these metrics or if they impact clinical practice. We sought to assess the real-world utilization of QoL data and barriers to its adoption among oncology providers (APPs): Medical oncologists, radiation oncologists, hematologists, and advanced practice providers (APPs) participated in a survey to assess their perceptions and the utility of QoL data for routine practice during a live meeting in September 2019. Responses were captured via a web-based pre-conference survey and analyzed in advance of the live meeting. Participant characteristics and responses were summarized using descriptive statistics. Results: A total of 71 HCPs (51 physicians and 20 APPs) participated. Regarding perceptions of QoL in oncology, 50% of physicians and 32% of APPs reported aligning with the sentiment “it is important to have QoL, but efficacy is obviously the most critical endpoint.” HCPs reported that QoL may outweigh overall survival (OS) in certain clinical scenarios, such as in end-of-life (81%), frail patients (67%), or metastatic tumors (62%). When selecting between two agents with similar efficacy, safety was the most important factor (78%), followed by QoL (40%). 64% of physicians utilized aggregate QoL data from registral trials or real-world studies to keep informed about QoL of different treatments, while 69% of APPs relied on their personal or practice experiences. 85% of physicians and 84% of APPs responded that it is important to perform formal QoL assessments during routine patient visits. 88% of HCPs expected that QoL/patient-reported outcomes (PRO) collection will increase their workload. Patient burden (58%) and provider resources (43%) were other barriers for QoL/PRO collection, while 75% of HCPs did not believe that their understanding of QoL versus PRO, with 34% reporting that PRO was a subset of QoL and 28% reporting that QoL was a subset of PRO. Conclusions: Efficacy and safety are prioritized as clinical endpoints among oncology providers. This may be getting worse in certain clinical scenarios where QoL may provide more impactful data for HCPs in managing patients. Barriers remain to successful collection of QoL, and there is a need for further education among HCPs regarding PROs and QoL. Research Sponsor: Cardinal Health.

287 Poster Session Evaluation of outpatient cancer rehabilitation for upper extremity function in individuals with breast cancer. First Author: Mackenzi Pergolotti, The University of North Carolina at Chapel Hill, Chapel Hill, NC

Background: Specialized cancer rehabilitation is recommended for individuals with breast cancer from diagnosis through survivorship to mitigate the negative acute, late and lasting effects of cancer and cancer treatment on upper extremity functioning. However, evidence supporting the impact of cancer rehabilitation services on upper extremity function in the outpatient setting is lacking. Furthermore, there is no agreed upon definition of cancer rehabilitation. Methods: Individuals with breast cancer attending cancer-care specialized outpatient physical or occupational therapy provided by a single institution with multiple locations across the US in 2019, completed the Quick DASH (Disabilities of the Arm, Shoulder and Hand). From de-identified rehabilitation records, we abstracted patient and therapy characteristics, Quick DASH scores and therapy satisfaction scores (0-10 point scale) for individuals with a history of breast cancer (identified by ICD code). We used descriptive statistics to summarize characteristics, paired samples t-tests to evaluate Quick DASH scores from initial evaluation (pre) and discharge (post) therapy, and independent samples t-test to compare mean pre-post difference for individuals younger than 65 (<65) versus 65 and older (≥65). Results: Patients (N = 556) were 60.56 ± 12.24 (range = 31.52-89.95) years old and predominantly female (n = 551, 99.1%). They attended cancer rehabilitation (Physical: n = 477, 85.8%, Occupational: n = 79 (14.2%) for a median of 8 (IQR= 5.0 - 13.0) sessions over 8.97 ± 7.57 (range = 0.71-47.7) weeks. The pre-post change in Quick DASH score (13.51) was significant (p<0.001) and exceeded the validated minimal clinically important difference (-12.0). There was no significant difference between average pre-post change for Quick Dash scores between <65 (n = 334, 60.1%) and ≥65 (n = 222, 39.9%) groups (t = -4.04, P-value = 0.001). There was no significant difference between average pre-post change for Quick Dash scores between <65 (n = 334, 60.1%) and ≥65 (n = 222, 39.9%) groups (t = -4.04, P-value = 0.001). Therapy satisfaction was rated high (median = 10.0, IQR = 10.0-10.0). Conclusions: Specialized rehabilitation for individuals with breast cancer was associated with statistically and clinically significant improvement in upper extremity function and high rates of satisfaction. These findings add to the growing evidence for specialized outpatient cancer rehabilitation. Research Sponsor: None.
Patients can easily audio record medical consultations. Oncologists’ attitudes towards recording visits are unknown yet may impact patient care. Methods: A mail survey of oncologists practicing at 5 U.S. Alliance for Clinical Trials in Oncology sites collected information on clinicians’ beliefs, preferences, and practices regarding patient-initiated recordings, along with sociodemographic and practice characteristics. Descriptive statistics and bivariate analyses were calculated. Results: Of 523 eligible oncologists, 352 (67%) completed the survey. Median age was 47 years, 33% were female, and 86% worked in an academic setting. 53% were medical oncologists, 30% surgical oncologists, and 17% radiation oncologists. Virtually all (93%) reported experience with patients recording visits, 79% at least weekly. The majority (74%) perceived that patients record visits in order to help understand treatment choices. While 79% reported that they “always” agree to recordings, 26% reported discomfort. Nearly one-third (29%) reported concerns about liability, 26% felt recording made discussion less natural, and 18% felt recording changed the way they conveyed information. Although 86% agreed that patients have the right to record visits, nearly all felt physician permission was required and 51% reported having been previously recorded without permission. Only 51% believed recording had a positive impact on the patient-doctor relationship. One-quarter (28%) felt that recording led to a less detailed conversation and 33% felt it contributed to avoidance of difficult topics, such as prognosis. Most preferred the patient/family taking notes or having access to a written summary. Views did not vary significantly based on practice setting, specialty, or region of the country. Older age and greater years in practice were associated with both greater comfort with recording and the perception that recording has a positive impact on the patient-doctor relationship (p < 0.001). Conclusions: While most oncologists report comfort with audio recording and recognize benefits for patients, a substantial minority have reservations about its impact on clinical discussions and their liability exposure. Adopting clear institutional policies about recording could help address some concerns, such as surreptitious recording, while ensuring that patients’ interests are served. Research Sponsor: The Greenwall Foundation.

Oncologist experiences regarding patient-recorded clinical encounters: Implications for the patient-doctor relationship. First Author: Rachel Jimenez, Massachusetts General Hospital, Boston, MA

Background: The high prevalence of smartphone use means that most patients can easily audio record medical consultations. Oncologists’ attitudes towards recording visits are unknown yet may impact patient care. Methods: A mail survey of oncologists practicing at 5 U.S. Alliance for Clinical Trials in Oncology sites collected information on clinicians’ beliefs, preferences, and practices regarding patient-initiated recordings, along with sociodemographic and practice characteristics. Descriptive statistics and bivariate analyses were calculated. Results: Of 523 eligible oncologists, 352 (67%) completed the survey. Median age was 47 years, 33% were female, and 86% worked in an academic setting. 53% were medical oncologists, 30% surgical oncologists, and 17% radiation oncologists. Virtually all (93%) reported experience with patients recording visits, 79% at least weekly. The majority (74%) perceived that patients record visits in order to help understand treatment choices. While 79% reported that they “always” agree to recordings, 26% reported discomfort. Nearly one-third (29%) reported concerns about liability, 26% felt recording made discussion less natural, and 18% felt recording changed the way they conveyed information. Although 86% agreed that patients have the right to record visits, nearly all felt physician permission was required and 51% reported having been previously recorded without permission. Only 51% believed recording had a positive impact on the patient-doctor relationship. One-quarter (28%) felt that recording led to a less detailed conversation and 33% felt it contributed to avoidance of difficult topics, such as prognosis. Most preferred the patient/family taking notes or having access to a written summary. Views did not vary significantly based on practice setting, specialty, or region of the country. Older age and greater years in practice were associated with both greater comfort with recording and the perception that recording has a positive impact on the patient-doctor relationship (p < 0.001). Conclusions: While most oncologists report comfort with audio recording and recognize benefits for patients, a substantial minority have reservations about its impact on clinical discussions and their liability exposure. Adopting clear institutional policies about recording could help address some concerns, such as surreptitious recording, while ensuring that patients’ interests are served. Research Sponsor: The Greenwall Foundation.

Use of BRCA testing among patients diagnosed with pancreatic cancer: Analysis of commercial claims database in the United States. First Author: Gboyega Adeboyje, Merck & Co., Inc., Kenilworth, NJ

Background: The role of BRCA testing to guide the course of pancreatic cancer treatment has evolved in the last couple of years. In December 2019, FDA approved the first PARP inhibitor for pancreatic cancer. However, little is known about the use of BRCA testing among pancreatic cancer patients. This study assessed the trend in the prevalence of BRCA testing and predictors of receiving a BRCA test among newly diagnosed pancreatic cancer patients. Methods: The study assessed 2012-2018, Optum Clininformatics Datamart database. Patients newly diagnosed with pancreatic cancer, continuously enrolled in a health plan for at least 6 months before and after diagnosis were included in the study. Claims for BRCA testing were identified after diagnosis using HCPCS, ICD-9/10 procedure, and LOINC codes. The prevalence of BRCA testing was calculated for patients diagnosed in each year from 2012-2017. Multivariable logistic regression was used to assess predictors of BRCA testing controlling for sociodemographic and clinical factors. Results: From a total of 5,339 pancreatic cancer patients included, 293 (5.5%) patients received a BRCA test. The prevalence of BRCA testing increased from 1.2% in 2012 to 7.7% in 2017. Of patients receiving a BRCA test, 198 (67.6%) were tested within 1 year of diagnosis. The median time to receive a BRCA test from diagnosis was 158 days (mean: 269.1 days). Results from logistic regression indicated that younger age at diagnosis (eg.18-44 years versus ≥75 years, odds ratio [OR] = 3.24), diagnosis in recent years (eg. 2017 versus 2012, OR = 6.86), presence of metastasis (OR = 1.86), family history of cancer (OR = 2.26), plan type (point of service versus health maintenance organization, OR = 2.31) and Charlson comorbidity index score (0 vs ≥3, OR = 1.87) significantly (p < 0.05) increased odds for receiving BRCA test. The odds for the BRCA test did not vary statistically significantly by gender (female, OR = 1.25), insurance type (commercial versus Medicare Advantage, OR = 0.90), and census region (eg. Northeast versus West, OR = 1.03). Conclusions: The prevalence of BRCA testing among pancreatic cancer patients was low but increased significantly over time. Several demographic and clinical factors were associated with the use of BRCA testing among pancreatic cancer patients. Research Sponsor: Merck & Co., Inc.
Background: Time to treatment (TTT) for head and neck (H&N) malignancies were reviewed for all patients treated at Northern Light Cancer Institute, from 2013 to 2017. A total of 297 cases were identified. Methods: TTT was defined as time of tissue diagnosis by biopsy to the first treatment day. Data was compared to a comprehensive study of 5,165 cases conducted by Murphy et al [JCO, 34; 2, Jan 10, 2016]. Median days to treatment were compared by tumor site and treatment modality. Comparison of the distribution of cases where TTT exceeded the critical time point of 67 days (determined by Murphy) was also made. The primary mode of treatment was a combination of chemotherapy and radiation (concomitant) in 39.5% of patients. Other treatment modalities included radiation only (17.2%), and surgery, either as stand-alone treatment, or followed by subsequent additional treatment (32.4%). These treatment modalities comprise 89.1% of all cases. Results: We identified 82 (27.7%) patients with oral cancer, 99 (33.5%) with oropharyngeal malignancy and 92 (31.1%) with laryngeal cancer. Median TTT was 40 days (compared to 34 days found by Murphy) for chemoradiation patients, 42 versus 3 (for radiation only, and 34 (versus 17) for surgery. TTT for surgery patients was significantly shorter than the other two treatment modalities (p < 0.05). There were no significant differences in TTT based on primary site. All comparisons to Murphy (treatment and primary site) were significantly lower (20.3%) found by Murphy, compared with 30.9, 23.3, 8.3, and 9% respectively found by Murphy. Conclusions: TTT for H&N cancers has been relatively stable over the 5-year time course examined. The majority of our patients (50%) are treated in the 31-52 day timeframe compared with the first 30 days (59.5%) by Murphy. Our data suggest similar percentages (30.2 versus 9%) after which patients had poorer outcome. Further efforts should be entertained to make sure patients are seen sooner in the oncology clinic. Research Sponsor: None.

Results: Of 19 participants, 16 completed the case survey. All oncology fellows (n = 19) at the University of California, Los Angeles were invited to participate in a quality improvement project. They submitted data and completed the same patient survey, but this time they were presented with 10 patient profiles (real-life, de-identified stage II cases corresponded to their own practice) and queried for their recommendations (adjuvant chemotherapy and frequency of surveillance) via an online survey. Next, they took part in a live meeting where the Immunoscore data were introduced and completed the same patient survey, but this time they were presented with 10 patient profiles (real-life, de-identified stage II cases corresponded to their own practice) and queried for their recommendations (adjuvant chemotherapy and frequency of surveillance) via an online survey. They learned the importance of taking triage nurses input to improve their job satisfaction. During this process, we also learned that the triage nurses input was not utilized in their day to day work. This improved their work flow, increased their time performing direct patient care related functions, and increased their overall job satisfaction. Further process is recommended to better define the role of the phone triage nurse with the multidisciplinary care team of complex hematology/oncology patients. Research Sponsor: None.

Impact of immune assessment on patterns of care in stage II colon cancer.

First Author: Afsaneh Barzi, City of Hope Comprehensive Cancer Center, Duarte, CA

Background: Approximately 25% of patients with colon cancer are diagnosed at stage II. Recommendations for adjuvant chemotherapy and follow-up for these patients are risk-based, however the benefit of therapy is not supported by consistent, robust evidence and there are physical and financial barriers associated with adjuvant therapy. Immuno-assessment has been proposed as a means for risk refinement through measurement of the immune response to the tumor. However, the impact of this tool on physician recommendations for clinical management has yet to be defined. Methods: Medical oncologists were presented with 10 patient profiles (real-life stage II colon cancer patients) and queried for their recommendations (adjuvant chemotherapy and frequency of surveillance) via an online survey. Next, they took part in a live meeting where the Immunoscore data were introduced and completed the same patient survey, but this time they were presented with the Immunoscore classification (High or Low) assigned. A physician was counted as influenced by immune response assessment when there was at least one therapeutic modification (chemotherapy decision or surveillance densification) after an Immunoscore test result was provided. We hypothesized that a rate of practice change of 30% (H) would be considered an impactful result, while 10% would not be impactful (HO). According to a Hern’s design with a one-sided alpha of 5% and 80% power, 25 physicians needed to be included to test the hypothesis. If 6 or more practice changes ( ≤ 24%) were observed, the study would be considered positive. Results: Twenty-five physicians were enrolled, representing a range of practice settings from academic medical centers, to high-volume hospital networks, to private community practices; all physicians had experience in treating stage II colon cancer. On average, physicians elected to change their chemotherapy and/or surveillance recommendations 56% of the time, therefore the objective of the study was reached. All but one physician (96%) changed their recommendations at least one case, the most common change was to add chemotherapy in at least 1 case. The rate of change for chemotherapy prescription was 36% per patient case (range: 7-13 changes). Altered surveillance strategies were infrequently observed when chemotherapy recommendations changed. Conclusions: In this physician survey of real-world stage II colon cancer patients, Immuno-assessment influenced physician practice-making. This impact can translate into a significant reduction in non-value care. Research Sponsor: HalioDx.
Evaluation of a centralized toxicity view in the electronic health record (EHR) for physician-recorded Common Terminology Criteria for Adverse Events (CTCAE). First Author: Rebecca Levin-Epstein, Department of Radiation Oncology, University of California, Los Angeles, CA

Background: Patients’ treatment-related acute and late toxicities are essential clinical data, yet this information is widely dispersed among notes in the EHR. This lack of structure primarily depends on self-triage of symptoms by patients and clinicians in order to efficiently and comprehensively integrate toxicity information into clinical management. We aimed to consolidate toxicity data to improve clinician efficiency in accessing this information, and to evaluate the utility of this tool in radiation oncology.

Methods: We developed an auto-updating flowsheet view ("Synopsis") in the Epic EHR that longitudinally integrates physician-graded CTCAE toxicity selected using a SmartForm embedded in EHR notes. Physicians timed themselves performing 4 tasks to assess acute and post-treatment toxicity recorded using a SmartForm embedded in EHR notes. Physicians timed themselves performing 4 tasks to assess acute and post-treatment toxicity recorded using a SmartForm embedded in EHR notes. Physicians timed themselves performing 4 tasks to assess acute and post-treatment toxicity recorded using a SmartForm embedded in EHR notes. Physicians timed themselves performing 4 tasks to assess acute and post-treatment toxicity recorded using a SmartForm embedded in EHR notes.

Results: Six physicians reviewed 98 patients seen in follow-up (49 with Synopsis, 49 without Synopsis) at median 8.1 months (Synopsis) and 6.5 months (no Synopsis) since completion of radiation (p = 0.88). Use of Synopsis was associated with significantly faster assessment of: overall toxicity history (median 50 vs. 93 seconds, p = 0.0007), highest acute toxicity during treatment (median 19 vs. 40 seconds, p = 0.0002), highest post-treatment toxicity (17 vs. 65 seconds, p < 0.0001), and longitudinal review of a single symptom (8 vs. 61 seconds, p < 0.0001). Among 10 physician survey respondents, 100% reported that Synopsis improved efficiency and 30% reported it led to a change in management. All physicians felt it was important to understand a patient’s toxicity history, but 80% reported that time required with the note-based EHR structure was prohibitive; with use of Synopsis, 90% reported that this task was now feasible. Specific domains most improved included ability to: identify high-grade toxicities (100%), contextualized new symptoms (80%), summarize treatment-related toxicity (80%), navigate in the EHR to a time of high-grade toxicity (60%), evaluate the success of an intervention (30%), and decide whether to discuss a reported new symptom (30%).

Conclusions: A centralized toxicity view in the EHR improves clinician efficiency and enhances toxicity history, thereby enhancing clinician ability to comprehensively integrate toxicity information into patient care. Research Sponsor: UCLA Health Resident Informaticist Program.

Initial implementation of an electronic oncology trigger tool for adverse event detection. First Author: William Lyons, Memorial Sloan Kettering Cancer Center, New York, NY

Background: In 2009, the Institute for Healthcare Improvement (IHI) conceived the Global Trigger Tool (GTT), a method for identifying adverse events that relies on correlated clinical documentation, "triggers", in the medical record. This method is intended to augment traditional quality of care, data collection, and error reporting by primarily depending on spontaneous reporting and error tracking. However, the original trigger tool called for a manual identification of trigger events and is too broad to be useful in an oncology setting.

We propose a method for the development, selection, electronic extraction and management of triggers relevant to an oncology setting, with the primary aim of improving our understanding of the prevalence of adverse events occurring during an inpatient stay. Methods: Our implementation of an Electronic Trigger Tool includes three parts: trigger selection, review system development, and the chart review process. Through literature review, we developed a library of 40 oncology-relevant trigger tools.

Results: We then selected two pilot triggers based on expert opinion and a trigger analysis on length of stay, cost, and patient satisfaction. Next, we developed a web-app that allows reviewers to automatically receive trigger events. Finally, two clinical professionals reviewed five trigger events from each trigger for five subsequent weeks.

Results: We selected Narcan administration (M9) and unexpected/unplanned ICU admission after non-emergent surgical procedure (S3) as pilot triggers. Our reviewers each performed a chart review on 25 vs each trigger, resulting in 100 independent reviews. We found that M9 had a positive predictive value (PPV) of 52 (26 AE's / 50 reviews) and S3 had a positive predictive value of .88 (44 AE's / 50 reviews). We also found that most of these adverse events were not found by other quality systems. Conclusions: Our pilot of two triggers demonstrated we can capture adverse events that exist outside known quality and safety resources on a small scale and with high PPV. We anticipate using novel trigger information to inform process improvement and quality of care for patients with cancer at our hospital. Research Sponsor: None.

Mobile health tool for monitoring cancer treatment complications. First Author: Amit Sanjal, SSM Health Cancer Care, Madison, WI

Background: Side effects after cancer treatment are ubiquitous, seen in up to 93.3% of patients in one Phase III lymphoma trial. Additionally, cancer patients are at a greater risk of mortality from infections such as coronavirus disease 2019 (COVID-19), prompting recommendations for routine screening. Current care delivery models rely on self-triage of symptoms by patients on results in delayed management and avoidable emergency room visits and hospitalizations. Technology based symptom monitoring allows early identification of complications, reduces symptom burden, cost of care and enables early detection of relapse. We studied utility of a mobile-health tool for toxicity monitoring and COVID-19 screening.

Methods: We developed an application that periodically delivers disease specific toxicity questionnaires to patients following cancer treatment. Based on NCI-PRO-CTCAE form builder, the tool is designed to be delivered through SMS or e-mail. Symptoms or specified thresholds are flagged for medical care team follow-up. Patient and staff experience as well as medical interventions are captured.

Results: Currently, 68 patients with different malignancies are enrolled. Median age 60 years (range 24-85), 35 males, 31 females. 72.35% patients rated user experience at 4 or higher (1-5 scale, 5 highest). Aggregate provider rating was 3.25 (1-5 scale, 5 highest). Of 639 captured responses, 157 reported fatigue, 145 no symptoms, 57 nausea/vomiting or diarrhea, 52 numbness/tingling and 48 shortness of breath. 76 responses were flagged for nurse follow-up calls. These resulted in 72 successful outpatient symptom management, 2 hospitalizations for neutropenic fever, 1 MRI diagnosis of lymphoma progression. 92% of patients received a follow up within one business day. Median time between response recorded and follow up completed was 55 minutes. Of 1299 responses recorded by COVID-19 screening, 1175 reported no symptoms. All positive responses (47 cough, 52 diarrhea, 5 fever and 20 dyspnea) were false positives. Study is ongoing with recent implementation of a distress screening and survivorship modules.

Conclusions: Electronic capture of symptoms using connected technology is feasible and can be used to screen cancer patients for treatment related complications as well as pandemic related illnesses. Research Sponsor: None.

Development of self-management tip sheets for medical oncology and surgical patients electronically reporting symptoms in the home-care recovery setting. First Author: Deborah Schrag, Dana-Farber Cancer Institute, Boston, MA

Background: Patients receiving cancer treatments, including chemotherapy and surgery, often face immense morbidities. Poor symptom control frequently leads to decreased quality of life and an increased need for acute care services. For patients undergoing chemo, adverse side effects can deter them from receiving life-saving therapies. Similarly, poorly managed postoperative symptoms can delay recovery and timely receipt of adjuvant therapies. Empowering patients to proactively monitor, electronically report, and effectively treat symptoms in the home-care setting is critical to improving clinical outcomes.

Methods: Through the NCI’s Moonshot-funded IMPACT consortium, 6 health systems developed a library of 70 open source symptom management tip sheets for medical oncology and surgical patients. The study team went through an iterative process with medical oncologists, surgeons, practice nurses, health educators, and patient advocates. Careful attention was paid to minimize the usage of regional dialects or idioms to ensure scalability and acceptability. The tip sheets achieved passing scores on two validated healthy literacy and readability tools. Results: Tip sheets were accessible to patients participating in the novel eSym and the incorporated tips were deployed at four health systems between fall 2019 and spring 2020 (Baptist Cancer Center, West Virginia University, Dartmouth-Hitchcock Medical Center, and Maine Medical Center). Patients enrolled in eSym had access to the tip sheet library through their patient portal and could view them at any time. In addition, after completing an ePRO questionnaire, patients were given dedicated links to the tips for symptoms they reported. Each developed tip sheet included 4 sections: 1) things you can do on your own, 2) with over-the-counter medications, 3) with the help of your care team, 4) when to call your care team for help. This simplified structure allowed patients to determine how to manage symptoms on their own and when to seek out additional assistance.

Conclusions: Electronic tip sheets are a feasible and accessible means to patient-reported symptoms through a fully integrated patient portal platform is a novel approach to symptom management. Future efforts will include deploying the library and platform at two additional health institutions and continuing the adoption assistance and understanding its impact on clinical care outcomes. Research Sponsor: U.S. National Institutes of Health.
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Poster Session
Reducing burdens of site feasibility assessments for conducting clinical trials. First Author: Dax Kurbegov, Sarah Cannon, the Cancer Institute of HCA Healthcare, Nashville, TN

Background: Current methods to assess site feasibility for industry-funded clinical trials are onerous and delay patient access to novel treatment options and high-quality clinical trials. Industry sponsors and contract research organizations utilize a high volume of site pre-screening and site feasibility assessments. These burdens prolong trial start-up times and are a barrier to sites participating in oncology trials. The American Society of Clinical Oncology (ASCO) Research Community Forum convened a task force to identify ways to improve the site feasibility assessment process. Methods: Data were collected from: 1) survey to assess site burdens, 2) collation of site feasibility questionnaires (SFQs), and 3) stakeholder meeting to discuss potential solutions. The task force then developed recommendations for process improvements and obtained stakeholder feedback through a survey.

Results: 113 oncology practices (66 community, 47 academic) reported completing a median 5 SFQs and 2 pre-study site visits (PSSVs) per month. SFQs took a median 2 hours to complete whereas PSSVs took a median 4 hours to complete. Most considered SFQ (80%) and PSSV (96%) content redundant to information previously provided, and SFQs similar between different sponsors (86%). The median time from first contact to first patient enrolled was 6 months. The 40 respondents to the stakeholder survey represented 19 academic- and 9 community-based sites, 8 industry sponsors, and 4 CROs. Most preferred a model with a short SFQ plus a PSSV when there was not a prior relationship. If there was a prior relationship, either a PSSV or teleconference was preferred. All stakeholders identified time savings, expedited start-up, fewer site resources, and cost savings as the greatest benefits. The greatest barriers to adoption were buy-in from sponsors and CROs, and insufficient information about site capabilities.

Conclusions: Site feasibility assessments for industry-sponsored trials are important to ensure patient safety and access to high-quality clinical trials. However, current methods are inefficient and time and resource intensive. This initiative provided insights about challenges for sites and the viability of a fundamental change to site feasibility assessments. ASCO recommendations are forthcoming on improving processes, standardizing and minimizing questions, and using portals that are effective across all trials and clinical research scenarios. Research Sponsor: ASCO program support (Research Community Forum).

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Poster Session
Analysis of systemic therapy delivery for gastrointestinal cancer patients during the COVID-19 pandemic. First Author: Robert Power, Trinity College Dublin, Dublin, Ireland

Background: As of June 16, 0.51% of the Irish population has had a confirmed diagnosis of COVID-19, and incidence of new infections peaked on April 10. Cancer patients treated with systemic anticancer therapy (SACT) may have increased risk of contracting COVID-19, and greater incidence of adverse outcomes. We aimed to assess the impact of a COVID-19 SACT clinical pathway on the incidence of SARS-CoV-2 infection in gastrointestinal cancer patients, and alterations to SACT regimens attributed to the COVID-19 pandemic.

Methods: A COVID-19 SACT clinical pathway for patients undergoing treatment in a haematology oncology day care (HODC) service was designed and implemented. Interventions included visitor restrictions, telephone clinics, mandatory masks and temperature checks for staff, social distancing at all workflows, and establishment of a COVID-19 screening pod. A prospective registry of all gastrointestinal cancer patients attending the HODC clinic between February 1 and April 30 2020 was initiated following institutional ethics board approval. Clinical data were retrieved from electronic health records including demographics, performance status, comorbidities, SACT regimens (including changes to treatment), SARS-CoV-2 testing, and radiologic treatment responses. Results: In this period, 175 gastrointestinal (88 gastrosophageal, 8 hepatobiliary, 79 colorectal) cancer patients attended 931 HODC outpatient clinics. Of this, 41 (23%) underwent at least one SARS-CoV-2 test. No patients tested positive. Two gastroesophageal cancer patients undergoing neoadjuvant chemoradiotherapy presented with SARS-CoV-2 negative suspected viral pneumonia and respiratory failure; both required intensive care unit admission and one died. SACT regimen was altered in 48 (27%) patients due to the COVID-19 pandemic. Changes involved prescription of alternative oral therapies (21%), treatment breaks (17%), and stopping treatment (11%). Most (88%) regimen changes took place in a single 3-week period (April 16-27 March) that coincided with the announcement of government-mandated social distancing measures.

Conclusions: Implementing a COVID-19 SACT clinical pathway resulted in a low incidence of SARS-CoV-2 infection in gastrointestinal patients undergoing systemic treatment. SACT regimen changes were common; prospective monitoring of this cohort is ongoing to determine whether these alterations affect patient outcomes. Research Sponsor: None.

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Poster Session
Utilization of a clinical pathways decision support (CPDS) tool to guide myeloid growth factor usage in metastatic cancer. First Author: Jeff Dang, New Century Health, Brea, CA

Background: Myeloid growth factors (MGF) are used to prevent and treat febrile neutropenia caused by immunosuppressive therapy. In the curative setting, the use of a full dose-intensity chemotherapy plus a MGF are recommended based on the febrile neutropenic risk levels, as maintaining the full dose intensity is known to increase overall survival. There is little data assessing the effectiveness of CPDS models in the curative setting, instead of administering an MGF to maintain dose-intensity, decreasing the dose and/or delaying the chemotherapy to allow recovery of the neutrophils is a reasonable alternative. This is supported by the American Society of Clinical Oncology (ASCO) which recommends that sites should consider using CPDS to support the use of MGFs to maintain dose-intensity in the treatment of metastatic cancer. In addition, no improvements in disease-free or overall survival were reported for any common cancer with the use of MGFs. New Century Health’s goal is to proactively educate and promote appropriate utilization of MGFs in the metastatic setting by incorporating several non-invasive questions into a Clinical Pathways Decision Support (CPDS) tool that aligns with ASCO's recommendation (e.g. has a dose reduction/delay been attempted?). Methods: For a Medicare population, approved treatment requests involving the use of chemotherapy in metastatic cancer in the baseline period (baseline: January 2019 to May 2019, n = 606) were compared to requests approved in the implementation period (intervention: June 2019 to November 2019, n = 615). Two states were included in the analyses: Arizona (baseline: n = 200, intervention: n = 237) and Florida (baseline: n = 442, intervention: n = 422). Chi-square (χ²) tests were performed to evaluate differences in requests during the baseline period as compared to the intervention period. Results: In Arizona, Florida, and total sample, treatment requests for MGF in metastatic cancer were significantly lower in the intervention period as compared to the baseline period (Arizona: 21.52% vs. 28.50%, Florida: 18.48% vs. 23.98%, and total sample: 18.86% vs. 25.25%). In the total sample, the finding was that treatment requests for MGF in metastatic cancer were significantly lower in the intervention period as compared to the baseline period (χ² = 7.25, p = .007). Conclusions: ASCO recommendations were incorporated into a CPDS tool to help align prescribing behavior.Real world data was used to help evaluate whether this change led a reduction in the utilization of MGFs in metastatic cancer. These findings suggest that such approaches can help guide providers to best practice. Research Sponsor: None.

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Poster Session
The success of the Rapid Diagnostic Clinic (RDC) detecting new cancers in patients with non-localizing symptoms. First Author: Jan Sindhar, Kings College London, London, United Kingdom

Background: Rapid Diagnostic Clinics (RDC) are being set up across the UK to allow primary care physicians to refer patients with symptoms concerning for cancer that do not fulfil tumour-specific two week wait urgent referral criteria. Guy’s RDC was established to address the high cancer related mortality in our region. The assessment of curable cancer in patients who present with complex vague symptoms is challenging for primary care. The 7% rate of cancer diagnosis exceeds many tumour specific urgent pathways which supports the need for rapid tailored diagnostics. The de- tection of pre-malignant conditions in 6% allows surveillance and intervention to potentially improve long-term outcomes. RDCs are likely to be pivotal in the cancer recovery phase of the COVID-19 pandemic. Research Sponsor: None.

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Development and implementation of an evidence-based malignant hematology clinical pathway program. First Author: Amanda Brahim, Memorial Healthcare System, Pembroke Pines, FL

**Background:** Clinical pathways provide a means to maximize value-based care for cancer patients. They have been associated with decreased costs and outcome improvements. Our institution entered a transformative partnership with NCI designated comprehensive cancer center for the treatment of hematologic malignancies. As part of the collaboration, a multidisciplinary task force was established to adapt clinical pathways within our system. Given the multiple new drug approvals for the treatment of Acute Myeloid Leukemia (AML), it was the first pathway created.

**Methods:** The taskforce consisted of physicians, pharmacists, nurses, quality manager, and information technology staff. The group met weekly to draft algorithms in accordance with national guidelines, updated evidence and institutional preferences. Electronic Medical Record (EMR) treatment plans were reviewed in a secondary multidisciplinary workshop and validated to ensure compliance with the AML pathway. When applicable, specific criteria for use were developed to aid in medication use optimization. The finalized pathway and treatment plans were presented and approved at our clinical standards committee meeting. A chart audit was performed one year after pathway implementation to assess adherence, with a goal of 80% or higher. The results were compared to an audit assessing adherence to best available clinical evidence for the year prior to implementation.

**Results:** The group established a consensus on treatment, laboratory testing, and supportive care, including anti-emetic, anti-microbial, and tumor syndrome (TLS) prophylaxis. Electronic order sets were created for bone marrow biopsies, transfusion support, TLS and febrile neutropenia. Thirty-two EMR treatment plans for AML were built and/or revised, while five were inactivated. A total of 88 patient charts were included in the pathway adherence audit (44 before and 44 after implementation). Pre and post pathway adherence was 64% and 89%, respectively (p=0.006). Deviations were categorized by type (table). **Conclusions:** AML pathway development and implementation resulted in standardization of treatment regimens, supportive care and higher adherence to institutional evidence based practices. Research Sponsor: None.

Table: Deviation Pre Pathway Post Pathway

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Status of digitization of medical records in oncology centers in India: A survey of current status. First Author: Kirthika Nageswararaj, Sri Ramakrishna Hospital, Coimbatore, India

**Background:** Electronic medical or health record (EMR/EMR) system is yet to be uniformly adopted in India. In 2012 and 2016 Indian Ministry of Health published a detailed roadmap for EMR adoption. We wanted to assess the status of EMR/EMR adoption in oncology centers in India.

**Methods:** Authors developed a short online survey to capture the use of paper charts vs. generic EMR vs. oncology specific EMR by practicing oncologists in India. The survey was shared to oncologists. All data was collated anonymously and data aggregated for analysis. Survey will remain open till July 4, 2020.

**Results:** At the time of abstract submission on June 16, there were 48 unique survey responses. Of those who responded to the survey, 69% were 25-45 years of age, 73% were male, 71% were practicing in the state of Tamil Nadu, and 27% were practicing in a rural area or close to a small city. Oncologists from South India were represented in the survey including radiation oncology (10%), medical oncology (25%), medical oncology, (6%), and pediatric oncology/hospital medicine (4%). About 46% had completed their training within the last 10 years, and 30% of respondents have done part of their training in foreign countries. Summary of responses to our survey is provided in the table below. **Conclusions:** Paper chart is still the predominant mode of clinical data capture within oncology centers. Administrative barriers and cost are perceived as major obstacles despite most oncologists reporting that they would very likely adapt to an onc-specific EMR. Research Sponsor: None.

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Impact of curated data on electronic quality measure capture rates within CancerLinQ. First Author: Katrina Caridad Rios, American Society of Clinical Oncology, Alexandria, VA

**Background:** Accurate calculation of key quality measures is critical for informing high-quality, value-based cancer care that is consistent with clinical guidelines. The American Society of Clinical Oncology (ASCO)’s CancerLinQ enables oncology organizations around the US to view near real-time quality measure dashboards sourced from structured electronic medical record (EMR) data; however, use of structured data in key fields is highly variable. Unstructured content, such as progress notes, contains important population-based data that is difficult to extract from unstructured EMR data such as patient medical records. Our study evaluated the impact of digitalized medical records on the capture of key quality measures for cancer patients.

**Methods:** A total of 96,399 records across 57,232 patients from 4 EMR vendors were analyzed from 2018-2019 across structured EMR and curated data. Each record represents 1 of 7 key data elements used to calculate the Staging Documented within One Month of First Office Visit quality measure. Structured documentation of these data elements determines if a patient is concordant with the measure, meaning they were staged within 31 days of their first visit after diagnosis, or non-concordant, meaning they were not staged within the appropriate window. **Results:** More than a quarter of records from patients concordant or non-concordant with the measure (28.85%) had key data elements sourced from unstructured EMR data. In total, 33% of all records among concordant patients were sourced from unstructured EMR data. Based on the amount of use from structured data alone, 67% concordance among unstructured records. This demonstrates that appropriate care may often be delivered but documentation may be missing in a significant fraction of structured EMR data, thus limiting accurate reporting capabilities. **Conclusions:** NLP-assisted curation can meaningfully supplement structured EMR data by providing a more accurate picture of care rendered, which can have substantial impacts on clinical care, quality reporting, and business operations. Research Sponsor: None.

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We implemented our CDS tool December 12, 2019. As of mid-June, ahead of the guidelines of Tier 1B protocols perhaps reflecting the rapidly changing literature that is medical oncologist. Interestingly, Multiple Myeloma had the highest utilization the lowest adherence rate of 58%. This data can be further stratified among the breast cancer group. Multiple Myeloma and Sarcoma were tied for the most plans with the highest adherence to Tier 1A plans, specifically 92% regardless of the line of treatment. GI and breast cancers were responsible for demonstrating 81% adherence to NCCN approved regimens across the system, (81%) are Tier 1A, 310 (2%) are Tier 1B and 4 (.2%) are Tier 2. Thus dem-onstrating 81% adherence to NCCN approved regimens across the system, regardless of the line of treatment. GI and breast cancers were responsible for the most plans with the highest adherence to Tier 1A plans, specifically 92% among the breast cancer group. Multiple Myeloma and Sarcoma were tied for the lowest adherence rate of 58%. This data can be further stratified by medical oncologist. Interestingly, Multiple Myeloma had the highest utilization of Tier 1B protocols perhaps reflecting the rapidly changing literature that is ahead of the guidelines. Conclusions: We demonstrated adherence to NCCN protocols 81% of the time over a 6 month period and over multiple cancer types. Protocol tagging and reporting utilizing the EMR alone could be used as a powerful model for value based care. We identified disease areas that will require further education regarding evidence based treatment and can consider interventions including real time feedback to clinicians and/or best practice advisories or quality based incentives. Research Sponsor: None.

Background: Reducing variation in care can improve outcomes and decrease costs. Evidence based medicine drives cancer guidelines and adherence promotes quality cancer care. Value based programs are based on adherence to pathways. Most institutions adopt costly cloud based clinical pathways products but none are mature products that fully integrate with the EHR and they require additional data entry. We present our simple Clinical Decision Support (CDS) tool for identifying best practice treatment protocols driven by the cancer diagnosis in the EMR for our large, multi-site, mixed academic and community cancer system. Methods: Our chemotherapy council must approve all protocols that are published in the system’s Epic Beacon library using a rigorous scoring system based on level of evidence and FDA or NCCN approval. Then each protocol is “tagged” appropriately: “Tier 1A”: Preferred Regimens/NCCN Approved; “Tier 1B”: Preferred Regimens/Chemo Council Approved (but not NCCN Approved); Tier 2: Specific Disease Management Team approved regimens; and finally “Other” or research protocols. When the oncologist enters the treatment plan in EPIC, a list of protocols are suggested, ordered by level of evidence, based on the cancer diagnosis and with the easily visible level of evidence or “tag” to allow data driven decision making. Results: We implemented our CDS tool December 12, 2019. As of mid-June, 2020 a total of 1637 treatment plans have been implemented. Of those, 1323 (81%) are Tier 1A, 310 (2%) are Tier 1B and 4 (2%) are Tier 2. Thus demonstrating 81% adherence to NCCN approved regimens across the system, regardless of the line of treatment. GI and breast cancers were responsible for the most plans with the highest adherence to Tier 1A plans, specifically 92% among the breast cancer group. Multiple Myeloma and Sarcoma were tied for the lowest adherence rate of 58%. This data can be further stratified by medical oncologist. Interestingly, Multiple Myeloma had the highest utilization of Tier 1B protocols perhaps reflecting the rapidly changing literature that is ahead of the guidelines. Conclusions: We demonstrated adherence to NCCN protocols 81% of the time over a 6 month period and over multiple cancer types. Protocol tagging and reporting utilizing the EMR alone could be used as a powerful model for value based care. We identified disease areas that will require further education regarding evidence based treatment and can consider interventions including real time feedback to clinicians and/or best practice advisories or quality based incentives. Research Sponsor: None.