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Conference Abstracts
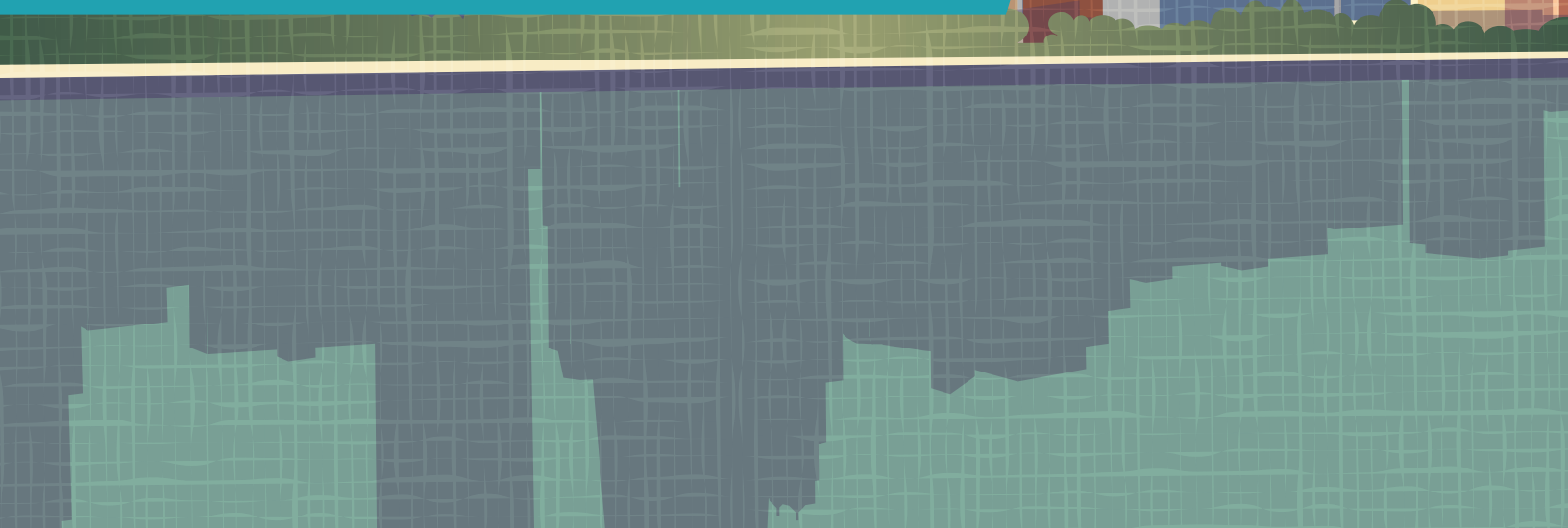
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Poster Abstracts

Impact of a Cervical Cancer Screening Education Intervention on Black Women's Knowledge and Health Beliefs

Adegboyega A, JungHee K., Dignan MB

Background: Cervical cancer is preventable through screening and early detection. Human Papillomavirus (HPV) self-sampling is an innovative technology to circumvent barriers to screening among underserved women. This pilot tested the efficacy and acceptability of a cervical cancer education intervention among Black women to improve knowledge and health beliefs related to HPV self-sampling.

Methods: Fifty-eight eligible Black women aged 30-65 years recruited from the community received HPV self-sampling kits with instructions along with a one-time cervical cancer education delivered remotely by a lay health advisor over Zoom. The education session addressed cervical cancer risk factors, importance of screening, potential barriers to screening, HPV self-sampling collection, and follow up for abnormal HPV test. Participants completed surveys at pre and post intervention. Sociodemographic characteristics, HPV knowledge items, cervical cancer risk awareness, health beliefs and intervention acceptability and satisfaction were collected. Paired t-tests were used to evaluate potential differences in pre and post.

Results: Participants mean age was 36.5 ffl 6.5 years. HPV knowledge, HPV test knowledge, cervical cancer knowledge, and mean cervical cancer risk awareness scores were significantly increased at post intervention ($p <.001$, $p = .002$, $p <.001$, $p <.001$, respectively). The mean values of perceived susceptibility and self-efficacy were significantly increased at post intervention ($p = .006$ and .034, respectively). There were no significant differences for other perceived health beliefs (severity, benefits, or barriers) pre and post intervention. Participants were satisfied with the intervention (range 0-5), as evidenced by mean value of credibility (4.06), acceptability (3.87), relevance (3.95), HPV instruction usefulness (3.90) and program usefulness (4.13). In addition, 98% of participants indicated that the educational session met their expectations. (i.e., as expected or more than expected).

Conclusion: A one-time cervical cancer educational intervention promotes an increase in women's knowledge related to HPV, cervical cancer, perceived susceptibility, and self-efficacy. Further research is needed to determine if these changes are sustainable long-term.

Assessing Pharmacist Willingness to Implement a Pharmacy-Based CRC Screening Intervention

Brenner A, Glascock M, Rohweder C, Marciniak M, Odebunmi F, Wangen M, Waters A, Wheeler S, Shah PD

Purpose: Colorectal cancer (CRC) screening is a vital preventive service for adults 45-75, but healthcare access disparities impact screening rates. Community pharmacies offer promise for distributing fecal immunochemical tests (FIT) for CRC screening (PharmFIT™), but pharmacists' willingness in this setting is unknown. We assessed pharmacists' willingness to provide the PharmFIT™ program.

Methods: We conducted a national online survey of 578 licensed community pharmacists (Sept 2022-Jan 2023) via QualtricsXM. Respondents averaged 47 years, 49% were female, 75% non-Hispanic White, 4% non-Hispanic Black, 13% Asian, and 5% Hispanic. Primary pharmacy work locations were: 31% independent, 28% national chain, and 14% supermarket. PharmFIT™ involved five steps: 1) Assessing FIT eligibility; 2) Instructing on using FIT; 3) Sending reminders for FIT completion; 4) Discussing FIT results; and 5) Referring positive FITs for colonoscopy. The survey assessed pharmacists' willingness to carry out each step and overall willingness to provide PharmFIT™, using six items with five-point response scales ("strongly disagree" to "strongly agree"). Pharmacists who were ambivalent or disagreed with providing PharmFIT™ indicated stipulations to increase willingness.

Results: Overall willingness to provide CRC screening using PharmFIT™ was high (81%) but varied across steps. Most were willing to discuss FIT eligibility (78%) and deliver instructions on completing FIT (84%); 68% were willing to provide reminders to complete FIT and 68% were willing to discuss FIT results. Notably, only 50% of pharmacists were willing to refer patients with a positive FIT to colonoscopy. The main stipulations for increased willingness were: 1) Ensuring FIT results are sent to the patient's primary care provider; 2) Providing training for FIT distribution; and 3) Streamlining screening services in the pharmacy's workflow. With these stipulations, overall willingness rose to 95%.

Conclusions: Pharmacists' overall willingness to offer CRC screening to patients through PharmFIT™ was high. Given the broad presence of pharmacies compared to primary care facilities, PharmFIT™ has the potential to increase access to this vital service. Pilot studies are needed to assess the effectiveness of PharmFIT™.

"It Needs to Feel Approachable": Using Photovoice to Inform Lung Cancer Screening Imagery

Hirsch EA, Hoover K, Studts JL

Purpose: Imagery is a vital part of communication, helping to capture attention and communicate medical information. Imagery selection for lung cancer screening (LCS) poses a challenge as eligible individuals face engagement issues associated with smoking related stigma and nihilism. This research used participatory research methodology to identify person-centered themes surrounding preferences for LCS imagery.

Methods: This qualitative study used a modified photovoice approach to define themes about LCS imagery chosen by participants. After informed consent, individuals eligible for annual LCS that had a CT scan within 12 months were asked to select 3 images and participate in a semi-structured interview about photo selection, likes, and dislikes. Participants were also shown three images from current LCS communications featuring matches, smoke, and cigarettes and asked their thoughts, likes, and dislikes. Data was analyzed using an inductive thematic approach.

Results: Most participants (N=13) were female (62%), Non-Hispanic White (85%), formerly smoked (61%), and ranged in age from 51 - 73 years. Each participant selected three pictures for a total of 39 images representing LCS. Most images included a medical or health setting/object (69%), with over half containing representations of lungs (54%). Only 4 pictures (10%) contained smoking imagery. Five overarching themes were identified about content, influence, and engagement involving recommended images that represent LCS:

1) Images should focus on positive aspects of early detection and being informed of good news;

2) People represented in LCS images should be relatable by sex, age, life, and health status;

3) Images of lungs in LCS communication can dually evoke fear of a cancer diagnosis or support the goal of healthy lungs;

4) Images should bring awareness and education about LCS and expectations about the screening process; and

5) Images should not shame or judge as LCS-eligible individuals are aware of the consequences of smoking.

Conclusions: Findings suggest that LCS imagery should not contain negative or stigmatizing elements, but instead be relatable and educational. This information can inform future messaging interventions and strategies supporting LCS awareness, participation, and adherence.

What do Latina Dense Breasts Patients Need to Know in Order to Make an Informed Decision about Supplemental Screening for Breast Cancer? A Qualitative Study

Vang S, Oliveros S, Pratt M, Margolies LR, Jandorf L, Kwon SC

Introduction: Federal legislation effective September 2024 will mandate notification of dense breast status to all women undergoing mammography who have dense breasts. Women with dense breasts have a 4- to 6-fold elevated risk of developing breast cancer. While screening mammography is the most effective method for detecting breast cancer early, it misses 42-50% of breast cancers in women with dense breasts. Supplemental screenings have been shown to be effective for detecting breast cancers missed by mammography. However, the use of supplemental screening in women with dense breasts is controversial due to the common existence of dense breasts, inconclusive evidence regarding the potential benefits and harms of supplemental screening, and associated public health costs. Thus, it is recommended that the decision to use supplemental screening in women with dense breasts be done through shared decision making between patients and their health care providers. Our previous work has revealed that Latina dense breast patients are 4 times less likely to be ordered a supplemental screening than non-Latina white dense breast patients, even after controlling for sociodemographic and clinical factors - indicating that shared decision making is not occurring equitably and that grave inequities exist in breast cancer screening and early detection in this population.

Objective: Explore decisional support needs of Latina dense breast patients for supplemental screening.

Methods: Qualitative interviews were conducted with 25 Latina dense breast patients from a large, urban health care system. Themes were generated using a Grounded Theory approach.

Results: Latina dense breast patients identified multiple decision support needs, including a need to: 1) define what "dense breasts" means, 2) understand the relationship between dense breasts and breast cancer risk; 3) clarify misinformation about breast density; 4) understand supplemental screening and its options; and 5) be provided with examples on how to broach the topic with their health care provider.

Discussion: Efforts to address the decisional support needs of Latina dense breast patients are critical and urgent in light of the severe inequities this population faces and new federal dense breast notification laws.

The Value of Perspective: What Different Team Members Bring to the Table for Implementing Tobacco Treatment Programs in Oncology Settings

Bird JE, Chladek J, Pauk D, Minion M, Adsit RT, Zehner M, Conner K, Fiore M, McCarthy D

Purpose: Tobacco treatment is not consistently offered to patients with cancer who smoke, despite evidence that this treatment improves cancer-related outcomes. Personnel from NCI-Designated cancer centers in the Cancer Center Cessation Initiative (C3I) have extensive knowledge about bringing these services to patients with cancer. Here, we outline the knowledge that different personnel from C3I cancer centers bring to facilitate implementation of tobacco treatment programs (TTP) in oncology settings.

Methods: We conducted a qualitative study of semi-structured interviews among cancer center directors, TTP leaders, IT personnel, and tobacco treatment specialists (TTS) from 28 C3I cancer centers regarding TTP implementation. Interviews occurred 1-2 years after centers received C3I funding and began implementation of their TTP. We applied directed content analysis to transcripts, using coding constructs representing the Consolidated Framework for Implementation Research (CFIR).

Results: TTP personnel from different roles contributed unique knowledge that facilitated implementation. Cancer center directors provided pertinent knowledge regarding CFIR inner and outer settings, especially funding availability and policies impacting tobacco services. TTP leaders shared details across all CFIR domains, especially regarding buy-in and the functioning of TTP workflows. IT personnel contributed unique and crucial knowledge about policies and capabilities of the EHR for facilitating TTP workflows and data collection. TTS shared concerns about how the TTP met the CFIR subdomain of patient needs and resources.

Conclusions: Our findings highlight the importance of involving personnel in multiple roles in TTP implementation in oncology settings. Involving TTP personnel from all areas and levels of leadership early in TTP planning may facilitate implementation. Analyzing the perceptions and experiences of different team members can advance TTP implementation in cancer centers.

The Association between Local Tobacco Retail Licensing Ordinances and Youth Cigarette and E-cigarette Use by Household Income

Usidame B, Yang S

Significance: This study investigates the association between strength of TRL laws and youth cigarette and e-cigarette use by household income, using CA as a case study.

Methods: Data sources were the American Lung Association (ALA) and CA Health Interview Survey (CHIS) from 2016-2021. For 540 localities, we coded ALA data to characterize TRL strength (strong, moderate, or weak). The CHIS data include exclusive ever use (any lifetime use) of cigarettes, e-cigarettes, and dual use for youth (ages 12-17, n=3,744). Multilevel multinomial logistic regression models tested the association between the TRL strength and ever use among adolescents, nested by localities. We examined the potential for effect modification of the relationship by individual-level poverty: 0-299% vs. 300%+ Federal Poverty Levels (FPL). All models controlled for the strength of local smoke-free laws.

Results: Across all years, 1.6%, 10.4%, and 3.2% of participants had ever used cigarettes, e-cigarettes, or dual use, respectively. In the unadjusted models, youth in localities with moderate or strong TRL exhibited lower odds of ever cigarette use (OR= 0.32, 95% CI: 0.15-0.68; OR= 0.43, 95% CI: 0.27-0.68), respectively, compared to adolescents in cities with weak TRL, but the association was not statistically significant with controls for other variables. For ever cigarette use, a statistically significant interaction was observed between moderate as well as strong TRL and poverty level. Youth with lower family income living in localities with moderate or strong TRL reported lower cigarette use relative to those with higher family incomes. For e-cigarettes, moderate TRL was associated with ever use (OR= 2.61, 95% CI: 1.10-6.22), and youth with lower family income in cities with moderate or strong TRL grades reported higher e-cigarette use relative to those with higher family incomes.

Conclusion: Strong city-level TRL laws are associated with lower cigarette use overall and particularly among youth with lower household income relative to higher income. Yet, these laws were associated with higher e-cigarette use overall and among lower-income individuals. Stronger TRL laws may steer youth away from cigarettes, but towards e-cigarettes rather than abstinence.

Indoor Air Pollution and Lifestyle Factors Associated with Lung Cancer Risk in a Chinese Population

Fang F, Zhou JY, Kim CH, Jin ZY, Liu X, Li L, Mu L, Wu M, Zhao JK, Zhang ZF

Indoor air pollution (IAP) is associated with elevated lung cancer risks, due to carcinogens produced by different sources of IAP. However, some studies were conducted in subgroup with small sample size and assessed IAP from single or limited sources of exposure, lacking comprehensively integrated measure of IAP. It is of importance to examine such associations with an integrated measure of IAP considering different sources of IAP exposures. The potential interplays between gender, alcohol drinking and integrated IAP on lung cancer remained unclear. We conducted a population-based case-control study in Jiangsu Province of China from 2003 to 2010, with 2,871 cases and 8,019 controls. Exposures to IAP and life-style factors were collected by in-person interview using a standardized questionnaire. An integrated weighted risk score (WRS) of IAP, accounting for effect sizes of each source of IAP, was computed. An unconditional logistic regression was employed to estimate adjusted odds ratios (aOR) and their 95% confidence intervals (CI) adjusting for potential confounders. Potential interactions between sex or alcohol drinking and IAP were evaluated. Environmental tobacco smoking (ETS, aOR = 1.59, 95% CI: 1.44, 1.76), poor ventilation (aOR = 1.20, 95% CI: 1.09, 1.33), and coal used for cooking (aOR = 1.36, 95% CI: 1.21, 1.52) were associated with lung cancer. Dose-response relationships were observed between lung cancer and integrated measures of IAP, including the number of pollutant sources and WRS. The individuals with median or above in WRS of IAP were associated with increase lung cancer risks (aOR = 1.53, 95% CI: 1.41, 1.65) comparing to those with WRS below median. The associations were more profound among never smokers (aOR = 1.72, 95% CI: 1.48, 2.00), comparing to ever smokers (aOR = 1.32, 95% CI: 1.16, 1.51). Female tended to be more vulnerable to IAP and sex interacted with IAP beyond multiplicativity, while the interactions between alcohol drinking and lung cancer were less than additivity. IAP is associated with lung cancer and the associations were more profound among never smokers. The interactions between IAP and sex or alcohol drinking were observed, underscoring the importance of controlling IAP, especially ETS, among high-risk individuals.

Association of Environmental Tobacco Smoking with Liver Cancer, and Interaction with HBV Infection in a Chinese Population-based Case-control Study

Liu X, Baecker A, Wu M, Zhou J-Y, Jin Z-Y, Jung SY, Mu L, He N, Qu W, Zhang X, Li L, Zhao J-K, Zhang Z-F

Purpose: Although tobacco smoking is one of the established risk factors for liver cancer, few epidemiological studies have published evidence on the relationship between environmental tobacco smoking (ETS) and liver cancer, especially among nonsmokers. This study aims to examine the association between ETS and liver cancer, and potential interaction with other major risk factors such as HBV infection.

Methods: A population-based case-control study was conducted in Jiangsu, China from 2003 to 2010. A total of 2,011 incident liver cancer cases and 7,933 population-based controls were included in this study. Epidemiological data, including exposure to ETS and other major known risk factors, including alcohol and tobacco consumption were collected by questionnaire. Serum markers for HBV infection were measured using enzyme-linked immunosorbent assay. Unconditional logistic regression models were used to examine the associations between ETS and risk of liver cancer. Interactions were evaluated between ETS and HBV infection, alcohol consumption, tobacco smoking and family history of liver cancer.

Results: Exposure to ETS was associated with liver cancer, shown as adjusted odds ratios (OR) of 1.84 (95% confidence interval [CI]: 1.56-2.18) in the whole study population and 2.11 (95% CI: 1.67-2.65) among never smokers. Super-additive and super-multiplicative interactions were observed between ETS and HBV infection. In the study population the relative excess risk due to interaction (RERI) was 12.56 (95% CI: 6.60-18.53) and the ratio of odds ratios (ROR) was 1.55 (95% CI: 1.07-2.23), while a RERI of 12.87 (95% CI: 4.93-20.81) and ROR of 1.78 (95% CI: 1.06-2.99) was shown among never smokers. Sub-multiplicative interactions were detected between ETS and alcohol (ROR: 0.57, 95% CI: 0.41-0.79), and ETS and smoking (ROR: 0.55, 95% CI: 0.40-0.75) among all participants, and between ETS and alcohol (ROR: 0.42, 95% CI: 0.26-0.66) among never smokers.

Conclusions: ETS is independently associated with liver cancer, and this association is further modified by HBV infection, resulting in an elevated risk, especially among non-smokers. Avoiding exposure to ETS is of importance for liver cancer prevention, particularly among HBV positive individuals.

Association between Pre-diagnosis Diet Quality and Ovarian Cancer Risk and Survival in the NIH-AARP Diet and Health Study

Cao A, Esserman DA, Cartmel B, Irwin ML, Ferrucci LM

Purpose: To evaluate the association between pre-diagnosis diet quality and ovarian cancer risk and survival.

Methods: We utilized data from women in the NIH-AARP Diet and Health Study who were enrolled from 1995-1996 and were 50-71 years old at baseline with follow-up through 12/31/2017. Participants completed a 124-item Food Frequency Questionnaire at baseline and diet quality was assessed via the Healthy Eating Index-2015 (HEI-2015), the alternate Mediterranean diet score (aMED), and the Dietary Approaches to Stop Hypertension score (DASH). Our primary outcomes were first primary epithelial ovarian cancer diagnosis from cancer registry data, and among those diagnosed with ovarian cancer all-cause mortality from the National Death Index Plus. We used a semi-Markov multi-state model with Cox proportional hazards regression to account for semi-competing events.

Results: Among 150,643 participants with a median follow-up time of 20.5 years, 1,107 individuals were diagnosed with a first primary epithelial ovarian cancer. There was no evidence of an association between diet quality scores and ovarian cancer risk. Among those diagnosed with ovarian cancer, 893 deaths occurred with a median survival time of 2.5 years. Better pre-diagnosis diet quality, according to the HEI-2015 (Quintile 5 vs Quintile 1: Hazard Ratio (HR)=0.75, 95% confidence interval (CI): 0.60-0.93; P-trend=0.01) and the aMED (Quintile 5 vs Quintile 1: HR=0.68, 95% CI: 0.53-0.87; P-trend<0.01) scores, was associated with lower all-cause mortality with evidence of a statistically significant linear trend. There was no evidence of an association between DASH and all-cause mortality.

Conclusions: In this large prospective cohort, we found better pre-diagnosis diet quality was associated with lower all-cause mortality after ovarian cancer diagnosis, but was not associated with ovarian cancer risk. By using semi-Markov models, we addressed semi-competing events, thereby obtaining the most valid effect estimates. Since our results indicate pre-diagnosis diet quality is relevant to survival after ovarian cancer diagnosis, complementary research on post-diagnosis diet quality is needed to understand if addressing diet quality after diagnosis in ovarian cancer survivors could improve outcomes.

A 6-month, Multi-site Electronic Health Record-Integrated Physical Activity Intervention (MyActivity) Significantly Increases Physical Activity in Breast & Endometrial Cancer Survivors

Phillips SM, Solk PS, Freeman H, Starikovsky J, Carden LB, Agnew M, Schmidt C, Readmin JM, Wang S, Hasanaj K, Tevaarwerk AJ, Spring B, Barber E, Sesto ME, Gradishar W, Hodgson V, Muller L , Naxi S, Spencer R, Gangnon R, Nahum-Shani I, Cadmus-Bertram L, Pickett K

Purpose: Despite the benefits of moderate to vigorous physical activity (MVPA) for breast and endometrial cancer survivors, most are insufficiently active. Integration of MVPA support into cancer care via the electronic health record (EHR) using a stepped care approach, in which the least resource-intensive intervention is delivered first, and additional components are added based on individual response, is one strategy to enhance uptake of MVPA.

Methods: Inactive post-treatment survivors (*n*=323; Mage=57.4(*SD*=11.0); 73.7% breast;25.4% endometrial) received a minimal intervention including a study website and Fitbit linked with the EHR with weekly feedback delivered via the patient portal as part of a singly randomized trial. MVPA adherence was evaluated at 4, 8, 12, 16 and 20 weeks; non-responders (those meeting 80% of the MVPA goal over previous 4 weeks) at each timepoint were randomized once for the remainder of the 24-week intervention to one of two "step-up" conditions: (1) online gym or (2) coaching calls, while responders continued with the minimal Fitbit+EHR intervention. Mixed effects models examine the effects for each intervention condition on accelerometer-assessed MVPA from baseline (T1) to 6-months (T2).

Results: Overall, MVPA increased by 35.2 (95%CI=21.4-49.0;p<0.001) min/wk (MT1=111.5; MT2=146.7) and 36% of the sample was randomized. Responders to the Fitbit+EHR intervention increased their MVPA min/wk (+45.4 min/wk) significantly more than non-responders randomized to coaching (Mdiff=82.6; 95%CI 51.6-113.6;p<0.001) or online gym (Mdiff=87.7; 95%CI 57.6-117.9;p<0.001). There were no statistically significant differences in the observed increase in MVPA among non-responders randomized to the online gym (+8.2 min/wk) or coaching (+19.9 min/wk).

Conclusions: A MVPA intervention integrated into the EHR is associated with increased MVPA at 6-months. Non-responders increased their MVPA significantly less than responders. Neither coaching nor online gym was a more effective augmentation strategy for increasing MVPA in these non-responders. Future work should evaluate the Fitbit+EHR intervention in a randomized trial and determine how to effectively tailor interventions for non-responders' to increase MVPA levels.

A Qualitative Study Exploring Barriers to and Facilitators of Modifying Nutrition and Physical Activity Behaviors during Chemotherapy for Breast Cancer in the Lifestyle, Exercise and Nutrition EaRly after diagnosis (LEANer) Trial

Puklin LS, Irwin ML, Sanft T, Ferrucci LM, Harrigan M, McGowan C, Cartmel B, Zupa M, Deyling M, Ligibel JA, Spiegelman D, Sharifi M

Purpose: Adopting healthy eating and exercise behaviors during chemotherapy may mitigate treatment-related toxicities and improve health outcomes, yet navigating physiological and psychosocial issues during active treatment can make this challenging. We qualitatively explored factors influencing the adoption of these behaviors among breast cancer patients who participated in a yearlong lifestyle intervention initiated at the start of chemotherapy.

Methods: Women with stage I-III breast cancer who completed the intervention arm of the Lifestyle, Exercise and Nutrition EaRly after diagnosis (LEANer) trial participated in semi-structured interviews. Stratified purposeful sampling identified high, medium, and low adopters of the intervention based on meeting both, one, or neither behavioral goals at one-year: 1) ≥150 min/week moderate-to-vigorous intensity exercise via a self-report physical activity questionnaire; and 2) diet quality improvement measured via the Healthy Eating Index-2015. Interviews were audio-recorded and transcribed verbatim. We used thematic content analysis to identify emerging themes.

Results: The 29 women interviewed were 52 ffl 11 years of age, had a mean body mass index of 29.6 ffl 7.7 kg/m2, had completed the yearlong intervention on average 1.8 years prior, and the majority had stage I disease (48.3%) and received >4 chemotherapy cycles (82.8%). Interviews averaged 38 minutes. Two themes emerged describing physiological and psychosocial factors that hindered adoption of behavioral goals: (1) adverse effects of chemotherapy and/or surgery; and (2) family caregiving demands and other competing priorities. Participants described three themes regarding benefits of participating in LEANer: (1) providing a conduit of trustworthy, timely, and personalized health information; (2) promoting shifts in mindsets and improving understanding of the benefits of nutrition and exercise; and (3) fostering a sense of control and an alternative focus.

Conclusions: This qualitative study offers insights into strategies that promote and challenges that hinder the uptake of healthy lifestyle behaviors during chemotherapy for breast cancer. These factors can guide future programs and support the implementation of lifestyle interventions during this critical time.

Looking Back, Thinking Forward: Precision Prevention

Randomized Trial Promoting Cancer Genetic Risk Assessment When Genetic Counseling Cost Was Removed: 1-year Follow-up

An J, McDougall J, Lin Y, Lu S, Walters ST, Heidt E, Stroup A, Paddock L, Grumet S, Toppmeyer D, Kinney AY

Purpose: Cancer Genetic Risk Assessment (CGRA, i.e., genetic counseling and/or testing) is recommended for women with ovarian and high-risk breast cancer. However, CGRA remains underutilized, and cost has been documented as a major barrier. A Tailored Counseling and Navigation (TCN) intervention significantly improved CGRA uptake at the 6-month follow-up, compared with Targeted Print (TP) (Odds ratio (OR)=7.4, 95% CI: 3.0-18.3) and Usual Care (UC) (OR=8.9, 95% CI: 3.4-23.5). We aimed to examine the effect of removing genetic counseling costs on CGRA uptake by 12 months.

Methods: In this randomized controlled trial, we recruited racially and geographically diverse women with breast and ovarian cancer from cancer registries in Colorado, New Jersey, and New Mexico. Participants assigned to TCN received phone-based psychoeducation and navigation. After 6 months, the trial offered to pay for genetic counseling for participants in all arms. Logistic regression and Kaplan-Meier curves were used to analyze CGRA uptake in 3 arms.

Results: Participants' (n=638) average age was 61, 25.4% identified as Hispanic, and 17.6% lived in rural areas. At 12 months, the total number of participants who sought CGRA (n=89) doubled compared to the 6-month follow-up (n=43). More women in TCN obtained CGRA (n=45, 26.6%) than those in TP (n=21, 11.0%, OR=2.8, 95% CI: 1.6-4.9) and UC (n=23, 12.2%, OR=2.5, 95% CI: 1.4-4.3). There were no significant differences in CGRA uptake between TP and UC. The Kaplan-Meier curve shows that the divergence of cumulative incidence slopes (TCN versus UC, TCN versus TP) appears primarily within the initial 6 months. The difference between the slopes is sustained between 6 to 12 months.

Conclusion: TCN significantly increased CGRA uptake at the 12-month follow-up. Providing free genetic counseling attenuated the effects of TCN, highlighting the critical enabling role played by cost coverage. Future policies and interventions should address multi-level cost-related barriers to expand patients' access to CGRA, including recognition of genetic counselors as billable providers by Medicare, promoting coverage for tele-genetic counseling, and educating patients on the importance of genetic counseling.

A Community Engagement Studio Approach to Adapting a Dyadic Exercise Program to be Culturally Relevant for Hispanic Men with Prostate Cancer

Skiba MB, Badger TA, Garcia DO, Chilton FH, Winters-Stone KM

Purpose: The purpose of this study was to elicit feedback and recommendations from stakeholders on the Exercising Together© intervention to inform the cultural adaptation of the Exercising Together© program for Hispanic men with prostate cancer.

Methods: We conducted a virtual Community Engagement Studio (V-CES) with community expert stakeholders representative of the Hispanic and cancer care community in Southern Arizona. The V-CES process included orientation, presentation of research, guided discussion, and evaluation. Stakeholders were provided with background information on Exercising Together©, a six-month evidenced-based dyadic resistance training program that promotes teamwork between prostate cancer survivors and their spouses to improve physical, mental, and relational health outcomes. The V-CES was audio recorded, transcribed, and rapidly analyzed to identify actionable feedback and contextual adaptions.

Results: Nine stakeholders (6/9 male; 5/9 Hispanic) completed all V-CES activities. Through stakeholder engagement and feedback from the V-CES, adaptations to the original Exercising Together© intervention include: 1) inclusion of the cancer survivor identified caregiver that might not be a spouse; 2) availability in English and Spanish; 3) shortening the intervention length to three-months; 4) remote delivery of the intervention; and 5) incorporation of low burden procedures.

Conclusions: Findings from our V-CES informed the adaptations for a culturally relevant dyadic progressive functional resistance training program for Hispanic men with prostate cancer and their caregivers. Cancer disparities that exist for Hispanic men with prostate cancer and their caregivers may be lessened through exercise. The adapted Exercising Together© program will be tested for feasibility and acceptability in a pilot study of 20 Hispanic prostate cancer survivor-caregiver dyads.

Bridging Disparities in Hereditary Cancer Risk Assessment: Implementing Universal Screening at an FQHC

Pan V, Awati N, Izguerra A, Jara K, Rios G, Aich J, Aumann E, Ashurova M, Brouette M, Diaz-Leon L, Medina C, Wattanayuth N, Ganschow P

Purpose: The purpose of the Mile Square Family History Cancer Screening (MiFamCan) QI project is to ensure that all eligible patients, regardless of their background, have equal access to hereditary cancer risk assessment (HCRA) and genetic testing through implementation of a universal family history screen into primary care at a Federally Qualified Health Center (FQHC).

Methods: We used in-clinic navigators (culturally and linguistically matched to the patient demographics of the clinics) to administer an electronic family cancer history risk assessment tool to all adult patients presenting for routine primary care visits. The navigators assessed patients for health literacy to determine who needed additional assistance in completing the risk assessment. Primary care providers (PCPs) were notified of the results and placed a referral to genetic counseling for interested patients. We compared the number of patients identified and referred for genetic counseling services before and after implementation. We also conducted a rapid qualitative analysis of patient and provider interviews to assess attitudes about acceptability, feasibility, sustainability, barriers, and facilitators to implementation.

Results: In the 9 months following implementation, we performed HCRA with over 1200 adult patients in 2 primary care FQHC clinics. The majority of patients self-identified their race as non-white, were unaffected by cancer, and had public insurance. Approximately 10% of patients had low health literacy. Compared with baseline data, the number of referrals to genetic counseling doubled after implementation. In both the baseline and implementation groups, the referral loop to genetic testing was closed for less than 20% of interested high risk patients. Leakage of up to 20-40% of high risk patients occurred at each step in the process from risk identification to attending a genetic counseling appointment.

Conclusions: A universal HCRA identifies many more patients in need of genetic testing, but follow-through to testing needs improvement. Alternate models for delivering cancer genetic services, such as mainstream (or point of care) genetic testing in primary care may overcome some barriers and improve the delivery of precision cancer prevention services to patients.

Plasma C-peptide, Mammographic Density Parameters, Mammographic Texture Feature, and Risk of Breast Cancer

Azam S, Peng C, Rosner B, Goncalves M, Phillips E, Eliassen H, Heine J, Hankinson S, Tamimi R

Purpose: High levels of insulin may increase the risk of breast cancer (BC). We studied the association between C-peptide levels as a marker of high-level endogenous insulin, mammographic density (MD) parameters, and BC risk. We also examined the association between C-peptide and BC risk varies by MD status.

Methods: We conducted a nested case-control study (n=1260 cases; n=2221 controls) in the Nurses' Health Study (NHS) and NHS2. We assessed MD parameters and V (a measure of grayscale variation). MD parameters were square root-transformed. Linear and logistic regression models were used to analyze the associations between C-peptide and MD parameters among controls, and C-peptide with breast cancer, respectively. Multivariate models were adjusted for matching factors and established risk factors for BC.

Results: In multivariate models including BMI, C-peptide was significantly inversely associated with percent MD and positively associated with non-dense area. However, no associations were detected with dense area and V measure. C-peptide was associated with an increased risk of invasive BC (top vs. bottom quartile, odds ratio = 1.40, 95% confidence interval :1.08 to 1.81). The association was stronger for ER-negative disease (adjusted OR=1.82, 95% CI: 1.13 to 2.94), though heterogeneity by ER status was not significant. There was no significant heterogeneity by menopausal status. There was no evidence of multiplicative interaction between C-peptide, and MD parameters and risk of BC (All p-interactions>0.11).

Conclusions: Our results suggest a positive association between C-peptide and BC risk. Furthermore, MD parameters do not seem to modify the association between C-peptide and BC risk.

Association of Combined Polygenic Risk Score and Environmental Score with Risk of Recurrent Adenoma in the PLCO and PPT Cohorts

Dill CD, Huang W, Wang D, Shi J, Loftfield E, Freedman N, Berndt S, Schoen RE, Katki H, Landy R

Introduction: Colorectal cancer (CRC) screening reduces CRC mortality partly by identifying and removing precancerous adenomas, preventing progression to cancer. The U.S. Multi-Society Task Force provides CRC screening recommendations. However, surveillance guidelines after an initial screen-detected adenoma are less established. We investigated whether environmental and genetic risk factors could improve model predictions for the risk of adenoma recurrence.

Methods: Using individuals from the PLCO (N=1787) and PPT (N=2,079) trials who had a clinically confirmed and removed adenoma at baseline and follow-up data on adenoma recurrence, we modeled the risk of recurrent adenoma using logistic regression models, considering 19 lifestyle and environmental risk factors (e-score) and a polygenic risk score (PRS) for CRC. Weights for the PRS were estimated using summary statistics for a large, independent genome-wide association study (GWAS) meta-analysis. Models were adjusted for age, sex, prior endoscopy, family history of CRC, and advanced adenoma status.

Results: A meta-analysis was performed on participants from the PLCO (49% recurrent adenoma) and PPT cohort (39% recurrent adenoma) who had a colonoscopy following a baseline adenoma, at year 3 or 5 (PLCO) and 1 or 5 (PPT). Results from the meta-analysis were similar to results from the analysis performed for each cohort separately, with PRS and e-score both significant predictors of recurrent adenoma, of nearly equal magnitude (PRS quartile: OR=1.12 (95% CI:1.05-1.94, p<0.001, e-score quantile: OR=1.13 (95% CI:1.06-1.20, p<0.001).

Conclusions: Use of a risk model including PRS and e-score has the potential to improve prediction of who will have a recurrent adenoma. Additional prospective studies and randomized trials are required before an individual's genetic risk score should be incorporated into algorithms for decision making.

Impact/Significance: Identifying individuals with a high risk to develop a recurrent adenoma has the potential to inform CRC surveillance decisions and protocols.

Examining Factors that Contribute to Racial and Ethnic Disparities in Liver Cancer within an EHR-based Epidemiologic Cohort Linked to Cancer Registries

DeRouen MC, Canchola AJ, Cortella A, Inamdar P, Chu J, Nie S, Vu M, Somsouk M, Tana M, Thompson CA, Gomez SL, El-Serag HB, Kim M, Segal M, Ho C, Daida YG, Liang SY, and Shariff-Marco S

Purpose: Assemble a pooled, electronic health record (EHR)-based cohort linked to cancer registry data to examine (1) disparities in hepatocellular carcinoma (HCC) risk across detailed racial/ethnic groups and (2) the relative contribution of known and putative HCC risk factors to disparities.

Methods: For adults with 1+ encounter in 2000-2017 at three healthcare systems (Kaiser Permanente Hawai'i, Sutter Health, and San Francisco Health Network), EHR data to define sociodemographic and clinical factors were linked to population-based state cancer registries for data on incident HCC. Variables for hepatitis and HIV infections, alcohol disorders, smoking, metabolic syndrome, and metabolic-associated steatotic liver disease (MASLD) were defined, over time and by changes in severity, where possible. We used Cox proportional hazards regression to examine disparities across 16 detailed racial/ethnic groups. Among each racial/ethnic group, we examined HCC risk and calculated population attributable fractions for each risk factor.

Results: The cohort includes 4,249,671 adults; 2,916 had incident HCC. Compared to non-Hispanic (NH) White males, Vietnamese American males had greater risk of HCC (HR: 7.42; 95% CI: 4.25, 12.96) as did American Indian/Alaska Native, Black, Chinese American, Hispanic, Native Hawaiian, and Pacific Islander males, and those with multiple races/ethnicities. Among females, every group except for American Indian/Alaska Native, Asian Indian American, and Pacific Islander females had greater risk of HCC than the NH White group. Prevalence of HCC risk factors varied across detailed racial/ethnic groups; for example, Asian Indian Americans had relatively low prevalence of hepatitis infections, alcohol disorder, and smoking, but high prevalence of metabolic syndrome (32%) and MASLD (23%). Variation in factor-specific risk of HCC was observed; for example, among males, only NH White and Asian American males had greater risk of HCC with MASLD (HR 2.68 and 2.65, respectively) and smoking (HR 1.58 and 1.39, respectively).

Conclusions: Analysis of a large EHR-based cohort linked with cancer registry data yields information on disparities and etiology of HCC across detailed racial/ethnic groups that may improve precision intervention and screening.

Correlates of Test Order and Completion for Early Onset Colorectal Cancer (CRC)

Nair RG, Hughes AE, Su LC, Kazmi S, Skinner CS

Purpose: Early onset CRC (diagnosed <50 years) incidence is increasing at an alarming rate. Evidence is lacking about prevalence of follow up of red-flag symptoms - including CRC test orders and test completion - especially in safety-net settings.

Methods: We assessed CRC test order and completion in a retrospective cohort study using electronic health records of patients ages 40-49 with a primary care visit in a safety-net health system between Jan 2010-Dec 2018 and a reported red-flag symptom (abdominal pain, rectal pain, change in bowel habits, rectal bleeding or weight loss). CRC test order was defined as record of a fecal immunochemical test (FIT), sigmoidoscopy, or colonoscopy order within 1 year of symptom report; test completion was defined as FIT, colonoscopy, or sigmoidoscopy within 1 year of test order. We calculated prevalence of test order and completion, and used multilevel, multivariate logistic regression to characterize associations with clinical risk factors, social characteristics, and healthcare contexts.

Results: Of 18,139 patients reporting a red-flag symptom, 8,283 (45.7%) received a test order and, of these, 6,181 (74.6%) completed a test. Multi-level analysis found that patients ages 45-49, women, those on Medicare, and patients seen by a physician provider were more likely to have both test order and completion compared to those ages 40-44 years, male, without insurance, and seen by nurse practitioners or physician assistants, respectively. Non-Hispanic Blacks (vs non-Hispanic Whites), those with Charlson scores 1-4 (vs 0), and patients with BMI>30 kg/m2 (vs <25) were more likely to have a test order after red-flag symptom report, but less likely to complete testing.

Conclusions: Symptomatic patients <50 years received fewer test orders, but a majority of all patients who received orders completed tests. Findings highlight a need for in-depth analyses to understand why patients <50 years old receive fewer test orders after reporting symptoms and why certain patients do not complete testing despite a provider order.

Medicaid Expansion and Differences in Late-Stage Colorectal Cancer Diagnosis by Race and Ethnicity in the US, 2009-2017

Santiago-Rodríguez EJ, Shariff-Marco S, Bailey ZD, Allen IE, Hiatt RA, White JS

Purpose: To evaluate the impact of state Medicaid expansions under the Affordable Care Act on late-stage colorectal cancer (CRC) diagnosis in the US, overall and among racial and ethnic sub-groups.

Methods: All CRC cases reported in the US between 2009 and 2017 were obtained from the restricted-use United States Cancer Statistics database. Late-stage CRC diagnosis was determined according to the presence of distant involvement (node or site) of the tumor at diagnosis. Difference-in-differences analysis was used to compare changes in the frequency of late-stage CRC diagnosis before and after the implementation of the policy in expansion and non-expansion states. The main analysis included all individuals aged 20-64 years, and were adjusted for age, sex, race, ethnicity, and census region. Analysis was also stratified by race and ethnicity. Sensitivity analyses were conducted excluding states that expanded Medicaid before 2014 ("early" expansion states: CA, CT, DC, MN, NJ, WA), and the robustness of our findings was evaluated using individuals 65 years and older (Medicare-eligible population) as a placebo test.

Results: A total of 534,131 individuals were included: White, n=365,678; Black, n=81,089; Latino, n=55,216; Asian American/Pacific Islander, n=23,198; American Indian/Alaska Native, n=4,577. Overall, Medicaid expansion was associated with a reduction of late-stage CRC (-0.98 percentage points [pp]; 95% CI= -1.55, -0.41). In stratified analyses, the Medicaid expansion benefitted White individuals (-1.08 pp; 95% CI= -1.79, -0.38), but no changes were observed post-Medicaid expansion for other racial and ethnic groups. Results were similar after excluding early expansion states, and placebo estimates confirmed that the Medicaid expansion had no effect on CRC stage at diagnosis among older adults.

Conclusions: Medicaid expansion was associated with a decrease in late-stage CRC diagnosis in the US, but only among White people. Efforts beyond expanding public health insurance are needed to improve early detection of CRC among racial and ethnic minoritized individuals.

Rurality and Age-Related Differences in Temporal Trends of Early-Onset Colorectal Cancer Incidence in the State of Georgia, 2000-2018

Tsai MH, Thompson CA, Coughlin SS

Purpose: An increase in early-onset colorectal cancer (EO-CRC, defined as CRC diagnosed < 50 years) incidence was observed among Georgians, but unanswered questions remain about the variation in EO-CRC incidence across different age groups. Because Georgia has a high proportion of rural counties, we examined the burden of EO-CRC incidence by rurality and age in Georgia.

Methods: Surveillance, Epidemiology, and End Results (SEER)*Stat Database: Incidence-SEER Research Plus Data, 18 Registries (2000-2018) were used to calculate age-standardized CRC incidence rates (ASIRs) in adults aged 20-49 years. Rurality was defined using the 2013 United States (US) Department of Agriculture rural-urban continuum codes with 1-3 being urban and 4-9 rural. We conducted Joinpoint regression analyses of trends in ASIRs, stratified by rurality and age categories. The average annual percent change (AAPC) and annual percent change (APC) with corresponding 95% confidence intervals were calculated for each trend segment.

Results: A total of 9,622 EO-CRC diagnosis were reported in Georgia during 2000-2018. The 19-year ASIRs of EO-CRC were 12.5 and 14.1 per 100,000 in urban and rural Georgia counties, respectively. We found the incidence rates for EO-CRC increased from 2000 to 2018 in urban areas (AAPC: 1.6%, p-value<0.001). In rural areas, a decreased trend was observed during 2000-2008 (APC: -1.7%; p-value=0.20); however, a significant increase in incidence was found from 2008 to 2018(APC: 2.6%; p-value=0.01). When examining age differences, adults aged 20-29, 30-39, and 40-49 years living in urban areas had a significant increase in incidence during 2000-2018 (AAPC: 3.8%, 2.1%,1.6%, respectively; all p-values<0.05). The AAPC for EO-CRC was the highest among rural adults aged 30-39 years (AAPC: 2.1%, p-value=0.03) and followed by 20-29 age group (AAPC: 2.0%, p-value=0.35).

Conclusions: Compared with urban areas, EO-CRC incidence was slightly higher in rural areas during the entire study period, with an increasing trend since 2008. Adults aged 30-39 years had the highest increases in incidence rates, particularly those living in rural areas. EO-CRC is affecting increasingly younger groups, particularly in rural areas. Our findings add to observations of similar trends across the US.

Radiation Treatment for Benign Conditions during Windows of Susceptibility and Breast Cancer Incidence

Goldberg M, Feng S, Sandler DP

Purpose: In a prospective U.S cohort, we examined associations of radiation treatment for a benign (non-cancer) condition with incident breast cancer, with a focus on timing of exposure to identify windows of enhanced breast radiosensitivity.

Methods: We studied 47,159 Sister Study participants ages 35-74 years with no prior history of cancer (except non-melanoma skin cancer) at enrollment (2003-2009). At baseline, participants reported if they had ever received radiation treatment for a benign condition and, if so, the age at first treatment. We categorized age at first radiation treatment by life stage as childhood (0-9 years), puberty (10-13), adolescence (14-19), young adulthood (20-39) and midlife (≥40). We also considered windows based on stage of breast maturation as pre-puberty (>3 years before self-reported age at menarche), puberty (3 years before menarche), between menarche and first birth (including nulliparous), and after first birth. We used Cox proportional hazards regression with age as the time scale, adjusted for birth cohort, race and ethnicity, and childhood family income level, to estimate hazard ratios (HR) and 95% confidence intervals (CI) for incident breast cancer associated with any exposure to radiation treatment and timing of radiation, relative to unexposed.

Results: Two percent of eligible participants (N=997) reported a history of radiation treatment for a benign condition. During follow-up (mean=12.5 years), 4,278 participants reported a breast cancer diagnosis, including 126 exposed. Overall, any radiation treatment was associated with incident breast cancer (HR 1.26, 95% CI 1.06-1.51). We observed greater increases associated with radiation at ages 10-13 years (HR 1.70, 95% CI 1.18-2.47) and ages ≥40 years (HR 1.65, 95% CI 0.85-3.21). This pattern was similar when windows were defined by stage of breast maturation (HR 1.51, 95% CI 1.02-2.24 for radiation during puberty and HR 1.60, 95% CI 0.99-2.58 for after first birth).

Conclusions: Exposure to radiation through treatment for a benign condition - particularly during puberty or in midlife - was associated with increased breast cancer incidence. These windows may reflect enhanced breast radiosensitivity at different stages of breast tissue maturation.

Ultrasound Screening Performance among Women with Dense Breasts by Breast Cancer Risk

Sprague BL, Ichikawa L, Eavey J, Lowry KP, Rauscher GH, O'Meara ES, Miglioretti DL, Lee JM, Herschorn SD, Perry H, Weaver DL, Kerlikowske K

Background: Whole breast ultrasound can improve cancer detection in women with dense breasts. It is unclear how ultrasound screening outcomes vary by breast cancer risk among these women.

Purpose: We sought to evaluate ultrasound screening outcomes according to a woman's estimated breast cancer risk in women with dense breasts.

Methods: We used observational data from 34,791 ultrasound screening exams among women with dense breasts conducted during 2014-2020 at 24 radiology facilities within three Breast Cancer Surveillance Consortium (BCSC) registries. Exams occurring on the same day as positive screening mammograms were excluded. Primary outcomes included cancer detection rate (CDR), false-positive biopsy recommendation rate, and positive predictive value of biopsies performed (PPV3) using 90 day follow-up for breast cancer diagnosis. Established BCSC risk prediction models estimated 5-year invasive breast cancer risk (classified as low/average [<1.67%], intermediate [1.67-2.49%], and high [≥2.5%]), and BCSC 6-year cumulative advanced breast cancer risk (low/average [<0. 3797%], intermediate [0. 3797-0.6582%], and high [>0.6582%]).

Results: The overall CDR for screening ultrasound was 2.0 (95% CI: 1.6, 2.4) per 1000 exams, with a false-positive biopsy recommendation rate of 29.6 per 1000 (95% CI: 22.6, 38.6) and PPV3 of 6.9% (95% CI: 5.3, 8.9). Among exams with one year of complete capture of cancer diagnoses from population-based cancer registries, screening ultrasound sensitivity was 85.0% (95% CI: 72.8, 92.3) and specificity was 73.2% (95% CI: 61.0, 82.7). Screening outcomes varied by invasive and advanced breast cancer risk. The cancer detection rate ranged from 1.4 to 3.7 per 1000 for low vs. high 5-year invasive breast cancer risk and from 1.3 to 5.5 per 1000 among women with low/average vs. high 6-year cumulative advanced breast cancer risk. PPV3 ranged from 4.9 to 10.5% for low vs. high 5-year invasive breast cancer risk and from 4.9 to 15.0% for low vs. high 6-year cumulative advanced breast cancer risk.

Conclusions: Screening strategies that target supplemental ultrasound based on elevated invasive or advanced cancer risk may be expected to yield a high rate of cancers detected while limiting false-positive biopsy recommendations.

Association of Initial Chemotherapy Receipt with Long-Term Risk of Cause-Specific Cardiovascular Disease Among U.S. Breast Cancer Survivors

Vo JB, Ramin C, Veiga LHS, Brandt C, Curtis RE, Bodelon C, Barac A, Roger V, Feigelson HS, Buist D, Bowles EJA, Gierach GL, Berrington de González A

Background: Breast cancer survivors are living longer yet are at increased risk for cardiovascular disease in part due to cardiotoxic treatment (anthracyclines, trastuzumab). However, there is insufficient evidence for long-term cardiovascular screening or age-specific clinical guidelines.

Methods: We conducted a retrospective cohort study of 10,211 women diagnosed with first primary unilateral breast cancer between 1993-2016, followed until 2017, aged 20+ years, and survived ≥1 year in Kaiser Permanente WA or CO. We evaluated the association between initial chemotherapy receipt (anthracyclines and/or trastuzumab, other chemotherapy, no chemotherapy [reference group]) and cause-specific cardiovascular disease (cardiomyopathy/ heart failure [CM/HF], ischemic heart disease [IHD], stroke) using multivariable Cox regression models, stratified by age at and years since breast cancer diagnosis. We calculated cumulative incidence accounting for competing events.

Results: Women treated with anthracyclines and/or trastuzumab had a higher risk of CM/HF risk compared with no chemotherapy (HR=1.84,95%CI=1.51-2.26), which persisted 5-9 years (HR=1.88,95%CI=1.35-2.64) and 10+ years (HR=2.21,95%CI=1.53-3.20) after breast cancer diagnosis. Risks were even greater for women aged <65 years (HR20-54 years=2.97,95%CI=1.72-5.12; HR55-64 years=2.21,95%CI=1.51-3.19). Risk of IHD was elevated after 5+ years for women treated with anthracyclines and/or trastuzumab (HR5-9 years=1.51,95%CI=1.06-2.14; HR10+ years=2.21,95%CI=1.86-2.93). Higher risk of stroke was observed for women treated with anthracyclines and/or trastuzumab (HR=1.33,95%CI=1.05-1.69) but did not vary by time since diagnosis. Women treated with anthracyclines and/or trastuzumab and aged <65 years had the highest 10-year CM/HF cumulative incidence (20-54 years=3.90%;55-64 years=9.78%).

Conclusions: We demonstrated increased risk of CM/ HF and IHD among breast cancer survivors treated with anthracyclines and/or trastuzumab, persisting 10+ years after diagnosis and heightened among women age <65 years, highlighting the potential need for long-term cardiovascular disease screening among high-risk patients.

Associations between DXA-derived Visceral and Subcutaneous Adipose Tissue and Obesity-Related Cancer Incidence in Postmenopausal Women

Ziller SG, Blew R, Walker E, Archibeque S, Roe D, Odegaard A, Caan B, Chen Z, Rohan TE, Lane DS, Felix A, Harris H, Luo J, Manson J, and Bea JW

Purpose. We examined the relationships between first incident obesity-related cancer (ObRC) and dual-energy X-ray absorptiometry (DXA) derived abdominal adipose tissue depots, specifically total (TAT), visceral (VAT) and subcutaneous (SAT), in postmenopausal women of the Women's Health Initiative DXA Cohort (n=11,405).

Methods. ObRC included first incident breast, colon, esophageal, gallbladder, gastric, kidney, liver, multiple myeloma, ovarian, pancreatic, rectal, thyroid, and uterine cancers. Outcomes were adjudicated from enrollment to 27 years of follow-up. Women with a history of cancer at baseline (except non-melanoma skin cancer), or missing cancer history or baseline DXA scans were excluded. Whole-body DXA (Hologic QDR2000/QDR4500, APEX 4.0 software) baseline scans were used to estimate abdominal VAT, SAT, and TAT. Descriptive statistics, t-test, and chi-square tests by case status were calculated. Fine and Gray's competing-risks regression was used to estimate Sub-Hazard Ratios (SHR) and 95% confidence intervals (CI) between body composition measures and first incident ObRC. Follow-up started at enrollment and ended at first ObRC event or competing risks (other cancer first, death without cancer) and women surviving without cancer at last follow-up were censored. Covariates included age, height, race, ethnicity, education, physical activity, physical function, HEI 2015, alcohol intake, smoking status, total energy, first degree family history of cancer, trial arm, relevant medications, and reproductive factors. To address missingness we used multiple imputation by chained equations.

Results. We included 9,950 women, of whom, 1,273 developed ObRC. Mean age at baseline was 63.3 (ffl7.4) years, and mean BMI was 28.2 (ffl5.7) kg/m2. In adjusted models, continuous (per 100cm2) baseline measurements of VAT, SAT, VAT/SAT ratio, and TAT were significantly associated with increased risk of incident ObRC: SHR(95% CI); 1.31 (1.22-1.41); 1.15 (1.10-1.20); 1.08 (1.04-1.12); 1.11 (1.08-1.15), respectively. When modeled using quartiles, these significant associations persisted.

Conclusion. Measures of abdominal adiposity were associated with increased risk of incident ObRC in postmenopausal women and risk was twice as elevated for VAT as for SAT.

KEEP IT (Keeping Each Other Engaged via IT): An Innovative Digital Literacy Training Program for Community Health Workers about Hereditary Breast and Ovarian Cancer among Black Women

Allen C, Hatch A, Umemba Q, Washington J, Qanungo S, Ford M, Price T

Purpose: Less than half of eligible Black women are assessed for genetic risk and only 28% engage in recommended HBOC risk-reducing interventions. CHWs are trusted members of the community that work as a liaison between health systems and the community to improve access to services and support cancer prevention efforts, though they are an overlooked to support genetic risk assessment. To address the need and training gaps for CHWs we developed and assessed an online training program called KEEP IT (Keeping Each other Engaged Program via IT).

Methods: The curriculum and modules were developed through engaging CHWs through a focus group as well as consulting a panel of experts in a three-round Delphi process. The process led to the creation of 10 modules for the training. Recruitment focused on CHWs who worked in clinical settings or groups providing outreach or health services to Black women. Measures of the training were guided by the RE-AIM framework to evaluate the course and its effectiveness.

Results: 26 individuals completed the course. We found improvements in knowledge and genomics competencies immediately post-course, but majority of these improvements were not sustained at three-months follow up. The training was highly rated for its relevance to CHW work and overall delivery. Top rated sessions included Hereditary Breast and Ovarian Cancer and Family History and Family History Collection. On average, participants reported discussing HBOC with 17 individuals at three-months follow-up.

Conclusions: Championing a diverse cancer and genomics workforce can help to improve early detection and health equity. Through this training, CHWs gained critical cancer and genomics knowledge that was then applied to their primary roles. This program will serve as a model of how both genetics-informed strategies and engaging CHWs can be implemented to improve cancer prevention and reduce the cancer burden across the United States.

Using Implementation Science to Evaluate a Population-wide Genomic Screening Initiative

Allen CG, Hunt KJ, Thornhill C, Jackson A, McMahon L, Clark J, Kirchoff K, Brown C, Norman S, Lenert L, Judge DP

Purpose: Genetic information is increasingly relevant for disease prevention and risk management at the individual and population levels. We used the implementation science framework RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) to describe outcomes of In Our DNA SC a population-wide genomic screening project being conducted in South Carolina.

Methods: In Our DNA SC involves participation through clinical appointments at our institutions clinical facilities, community events, or at home collection. Participants provide a saliva sample to be sequenced and those with positive results for CDC Tier-1 conditions (Hereditary Breast and Ovarian Cancer, Lynch Syndrome, and Familial Hypercholesterolemia) are offered free genetic counseling.

Results: Reach: Over the first 22 months of the project, 30,496 participants enrolled. The majority enrolled through at home sample collection, followed by clinical sample collection, and collection during community events. Participants were predominately female, White race, non-Hispanic, and between the ages of 40-49. Participants enrolled through community events were the most racially diverse and youngest. Effectiveness: 275 individuals have been identified with pathogenic or likely pathogenic variants for CDC Tier 1 conditions. With high rates of follow-up genetic counseling (74.2% completion) and follow-up clinical-risk management.

Adoption: 12 MUSC clinics and three labs are participating. We have conducted 353 collection events in the community. Implementation: 18,455 samples were resulted. Participants enrolled at home were most likely to return their sample. Maintenance: All clinical sites and labs are continuing enrollment with planned expansion to additional labs.

Conclusion: The use of implementation science can help better understand how to support the implementation and maintenance of population-level genetic screening projects and enhance the ability to integrate genomic information at the point-of-care. Population-level genetic screening may significantly reduce morbidity and mortality from these diseases by informing risk-specific prevention or treatment strategies to those identified with pathogenic variants.

Characterizing the Transcriptomic and Immune Landscape of Benign Breast Lesions in Relation to Mammographic Density

Harris AR, Highfill CA, Fan S, Sprague B, Vacek P, Weaver D, Sherman M, Abubakar M, Gierach GL

Purpose: While benign breast disease (BBD) and mammographic breast density (MBD) are both strong, independent risk factors for breast cancer, evidence suggests they may also interact to jointly influence breast cancer risk. We aimed to characterize the transcriptome and immune microenvironment of benign breast biopsies to better understand relationships underlying BBD and MBD biology.

Methods: The Breast Radiology Evaluation and Study of Tissues-Stamp Project included women aged 40-65 years who underwent diagnostic, image-guided breast biopsy at UVM Medical Center following an abnormal breast imaging exam. Among patients diagnosed with BBD (n=418), RNA was extracted from FFPE breast biopsy tissues for gene expression profiling (Nanostring Breast Cancer 360 panel, 758 genes). MBD was quantified in the biopsied breast as % fibroglandular tissue volume and analyzed in tertiles. Differential gene expression and pathway enrichment analyses were performed by MBD tertile, adjusting for age, BMI, ages at menarche and first birth, biopsy year, menopausal status, and BBD histologic subtype. A subset of BBD tissues (n=64) underwent multiplex immunofluorescent staining for immune cell subpopulations, and associations with MBD were evaluated in multivariable linear regression.

Results: 156 genes were differentially expressed in BBD lesions with high MBD (false discovery rate, FDR)<0.1). Leptin, an adipokine, was identified as the top gene downregulated with high MBD (|fold change, FC|=3.25 FDR=3.1E-06) and HLA-DQA1, an MHC class II gene critical in immune response, was identified as the top gene upregulated with high MBD (|FC|=1.82, FDR=0.07). Pathway analyses of FDR-significant genes revealed increasing MBD was associated with cancer hallmark pathways related to tissue transformation, pro-inflammatory cytokine signaling, and estrogen signaling. Immune cell profiling of the BBD microenvironment revealed suggestive associations (p<0.1) between higher MBD and increased abundance of exhausted T cells (beta=0.05, p=0.07) and macrophages (beta=1.83, p=0.06).

Conclusions: We identified molecular and microenvironmental features differentially associated with elevated breast density in BBD patients. Future directions will relate these findings to 10-year breast cancer risk.

Testing Culturally Responsive Genetic Cancer Risk Screening Messages Among Latino Participants

Shafer A, Serrato V, Rivelli JS, Thompson J, Coronado GD, Shannon J

Purpose: To investigate how Latino individuals react to culturally responsive recruitment for genetic cancer risk screening.

Methods: An online survey tested 42 self-identified Hispanic and Latino/a/x individuals' responses to recruitment messages for a genetic cancer risk screening study, the Healthy Oregon Project (HOP). Participants randomly saw three of six messages in their preferred language of English (n=39) or Spanish (n=3) and quantitatively assessed each message's alignment with cultural values, along with nine message quality factors (e.g., relevance, attention-grabbing, clarity) and effectiveness for themselves, their family, and fellow Latino community members. Each message received feedback from about 20 participants. Qualitative feedback and participant-generated messages were also collected.Message content drew insights from seven focus groups involving Latino HOP participants (N=49). Two messages embraced the cultural value of familismo (family), emphasizing the importance of family bonds and protection. Two messages highlighted confianza (trust), focusing on the credibility of the study's institutional sponsor. Two messages reflected respeto (respect), underlining study accessibility and valuing participants' time.

Results: Both family-focused (M=4.5) and trust-focused (M=4.0) messages were highly rated within their respective cultural value categories. However, respect-focused (M=3.5) messages scored lower in terms of demonstrating respect to the readers. One family-focused message (F) and one trust-focused message (T) ranked highest in message quality, including their ability to capture their family's attention (MF=4.4, MT=4.2), relevance (MF=4.7, MT=4.6), and evoke emotional responses (MF=4.0, MT=3.5). These messages were also perceived as highly effective in motivating participants and their peers to consider joining the genetic cancer risk screening study (MF=4.3, MT=4.4).

Conclusions: The study sought to understand how different culturally based approaches enhance comprehension, engagement, and perceived effectiveness for genetic cancer risk recruitment communication among Latino participants. Three message ranks were identified with two being universally highly rated, three mostly highly rated, and one receiving mixed to poor ratings.

Exploring Oncologists' and AYA Cancer Survivors' Telehealth Experiences and Perspectives to Inform a Provider Intervention to Optimize Virtual Care

Costa C, Allicock MA, Roth M, Shay AL

Purpose: We explored oncology providers' and adolescent and young adult cancer survivors' (AYA) experiences with and perspectives on telehealth, including suggestions for optimizing effective virtual care delivery.

Methods: Ten providers who serve diverse cancer populations across the US participated in semi-structured interviews and 15 English-speaking AYAs (18-39 years) who used telehealth in the past two years participated in one of six focus groups. All interviews and focus groups were conducted via Webex from June 2022 to August 2023. Using a qualitative approach, we analyzed all transcripts using a deductive coding approach and identified themes.

Results: Among providers and AYAs, common positive telehealth experiences included improved patient access to care (e.g., no required travel and scheduling) and increased opportunity to include loved ones at visits. Challenges shared by AYAs and providers included privacy issues (e.g., using shared space or awareness of others sitting in on visits) and provider delays and technical difficulties, potentially limiting visit duration. Some AYAs perceived that virtual visits felt impersonal (e.g., reduced patient engagement) and shorter in duration than in-person visits, resulting in suboptimal care. Most AYAs believed telehealth should not be offered as an initial appointment but should be provided as an option for subsequent visits. All providers believed telehealth training would be beneficial for optimizing AYA virtual care.

Conclusions: These findings will inform the design of a provider educational intervention to include best practices like enhancing patient privacy (e.g., securing a private area, orienting AYAs to others that may be around) and patient-centered strategies similar to in-person visits (e.g., engaging AYAs in small talk, using screen-sharing practices when reviewing results and scans) and allowing AYAs adequate time to ask questions. Understanding oncology providers' and AYAs' experiences with telehealth and their perspectives on how to optimize virtual care delivery for AYA cancer survivors is essential for the delivery of high-quality and patient-centered virtual care.

What do Emerging Adults' Future Cancer Considerations Look Like?

Knight Wilt JY, Thomson MD

Purpose: Younger onset colorectal cancer (CRC) trends have been linked to lifestyle, behavior-based exposures across the lifespan. A paradigm shift that positions primary prevention earlier is needed. Little is known about emerging adults' (age 18 to 25) thoughts about a cancer traditionally considered distal when navigating healthy behavior choices. We explored college students' CRC knowledge, lifestyle risk factors and attitudes about their own risk. We hypothesized that students with cancer history (self/family), CRC knowledge, less self-reported stress and protective health behaviors will consider future cancer risk in current decision-making and perceive lower lifetime CRC risk.

Methods: A random sample of undergraduate students (N=282) completed a survey to assess their health behaviors and attitudes about cancer prevention and CRC risk. Measures included perceived lifetime CRC risk (0-100%), consideration of future cancer risk (CFCR), early life and current stress, cancer history, CRC knowledge, CRC risk behaviors, and sociodemographics. Bivariate correlations evaluated associations between outcomes of CFCR and perceived CRC risk with protective health behaviors, cancer history, CRC knowledge, stress, and sociodemographics; significant ($p<.05$) findings were included in linear regression models.

Results: Participants had a mean age=20 (SD=2), were 78% female, 40% white, 62% employed, and 27% first generation to attend college. CFCR, $F_{(9)}=8.3$, $p<0.001$, was significantly predicted by GPA (B=2.4, p=0.03), CRC knowledge (B=0.8, p<0.01), CRC protective diet (B=0.8, p<0.01), stress management (B=0.5, p<0.01) and avoiding tobacco (B=7.0, p<0.01). Perceived CRC lifetime risk, $F_{(6)}=5.3$, $p<0.001$, was only significantly predicted by employment status (B=0.3, p<0.01).

Conclusion: This study is among the first to characterize emerging adult consideration of future cancer risk, both generally and CRC specific risk. Emerging adults are often overlooked regarding cancer prevention communications but many do consider their general future cancer risk when navigating current lifestyle health choices. CRC primary prevention efforts need to reach this demographic to inform their decisions, reduce lifespan exposure to risk factors, and lower younger onset incidence trends.

Characterizing Physiologic Frailty in Childhood Cancer Survivors Still in Childhood: A Report from the St. Jude Lifetime Cohort Study

Salerno EA, Hu Y, Williams AM, Park Y, Chang S, Krull K, Ehrhardt M, Robison L, Armstrong GT, Joffe L, Ness K

Purpose: We sought to characterize frailty in childhood cancer survivors aged <18 years in the St. Jude Lifetime (SJLIFE) Cohort Study and determine the predictive validity of these indices for healthcare utilization.

Methods: Frailty was defined using a deficit accumulation index (DAI) and the Fried phenotype. The DAI is comprised of 37 items related to aging, including chronic conditions,psychosocial/physical function, and activities of daily living. Items were summed and divided by the total (range 0 to 1), with scores <0.15 considered robust, 0.15-0.24 prefrail and ≥0.25 frail. The Fried phenotype included five indicators of physiological impairment: 1) handgrip weakness; 2) low lean muscle mass; 3) slow walking speed; 4) inactivity, and; 5) self-reported fatigue. Two indicators was considered prefrail and three indicators frail. Healthcare utilization was conceptualized as number of primary care and/or cancer-related doctor visits in the past two years, and number of emergency room visits in the past year. Associations between frailty and healthcare utilization were evaluated with multivariate linear regression, adjusting for sex, race, and age at diagnosis.

Results: Participants (n=535, Mage=14.3ffl2.0) were survivors in SJLIFE who were ≥5 year survivors and <18 years at their baseline assessment. Per the DAI, 79% of participants were robust, 14.8% were prefrail, and 6.2% were frail. According to the Fried phenotype, 42.6% of survivors were robust, 39.8% were prefrail, and 17.6% were frail. Regardless of frailty index, compared with robust childhood cancer survivors, those who were frail had significantly more primary care visits (DAI ≤=1.67, p<.001; phenotype ≤=0.78, p<.001), cancer-related visits (DAI ≤=0.97, p<0.001; phenotype ≤=0.51, p=0.001), and emergency room visits (DAI ≤=0.35, p=0.03; phenotype 0.39, p<0.001).

Conclusions: Our study suggests that 6-17% of survivors <18 years old in SJLIFE may be frail. This wide range should be further explored to determine if these two indicators are measuring different underlying physiologies. Importantly, frailty was associated with significantly higher odds of healthcare utilization.Future research should examine frailty predictors in this population to inform prevention and/or early intervention efforts.

"I'm sure there are guidelines, but I'm not familiar with them": A Qualitative Study Exploring Barriers to Delivering Guideline-Concordant Fertility Discussions among Oncologists and Patients of Reproductive Age

Stal J, Yi SY, Theroux CI, Freyer DR, Quinn M, Ceasar RC, Kim SE, Milam JE, Miller KA

Purpose: This qualitative study explores barriers to the implementation of guideline-concordant fertility counseling for adolescents and young adults (AYA, 15-39 years old) among oncologists who practice at an NCI-designated comprehensive cancer center.

Methods: Semi-structured interviews were conducted to elicit oncologists' experiences surrounding guideline-concordant fertility discussions with AYAs. Inductive and deductive codes were generated, and transcripts were analyzed using grounded-theory methodology.

Results: In total, 11 interviews were completed. Oncologists were on average in practice for 13.2 years (range 7-29). Several themes emerged: (1) Lack of awareness of guidelines ("Honestly, I have never read [guidelines]"I assume they exist, but I have never seen them," "I don't know. I haven't really used external ones [guidelines]"); (2) Lack of oncofertility training ("We're kind of like we learn as we go," "Training? Gosh. I don't think anybody's had any training"); (3) Lack of oncofertility-related institutional policies ("At this point, there are none…Not that I'm aware," "I have never seen a policy about discussing fertility"); (4) High workload limiting implementation of guidelines ("The bureaucratic expectations that you see a certain number of patients per clinic definitely is an inhibitor of a useful or meaningful discussion about fertility," "It's just one more thing, one more set of rules that we have to follow "there's very few physicians who are even going to read it".Physicians are tapped out. There's just no way").

Conclusions: Findings of this qualitative exploration reveal several intervenable barriers. As oncologists regularly deliver treatments that may impact fertility, developing interventions and/or training that facilitate their understanding of guideline-concordant reproductive health care is critical to improving patient health outcomes. Further, an environment conducive to quality care delivery may mitigate adverse outcomes caused by a lack of policies and/or high provider workload. Sustainable interventions to improve the provider- and system-level oncofertility ecosystem and alleviate modifiable barriers are needed to improve care delivery and ensure AYAs receive actionable guideline-concordant oncofertility care.

Transcriptional Indicators of Social Determinants of Health and Cancer Outcomes: Donor Socioeconomic Disadvantage and Recipient Mortality Following Allogeneic Hematopoietic Cell Transplantation

Knight JM, Cole SW, Beyer KM, Wang T, Spellman SR, Allbee-Johnson M, Zhou Y, Verneris MR, Rizzo JD, Henley E, Turcotte LM

Purpose: To determine whether donor immunologic characteristics associated with neighborhood socioeconomic disadvantage will confer prognostic risk to allogeneic hematopoietic cellular transplant (HCT) recipients as indicated by inferior long-term recipient outcomes.

Methods: Utilizing blood samples from the Center for International Blood and Marrow Transplant Research (CIBMTR), we evaluated whether upregulation in donors of the stress- and socioeconomic status (SES)-related gene expression profile termed the 'conserved transcriptional response to adversity' (CTRA) was associated with inferior HCT outcomes at 3 years in recipients being treated for hematologic cancer. Multivariable models adjusted for donor and recipient characteristics evaluated associations between donor CTRA and recipient OS, TRM, disease free survival (DFS), relapse, and acute and chronic graft versus host disease.

Results: We identified 263 donor-recipient pairs for study inclusion. Median recipient age at cancer diagnosis was 53 years (range 19-77), 46% were female, and 54% had acute myeloid leukemia. Donors were 35% female and median age at donation was 31 years (range 18-60). In RNA sequencing data from HCT donors, greater CTRA expression was associated with reduced OS (covariate-adjusted HR=1.94/ CTRA SD, 95% CI [1.01, 3.71], p=.046) which was driven predominately by increased TRM (adjusted HR=5.04, [2.20, 11.50], p=.0001). These clinical outcomes are consistent with those observed to be associated with donor SES in our prior work. Donor cell effects on transplant outcomes derived predominately from the pro-inflammatory component of the CTRA (OS: adjusted HR=1.67, [1.20, 2.33], p = .0026; TRM: adjusted HR=2.21, [1.21, 4.06], p=.010) and emerged above and beyond the effects of the recipients' own SES, as well as multiple other recipient disease, treatment, and demographic factors. Donor CTRA was not associated with relapse, DFS, or other transplant outcomes.

Conclusions: For the first time, we show that transcriptome patterning among HCT donors, consistent with neighborhood SES disadvantage, results in adverse recipient HCT outcomes. These findings suggest that SES has a biologic impact at either the stem or immune cell level that persists even when transplanted into a new host.

Perceived Neighborhood Social Cohesion and Adherence to Physical Activity Guidelines Among Breast Cancer Survivors

Mszar R, Puklin LS, Cao A, Cartmel B, Irwin ML, Ferrucci LM

Purpose: Neighborhood social cohesion has been associated with lower levels of health behaviors in the general population. However, little is known about social cohesion and meeting physical activity guidelines among breast cancer survivors. Therefore, we evaluated this question in a large nationally representative sample.

Methods: We utilized multiple years (2015-2018) of cross-sectional data from the National Health Interview Survey among women with a self-reported history of breast cancer. We compared adherence to aerobic (≥150 minutes of moderate or vigorous physical activity/week) and strength training (≥ 2 days/week of strengthening exercises) physical activity guidelines by individuals' perceived neighborhood social cohesion status. A composite cohesion score was calculated by summing four separate, cohesion-specific subscales (help availability, accountability in neighbors, trust in neighbors, close-knit neighbors) and classifying low vs high cohesion as below and above the median composite score (range: 4-16), respectively. Multivariable odds ratios (OR) and 95% confidence intervals (CI) were calculated with logistic regression and adjusted for age, race, ethnicity, region, and marital status.

Results: Our analysis included 1,623 women with a history of breast cancer (mean age: 69 years; 87% white), representing 2.8 million women annually. The median composite social cohesion score was 14 (interquartile range [IQR]: 4). Overall, 39.4% and 20.0% of breast cancer survivors met the aerobic and strength training physical activity guidelines, respectively, with only 15.4% of individuals meeting both guidelines. After adjusting for sociodemographics, women with low social cohesion had increased odds of not meeting aerobic (OR: 1.24 [95% CI: 1.04-1.59]) and strength training (OR: 1.49 [95% CI: 1.15-1.92]) physical activity guidelines, and an increased odds of not meeting both guidelines (OR: 1.38 [95% CI: 1.04-1.83]).

Conclusions: In this nationally representative sample, breast cancer survivors with lower levels of neighborhood social cohesion were less likely to meet physical activity guidelines. Future public health strategies should address social support and neighborhood cohesion as key determinants for promoting health among those with breast cancer.

Neighborhood Disinvestment as a Predictor of Breast Cancer Survival among Black Women in New Jersey Urban Areas

Plascak JJ, Xing CY, Mooney SJ, Rundle AG, Schootman M, Qin B, Zeinomar N, Llanos AAM, Iyer HS, Ambrosone C, Demissie K, Hong C, Bandera EV

Purpose: To investigate the association between modifiable neighborhood disinvestment, stage at diagnosis, and breast cancer-specific survival time.

Methods: Individual-level data were from the Women's Circle of Health Follow-up Study, a cohort of breast cancer cases self-identifying as African American or Black, diagnosed 2013-2019 in New Jersey. Demographic, socioeconomic, health behavior, and dietary characteristics were self-reported at baseline. Tumor, treatment, and vital status factors were from a linkage with cancer registry and medical records. Neighborhood disinvestment was assessed using a previously validated virtual audit of 6 disinvestment indicators - garbage, graffiti, dumpsters, building conditions, yard conditions, abandoned buildings - in 14,671 Google Streetview streetscapes. This measure was then estimated at each participant's residential address. Census tract socioeconomic composition and African American/Black residential segregation were calculated from Census Bureau data. Accelerated failure time models of breast cancer specific survival time as functions of neighborhood disinvestment by stage were fit to estimate survival time ratios and 95% CI, adjusted for covariates. Participants not experiencing an event at the end of follow-up for this analysis (August 13, 2023) were right-censored.

Results: There were 93 breast cancer-specific deaths and median follow-up time was 89 months among 853 participants. There was an interaction between disinvestment and stage ($p < 0.01$). Among those diagnosed stage III, breast cancer-specific survival time decreased by 27% (95% CI: 0%, 47%) for each standard deviation increase in disinvestment after adjustment for demographic, socioeconomic, health behavior, dietary, tumor and treatment-related factors. Among those diagnosed stage II, breast cancer specific survival time decreased by 36% (95% CI: 4%, 57%) for each standard deviation increase in neighborhood disinvestment. There was little evidence for associations between disinvestment and survival among stages I and IV in covariate-adjusted models.

Conclusion: The stage-dependent association between greater neighborhood disinvestment and shorter survival time could reflect chronic stress exposures suspected to adversely accumulate over time.

Evaluating the Impact of a Program to Address Acute Food Insecurity among Cancer Patients

Sina EM, Rowe M, Mancuso G, Garber G, Kelly WK, Leader AE

Background: Acute food insecurity (FI) is a significant yet poorly understood social risk factor facing cancer patients, with a prevalence greater than that of the general U.S. population. FI poses a particular risk for cancer patients, as it is associated with psychsocial distress, reduced adherence to cancer therapy, and poorer clinical outcomes. Legacy of Hope is a non-profit organization in Philadelphia, PA that receives patient referrals from oncology social workers and assembles one or more free bi-weekly grocery orders, delivered by local police precincts, until a patient's acute FI needs are addressed.

Methods: Upon receiving a referral, Legacy of Hope documents the patient's age, race/ethnicity, gender, cancer diagnosis, size of the household, and the number of children living in the house. Additionally, a recently launched participant evaluation survey collects data via text message and an online survey at two time points: at the time of the first grocery delivery and second, two weeks later. The survey uses validated measures (FACT-G7) to assess changes in quality of life and anxiety, as well as acute FI, over the two-week time period. Mean scores and frequencies evaluate the changes in the outcome measures of interest.

Results: Legacy of Hope has served more than 1600 cancer patients (52% female, 58% African American, mean age 60 years old) with more than 2000 food deliveries. Breast cancer was the most common diagnosis (18%), followed by lung (8%) and colorectal cancer (5%). One in five patients (21%) lived alone, but most (45%) had between 2 and 3 persons in their household. Children were present in the home 21% of the time. Twenty-nine patients (66% female, 85% African American, mean age 51) have completed the evaluation survey. Mean scores related to pain, nausea, and worry about affording food decreased over time, while the mean score related to having enough food for one's family increased over time.

Discussion: Legacy of Hope provides an important community-based resource to address acute FI for cancer patients. While the high volume of grocery deliveries demonstrates program reach, evaluation data shows early impact on physical and emotional conditions, as well as addressing FI.

Impact of School Nurse Education on HPV Knowledge and Self-Efficacy for Vaccine Communication with Parents for Cancer Prevention

Choi J, Gabay EK, Deason JE, Baumler ER, Santa Maria DM, Mullassery DG, Savas LS, Thompson ET, Misra SM, Cuccaro PM

Purpose: Human papillomavirus (HPV)-associated cancers continue to be a public health burden but are preventable with timely vaccination. School nurses' knowledge and positive perceptions of HPV vaccination and vaccine recommendations are vital to prevent HPV-associated cancers for adolescents into adulthood. As part of a multilevel, multicomponent program designed to increase adolescent HPV vaccine uptake in Texas, we developed and delivered HPV-focused continuing school nurse education (CNE) statewide. We assessed the impact of the CNE on nurses' knowledge, attitudes, and self-efficacy to communicate about HPV vaccination to parents and to provide strong vaccine recommendations.

Methods: We conducted a pre/post-survey among participating school nurses to examine psychosocial variables and intentions to change practice following the intervention. Nurses were asked about their anticipated use of skills learned in the session in the post-phase of the survey.

Results: In a matched sample (n=72), significantly fewer nurses indicated their HPV knowledge and understanding of the recommended dosing schedule as barriers (p<0.01). Nurses who did not at all perceive their knowledge as a barrier increased from 48.6% to 75.0%. We observed significant increases in confidence for parent communication about HPV vaccination across all six self-efficacy variables (p<0.01). For example, nurses who strongly agreed in their confidence to strongly recommend the HPV vaccine rose considerably from 23.6% to 55.6%. However, changes in nurses' comfort asking parents about reasons for vaccine refusal were not significant. The majority of nurses stated that they would communicate more with parents about the HPV vaccine (76.8%) and increase parent education (63.8%), using the skills learned in the CNE.

Conclusions: As adolescent vaccine uptake is contingent on parental decisions, effective communication is critical to educate and allay concerns of vaccine hesitant parents. School nurses' credibility with parents makes them a trusted source of vaccine information. Educating them about HPV vaccination can lead to stronger vaccine recommendations, which can contribute to increased vaccine uptake among adolescents, ultimately leading to reduced risk of HPV-associated cancers.

Coloscopy Referral Rates Post-Introduction of Primary Human Papillomavirus Screening for Cervical Cancer: Evidence from a Large British Columbia Cohort Study

Gottschlich A, Gondara L, Smith LW, Anderson JJ, Cook D, Krajden M, Lee M, Martin RE, Melnikow J, Peacock, S, Proctor L, Stuart G, Franco EL, van Niekerk, D, Ogilvie GS

Purpose: Shifting from cytology to HPV screening for cervical cancer initially increases colposcopy referrals. This increase, and anticipated impacts on health systems, is an implementation concern. It is unclear if higher referral rates are sustained after initial screens or if they eventually decrease due to earlier detection/treatment of precancer. This study investigated long-term rates of colposcopy referral after participation in HPV screening.

Methods: HPV FOCAL trial participants received 1-2 HPV screens (HPV1: N = 6204; HPV2: N = 9540). After exit, they screened in BC's cytology screening program. We identified a comparison cohort from the screening program (BCS, N = 1,140,745), mirroring trial inclusion criteria. Participants were followed for 14 years through BC's screening registry. Colposcopy referral rates per 1,000 screens were calculated by group. Trial-related referrals were calculated under two scenarios: (1) all HPV+ referred to colposcopy; (2) cytology triage with ≥ASCUS referred to colposcopy. Post-trial referrals were based on actual screening program recommendations. A multivariable flexible survival regression model compared hazard rates (HR) through follow-up.

Results: Scenario 2 referrals were higher during initial HPV screen(s) vs cytology (HPV1: 28 per 1000 screens (95% CI: 24, 33), HPV2: 32 (95% CI: 29, 36), BCS: 8 (95% CI: 8,9)). However, post-trial rates in HPV1 and HPV2 were significantly lower than BCS. Cumulative rates in HPV1 and HPV2 approached the cumulative rate in BCS 11-12 years after HPV screening (HPV1: 11 per 1000 screens (95% CI: 10, 12), HPV2: 16 (95% CI: 15-17), BCS: 11 (95% CI: 10, 11)). Time-varying hazard ratios from adjusted regression models demonstrated rate reductions in HPV1 (HR=0.6, 95%CI: 0.5, 0.7) and HPV2 (HR=0.7, 95%CI: 0.6, 0.8) relative to BCS by 54 and 72 months post-final HPV screen, respectively.

Conclusions: After initial HPV screening with cytology triage, colposcopy referrals were below current rates in a centralized cytology program after approximately four years. After subsequent screens, colposcopy referrals decline. The health system impact from increased referrals at HPV screening initiation could be mitigated by strategies such as a phased commencement of HPV implementation by age.

Associations between Clinic- and Neighborhood-Level Measures of Structural Racism and Discrimination and Cervical Cancer Screening

Hughes AE, Beauchamp AB, Alegria M, Carter J, Kobrin S, Tiro JA, Haas J

Purpose: Few studies investigate how structural racism and discrimination (SRD) affect the cervical cancer screening continuum to produce worse outcomes among minoritized populations. Extending work by Beyer et al., we describe associations between cervical cancer screening and 3 SRD measures.

Methods: Our dependent variable was receipt of Pap/HPV for average-risk women aged 21-64 receiving primary care at Parkland Health and Mass General Brigham (MGB) between 2010-2019 and due for screening. We characterized historic redlining using publicly available maps linking areas designated as "hazardous" for mortgage lending in the 1930s to modern-day census tracts. Using publicly available loan application data from 1990-2020, we calculated a modified bias in mortgage lending (BIML) index at census tract level to describe odds of mortgage application denial for Black (vs white) residents. We report on screening receipt within 12 months of study entry for patients who live in neighborhoods with 1) historic redlining [vs not] and 2) biased lending [vs not]. Further, we calculated local exposure and isolation (LEx/Is) index to describe the probability that Black and white patients interact at each clinic. Using the measure, we examined whether screening rates differed by receipt of care in segregated clinics [vs not]. We used Chi-squared statistics to quantify differences in screening receipt across these independent variables.

Results: Of 294540 women, 155376 (52.8%) received screening within 12 months of study entry. Patients living in historically redlined neighborhoods were less likely to be screened at Parkland (54.7% vs 59.1%, $p<0.001$) but more likely at MGB (43.0% vs 48.7%, $p<0.001$). Patients living in areas with BIML were more likely to be screened at Parkland (56.6% vs 61.3%, $p<0.001$) but not at MGB (44.8% vs 44.3%; $p=0.36$. Patients who attended clinics where Black-white segregation was higher compared to the health care system were less likely to be screened compared to clinics were segregation was lower (32.1% vs 71.5%, $p<0.001$ at Parkland; 44.8% vs 41.4%, $p<0.001$ at MGB).

Conclusions: Mechanisms linking SRD and cervical cancer screening receipt are complex, with different associations across cities. Careful research is needed to elucidate connections.

Validation of a Parent HPV Vaccine Misperceptions Scale and its Association with Child HPV Vaccination Status

McDaniels-Davidson C, Strong D, Parada Jr H, Nodora J, Stack-Babich M, Miller E, Madanat M, Martinez ME

Purpose: To validate a brief parent HPV vaccination misperception scale and to understand how parent misperceptions impact the decision to vaccinate their children.

Methods: We fielded a population health assessment within a large majority-minority southwest border county in 2019; data were weighted to demographically represent the population. Among the measures was a series of Likert scale items assessing parent HPV vaccine misperceptions. Parent sociodemographics and HPV vaccination status of age-eligible children were also assessed. Using unweighted data, we used exploratory factor analysis to assess construct validity of the 12-item HPV vaccination misperception scale among all community-dwelling adult respondents (n=491) and in a subsample of parents with children age-eligible for the HPV vaccine (n=157). Within the parent subsample, survey weighted multivariable logistic regression (nweighted=516,563) was used to estimate concurrent validity using the association [odds ratio (OR) and corresponding 95% confidence interval (CI)] between HPV vaccine misperception scale scores and the HPV vaccination status of their age-eligible children.

Results: The 12-item scale had high internal consistency (Cronbach's $\alpha=0.91$). Three subscales (age-related concerns, safety concerns, linkage to sexual activity) were identified for the HPV vaccine misperception scale in both samples. The weighted parent sample was racially and ethnically diverse (44.9% Hispanic, 33.0% non-Hispanic white, 18.2% Asian/Pacific Islander, and 3.9% Black). Parent HPV vaccine misperceptions scale score was associated with their children's HPV vaccine status in adjusted models; for every standard deviation increase in the scale score, the odds of children not receiving the HPV vaccine doubled (aOR=2.09; 95%CI=1.26-3.45).

Conclusions: This valid scale assessing parent HPV vaccine misperceptions can be used on a population level to shift community norms through focused messages in culturally and geographically tailored campaigns. The scale could also be completed by hesitant parents to facilitate one-on-one patient counseling within healthcare settings.

Advancing Gastric Cancer Equity Inclusive of Low Health Literacy and Limited English Proficient Chinese American Immigrants Living in New York City

Kwon SC, Tan YL, Mui A, Pan J, Chong S, Wyatt L, Zhao Q, Williams R, Xiao P, Malieckal A, Gamagaris Z, Trinh-Shevrin C

Background: Chinese Americans, especially immigrants, face a disproportionate burden of gastric cancer incidence and mortality. Infection with Helicobacter pylori (H. Pylori) is the strongest risk factor for gastric cancer but adherence to the complex treatment is challenging for Chinese New Yorkers with limited English proficiency (LEP) and low health literacy. Despite the cancer disparity, there are no culturally and linguistically tailored evidence-based strategies to address gastric cancer prevention strategies for Chinese Americans.

Purpose: The study purpose is to implement and assess the efficacy of a patient-centered, culturally-adapted and in-language intervention to reduce gastric cancer risk factors for Chinese New Yorkers.

Methods: We conducted a 5-year, 2-arm randomized clinical trial (n=135) across 2 safety net settings in Manhattan, a community health center and 3 private practices serving mostly Chinese-speaking patients. Intervention group participants were paired with a CHW for 6 months and received culturally and linguistically-adapted education and goal-setting sessions. Data collection methods are: 1) baseline, 2-month and 6-month surveys; 2) intervention group participant interviews; and 3) CHW reports.

Results: Study participants were predominantly LEP, low-income Chinese American immigrants with low health literacy and limited knowledge of H. pylori and gastric cancer risk factors. At 2-month follow up, H. pylori knowledge, gastric cancer knowledge, medication adherence, food behavior barriers, and decision self-efficacy increased significantly for both groups; knowledge change was significantly greater for the treatment group. We will share the final primary and secondary study outcomes of H. pylori eradication, medication adherence, self-efficacy, and health literacy. These results are supplemented with qualitative findings from CHW reports on participant barriers and facilitators to medication adherence, goal-setting and behavior change.

Conclusions: Preliminary results indicate improved outcomes for our treatment group. A CHW-led culturally adapted intervention shows promise for improving stomach cancer prevention outcomes for underserved Chinese Americans in NYC.

Disparities in Ovarian Cancer Survival among Disaggregated Asian American Subgroups

Lee AW, Poynor V, Siddiqui S

Purpose: Because most ovarian cancer studies evaluate Asian Americans as a single aggregated group despite their heterogeneity, we examined ovarian cancer survival in seven Asian American subgroups to identify possible ethnic-specific disparities.

Methods: Using population-based registry data in the Surveillance, Epidemiology, and End Results Program from 2006 to 2018, we calculated age-standardized five-year cause-specific survival for Asian Indian/Pakistani, Chinese, Filipino, Japanese, Korean, Vietnamese, and Hawaiian/Pacific Islander ovarian cancer patients. We also applied weighted Cox regression to determine the risk of dying from ovarian cancer for each Asian subgroup compared to non-Hispanic Whites. Due to violation of the proportional hazards assumption, we inferred with average hazard ratios (AHRs) and their corresponding 95% confidence intervals (CIs). Demographic, tumor, socioeconomic, and treatment characteristics were considered in the analyses.

Results: Asian Indian/Pakistanis had the highest five-year survival at 53.74% (CI 47.75%-59.35%) and Hawaiian/Pacific Islanders had the lowest at 40.27% (CI 33.02%-47.40%). When compared to non-Hispanic Whites, Asian Indian/Pakistanis were 20% less likely to die from ovarian cancer (AHR=0.80, 95% CI 0.68-0.93) whereas Hawaiian/Pacific Islanders were 26% more likely to die from the malignancy (AHR=1.26, 95% CI 1.05-1.52) after adjustments.

Conclusions: Most studies show Asian Americans having the highest ovarian cancer survival across major racial groups. However, our analyses indicate only Asian Indian/Pakistanis have better survival while Hawaiian/Pacific Islanders actually showed poorer survival when compared to non-Hispanic Whites. These findings highlight the importance of disaggregating the Asian American population when studying ovarian cancer. Future work should explore the behavioral, environmental, and biological factors that could explain the ethnic-specific survival disparities observed.

Race/Ethnicity and Employment Predict Quality of Life among Cancer Patients of Mixed Diagnoses

Leitzelar BN, Willis AR, Falk DS, Murphy KM, Strom C, Weaver KE, Ruiz J, Tooze JA

Purpose: To identify differences in quality of life (QoL) by race/ethnicity and socioeconomic status (SES) among cancer patients at an academic medical center.

Methods: Cancer patients completed a one-time survey (June 2016-September 2019) as part of a broader study; Hispanic/Latinx, Non-Hispanic Black (NHB), young adult, and uninsured patients were oversampled. Predictors included race/ethnicity and SES variables (adequate resources (yes/no), educational attainment (high school degree yes/no), & employment (employed, retired, disabled, other)). The outcome was the PROMIS Global-10 measure (physical & mental health, pain subscores). ANOVAs tested significant interactions between race/ethnicity and SES variables for each QoL subscore. Next, multiple general linear models included race/ethnicity and, using $p < 0.10$ as a cutoff, SES, significant interactions, and potential confounding variables (age, gender, rural/urban, insurance, marital status, & cancer-related variables). Backwards selection determined final models and least square means are reported.

Results: The sample included 260 cancer patients (37.3% Hematologic; 56% female, age (yrs): M=56, SD=16). There was a significant interaction between race/ethnicity and employment for physical health ($p < 0.05$). For employed patients, the Non-Hispanic White (NHW) group had the best physical health (M=52.5) and the NHB group had the worst (M=43.6). For retired patients, the Hispanic/Latinx group had the best (M=52.4) and the NHW group had the worst (M=45.6) physical health. There were no significant interaction effects for mental health or pain ($p > 0.05$). Race/ethnicity ($p < 0.01$; MD between NHW and NHB=0.50) and employment status ($p < 0.01$, MD between employed and disabled=0.97) were significantly associated with pain. Race/ethnicity was not associated with mental health, but having adequate resources ($p = 0.04$) and employment ($p < 0.001$) were associated with better mental health.

Conclusions: Employment was a consistent predictor of all QoL outcomes and we found different racial/ethnic differences in physical health by employment. NHB patients also reported more pain than NHW patients. Employment, along with financial resources, may be important to consider along with race/ethnicity to support QoL in cancer patients.

Experiences of Underserved Patients with Abnormal At-Home Cancer Screening Results: A Mixed Methods Analysis

Moss JL, Bernacchi V, Entenman J, Stuckey H, Ruffin MT

Purpose: To assess screening and follow-up among underserved patients who received abnormal results on at-home screening tests for cervical cancer or colorectal cancer.

Methods: Participants were drawn from a larger randomized trial assessing at-home screening for colorectal cancer (with fecal immunochemical tests, or FIT) and for cervical cancer (with self-sampled human papillomavirus, or HPV, tests) among patients who were eligible but out-of-date with both screenings (e.g., ages 50-65, with an intact cervix). For the current study, we completed surveys and in-depth interviews with participants who had received abnormal results from at-home screenings (n=5). We used quantitative, qualitative, and mixed methods analyses to evaluate participants' receipt of appropriate follow-up care, understanding of results, and satisfaction with at-home screenings.

Results: In terms of follow-up care (theme 1), all participants reported receiving appropriate follow-up procedures after an abnormal cancer screening test. Interestingly, however, the analysis of understanding of results (theme 2) demonstrated that not all participants could correctly interpret the meaning of an abnormal screening result. Participants who indicated the greatest understanding of their abnormal results had the highest scores on a measure of knowledge about cancer screening administered at baseline. Finally, participants were generally satisfied with the at-home screenings (theme 3), because they were more private and convenient than in-person screenings. Particularly for cervical cancer, more positive evaluations of the at-home screenings were related to preferences for using an at-home test the next time participants need cancer screening.

Conclusions: "Near home" care has proliferated since the beginning of the COVID-19 pandemic, and at-home tests can help maintain access to cancer screening, especially among underserved patients. Future efforts to make at-home cancer screening more widely available should (1) provide education about the purpose and meaning of cancer screening/results and (2) establish mechanisms to streamline access to follow-up diagnosis and treatment services.

The Intersection of Social-Environmental Burden and Cancer Outcomes in the US: A Geospatial Analysis

Ashad-Bishop K, Wiese D, Baeker Bispo JA, Katana M, Islami F, Bandi P, Jamel A

Background: Due to emerging evidence on the effects of neighborhood social and built environment on cancer outcomes, the assessment of social-environmental burden across the US has become as a research priority. The Environmental Justice Index (EJI) is a novel, place-based tool based on 36 environmental, social, and health factors to quantify social vulnerability and environmental injustice across the United States. Our objective was to utilize the EJI to characterize the prevalence of cancer screening across hotspots of cumulative social-environmental burden.

Methods: We linked data from the Centers for Disease Control and Prevention EJI (2022), PLACES dataset (2020), and Social Vulnerability Index (2020). Analyses focused on identifying the degree of overlap between geographic hot spots (Global Moran's I) of social vulnerability, environmental injustice, and social-environmental burden and the crude prevalence of breast, cervical, and colorectal cancer screening at the census-tract level in the six most populous cities in the United States.

Results: Overall, 788 (47.1%) tracts were identified as concentrated hotspots of social vulnerability (SV), 700 (41.9%) as concentrated hotspots of environmental injustice (EI), and 185 (11%) as concentrated hotspots of both social and environmental burden (SEB). Hotspots of SEB as defined by the EJI had the lowest prevalence of breast, cervical, and colorectal cancer screening (breast: median 76.9%, IQR 73.3%-78%; cervical: median 77.7%, IQR 75.8%-79.8%; colorectal: median 49%, IQR 46%-53%) than hot spots of SV (breast: median 79.2%, IQR 76.9%-81.3%; cervical: median 79.4%, IQR 77.2%-81.3%; colorectal: median 52%, IQR 49%-56%) and EI alone (breast: median 77.9%, IQR 76.4%-81.6%; cervical: median 82%, IQR 79%-85.4%; colorectal: median 61%, IQR 54%-67%) (p<.001).

Conclusion: Hotspots of cumulative SEB exhibit the lowest rates of breast, cervical, and colorectal cancer screening participation relative to hotspots of SV and EI alone. SEB hotspots may represent priority areas for targeted, place-based cancer control and prevention efforts. Future research may identify indicators specific to the SEB hotspots that predict lower cancer screening risk and can be targeted via structural interventions.

Ambient Air Pollution Exposure and Urological Cancer Risk in Adults: A Systematic Review and Meta-Analysis of Epidemiological Evidence

Li J, Deng Z, Soerensen SJC, Kachuri L, Cardenas A, Graff RE, Leppert JT, Langston ME, Chung BI

Objectives: To systematically assess the association between ambient air pollution and the risk of urological cancer in the literature.

Methods: Systematic review and meta-analysis of epidemiological studies (cohort, case-control, and ecological studies),through online databases as of May 11, 2023. Studies that reported associations between the risk of individual or overall urological cancers in adults and air pollution were included. Two authors independently performed the preliminary screening and data extraction. Using random effects meta-analysis with robust variance estimation, we evaluated the standardized association estimates expressed as pooled relative risks per unit of pollutants.

Results: Of 5422 studies that were first screened from electronic databases, 32 studies were evaluated, with 20 studies satisfying the inclusion/exclusion criteria for meta-analysis. A 5 µg/m3 increase in PM2.5 was associated with a 6% increased risk of all urologic cancers (RR=1.06, 95%CI: 1.03,1.10), a 5% increased risk of bladder cancer (RR=1.05, 95%CI: 1.02,1.09), an 8% increased risk of kidney cancer (RR=1.08, 95%CI: 1.04,1.13), and 7% increased risk of prostate cancer (RR=1.07, 95%CI: 0.99,1.16). A 10 µg/m3 increase in NO2 was associated with a 4% increased risk of overall urologic cancer (RR=1.04, 95%CI: 1.00,1.09), and a 6% increased risk of prostate cancer (RR=1.06, 95%CI: 1.02,1.10), but not bladder (RR=1.03, 95%CI: 0.98,1.07) or kidney cancer (RR=1.08, 95%CI: 0.98,1.19). No association was identified for testicular cancer. Were these associations to reflect causal relationships, reducing PM2.5 level to 5.8 µg/m3, below which it is challenging to predict the harmful health effects, would decrease the age-standardized rate (ASR) of urological cancer by 1.6 to 27.4 cases per 100,000 people across the top 30 countries with the highest urological cancer burden.

Conclusions: Ambient air pollution, particularly PM2.5 and NO2, might be associated with an increased risk of urological cancer, although data on specific types of urologic cancer remain limited. Implementing global health policies that can improve air quality could potentially alleviate the public health burden of urological cancer.

Associations between Neighborhood Stressors and Allostatic Load in the Pathways Study

Sangaramoorthy M, Samayoa C, Inamdar P, Roh JM, Valice E, Hong C, Kwan ML, Ambrosone CB, Kushi LH, Gomez SL, Shariff-Marco S

Purpose: Allostatic load (AL) is a composite physiological measure of chronic stress and may be an important intermediary factor for morbidity and mortality in breast cancer survivors. To better understand how contextual factors impact survivorship outcomes in breast cancer survivors through a stress pathway, we examined the associations between neighborhood stressors and AL.

Methods: With 2,553 women from the Pathways Study, a breast cancer survivor cohort at an integrated healthcare system, AL was derived from electronic health record and survey data using 13 components for cardiovascular, metabolic, and immune domains. Neighborhood data were appended to participants' geocoded baseline addresses. Odds ratios (OR) and 95% confidence intervals (CI) for neighborhood-AL associations were estimated by multivariable logistic regression.

Results: Women with higher AL were more likely to identify as Black, Hispanic, or American Indian or Alaska Native, and have lower individual socioeconomic status (SES), be widowed/separated/divorced, parous, less physically active, ever smokers, drink less alcohol, have higher energy intake, and later stage at diagnosis. In age-and stage-adjusted models, neighborhood SES (Quintile (Q) 1 vs Q5: OR=2.24, 95% CI=1.61-3.12), household crowding (Q5 vs Q1: OR=1.57, 95% CI=1.05-1.67), Restaurant Environment Index (> 0.16 vs. none: OR=1.50, 95% CI=1.21-1.84), traffic density (Q5 vs Q1: OR=1.32, 95% CI=1.01-1.72), total crime index (>100 vs. 25: OR=1.32, 95% CI=1.05-1.67), and green space (Q1 vs Q5: OR=1.55, 95% CI=1.18-2.03) were associated with higher AL. After co-adjusting for all neighborhood factors, neighborhood SES and fast-food restaurants remained associated with AL, however, after further adjustment for sociodemographic, reproductive, and lifestyle risk factors, the association with fast food restaurants became attenuated while that of neighborhood SES remained (OR=1.32, 95% CI=1.01-1.71).

Conclusions: These findings suggest that stress is one pathway through which neighborhood factors may impact health. Future studies can utilize larger study populations and longitudinal data to uncover specific pathways through which neighborhood factors get "under the skin" and ultimately impact cancer survivorship outcomes.

Air Pollutants and Breast Cancer Risk: An Analysis of Four Large U.S. Prospective Cohorts

White AJ, Hart JE, Quraishi SM, Bookwalter D, Sweeney M, Spalt E, Neuhouser ML, Whitsel EA, Kaufman JD, Laden F, Sandler DP

Purpose: This study evaluated the association of residential exposure to fine particulate matter (PM2.5) and nitrogen dioxide (NO2) with breast cancer incidence across four large prospective US-based cohorts.

Methods. Residential exposure to PM2.5 and NO2 was estimated for participants in the Nurses' Health Study, Nurses' Health Study II, Women's Health Initiative (WHI) and the Sister Study using the same spatiotemporal air pollution exposure models. Cox proportional hazards regression was used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for the association between time-varying 24-month PM2.5 (10ug/m3) and NO2 (10ppb) averages and breast cancer incidence for each cohort adjusting for age, calendar time, census region, neighborhood and individual socioeconomic indicators and for WHI, randomization arm. Using a random effects model, summary effect estimates were calculated overall and by tumor subtype (defined using combined estrogen receptor (ER) and progesterone receptor (PR) status) and census region.

Results. Higher exposure to NO2 was associated with overall breast cancer incidence (N=28,793 cases, HR=1.03, 95% CI: 1.01-1.05) with little variation by tumor subtypes or census region. Higher exposure to PM2.5 was not related to breast cancer incidence overall (N=20,187 cases, HR=1.00, 95% CI: 0.94-1.07). However, PM2.5 was associated with a higher incidence of ER-PR- tumors (N=2380 cases, HR=1.32, 95% CI: 1.10-1.57), whereas no association was observed for hormone receptor-positive tumors (N=14,907 cases, HR= 0.94, 95% CI: 0.87-1.01). Additionally, PM2.5 was associated with a higher overall breast cancer incidence in the Midwestern U.S. (HR= 1.37, 95% CI: 1.04-1.81), but not other geographic regions.

Conclusions. In the largest US study to date, these findings confirm previous studies supporting a relationship between NO2, a proxy for traffic emissions, and breast cancer. We also observed novel findings suggesting higher PM2.5 exposure may be related to incidence of ER-PR- tumors, which has the poorest rates of survival after diagnosis and few established risk factors. Geographic differences in the PM association may reflect regional differences in sources of particulate matter.

T denotes trainee submission.

Behavioral Science & Health Communication

1

Biobehavioral Predictors of Mood, Fatigue, and Insomnia after Endometrial Cancer Surgery

Ver Hoeve, ES, Rumble, ME, Rose, SL, Coe, CL, Nelson, AM, Morris, KE, and Costanzo, ES

Purpose: This longitudinal study evaluated the extent to which circadian rest-activity rhythms and inflammation may underlie prevalent and persistent psychological and physical symptoms after endometrial cancer surgery.

Methods: Endometrial cancer patients (N=76) wore a wrist actigraph for 3 days, provided a blood sample, and completed patient-reported outcome (PRO) measures of depression and anxiety (IDAS), fatigue (FSI), and insomnia (ISI) at 1, 4, and 16 weeks post-surgery. 24-hour circadian rest-activity indices (mesor,
amplitude, acrophase, R-squared) were derived from actigraphy. Circulating proinflammatory cytokines (IL-6, IL-8, TNFa) were measured using a multi-cytokine panel (Mesoscale Discovery).

Results: PRO scores showed a high prevalence of clinically elevated depression (35%), fatigue (64%), and insomnia (54%) symptoms at 1 week post-surgery, with significant improvement by 16 weeks. Mixed-effects regression models covarying for age and cancer stage indicated that participants with higher physical activity (mesor) reported less depression ($\leq=-.24$) and fatigue ($\leq=-.32$) across study timepoints, all p<.05. Those with a larger distinction between daytime activity and nighttime rest (amplitude) reported less depression ($\leq=-.27$), anxiety ($\leq=-.28$), and fatigue ($\leq=-.32$), all p<.05. Participants with rhythm peaks earlier in the day (acrophase) reported less anxiety ($\leq=.24$) and fatigue ($\leq=.22$), all p<.05. Those with more consistent rest-activity rhythms (R-squared) reported less depression ($\leq=-.19$), anxiety ($\leq=-.20$), and fatigue ($\leq=-.29$), all p<.05. Fixed effects models covarying for time since surgery confirmed that temporal variation in rest-activity rhythms within individual participants were associated with corresponding changes in depression, anxiety, and fatigue; symptom burden was lowest when rest-activity rhythms were strongest and most consistent. Few associations between
inflammatory markers and symptoms were seen.

Conclusions: Endometrial cancer survivors who were more active and had strong and consistent rest-activity rhythms had better mood and less fatigue after surgery. Findings suggest modifiable intervention targets with the potential to optimize psychological and physical function for endometrial cancer survivors.

2

Cancer Screening Status: Predictor of COVID-19 Interest and Vaccination Intention among Older Adult Facebook Users

Miller C, Guidry J, Fuemmeler B

Purpose: The purpose of this study was to examine the relationship between cancer screening status and 1) interest in reading about COVID-19 on Facebook and 2) COVID-19 vaccination intentions.

Methods: Facebook users age 50-75 years old were recruited and administered an online survey via Qualtrics in Fall 2020. Participants were asked to indicate intent to get the COVID-19 vaccine when it becomes available (collapsed: yes/no) and their interest in reading about COVID-19 on Facebook. Responses: (1) "Not at all," (2) "A little bit," (3) "A moderate amount," (4) "A lot," and (5) "A great deal" were dichotomized as (3-5) moderately interested (vs (1-2) little/no interest). Cancer screening statuses were categorized as up-to-date (UTD) (vs not UTD) according to screening guidelines. Four logistic regression models, controlling for demographics, were run to assess whether colorectal cancer (CRC) and breast cancer (BCA) screening statuses predicted interest in reading about COVID-19 and COVID-19 vaccination intentions.

Results: Respondents (N=769; 50.1% female) were on average 62.4 (SD=6.9) years old and 50.1% were non-Hispanic White. N=422 (54.9%) reported moderate interest in reading about COVID-19 on Facebook. N=360 (53.2%) intended to get the vaccine when available. Most were UTD with CRC (n=532, 69.3%) and BCA (n=277, 71.9%) screenings. Women UTD on mammography were significantly more likely to be moderately interested in reading about COVID-19 (p=.023) and intended to get the vaccine (p=.002) (vs not UTD). Those UTD with CRC screening were significantly more likely to intend to vaccinate (p=.003) (vs not UTD). There was no association between CRC screening and interest in reading about COVID-19.

Conclusions: Results indicate individuals engaged in routine cancer screenings were interested receiving the COVID-19 vaccine, even at the time of this assessment when a vaccine

was not yet available. It is interesting that women not UTD with mammography reported little/no interest in reading about COVID-19 despite it being a major public health concern at that time. Future research should further explore the relationship between preventive behaviors and health-related information seeking on social media.

3

Characterizing Inquiries About Immunotherapy and Targeted Therapy: Findings from the National Cancer Institute's Cancer Information Service

Vanderpool RC, Huang G, Ng D, Mitchell SA

Background: Recent advancements in cancer treatment now include immunotherapy and molecularly targeted therapies. Immunotherapy treats cancer by augmenting the immune response (e.g., Chimeric Antigen Receptor T-cells, immune checkpoint inhibitors), whereas targeted therapies (e.g., small-molecules, monoclonal antibodies) impact proteins controlling the growth, proliferation, and survival of cancer cells. Although they are increasingly used to treat many forms of cancer, little is known about the public's information needs related to these unique therapeutic regimens.

Methods: NCI's Cancer Information Service (CIS) is a well-established, multichannel resource for cancer information in English and Spanish. To better understand inquiries about immunotherapy and targeted therapy from survivors, caregivers, and health professionals, we conducted a descriptive analysis related to these two treatments made to the CIS between September 2018-June 2023.

Results: Over the 5-year period, the CIS received 2,663 inquiries specific to immunotherapy and 909 inquiries related to targeted therapy from caregivers, survivors, and health professionals; annual inquiries about these treatments increased steadily across this timeframe. Of all immunotherapy and targeted therapy inquiries, caregivers inquired about each of these treatments most often (58.2% and 56.1%, respectively) compared to survivors and health professionals. Survivors (55.5%) and caregivers (43.4%) contacted the CIS by telephone more often, whereas health professionals had higher rates of email use (50.0%). The largest proportion of those inquiring about these two treatments were caregivers and survivors with firsthand experience with breast or gastrointestinal cancer. Immunotherapy and targeted therapy were most often discussed in the context of clinical trials (22.4% and 14.3%, respectively), treatment questions (14.9% and 21.2%), and queries about finding healthcare services (8.6% and 9.4%).

Conclusions: This exploratory analysis profiles survivors', caregivers', and health professionals' inquiries about immunotherapy and targeted therapy. Results may inform the development and tailoring of key messages and

resources to meet the needs of individuals searching for information about emerging cancer therapies.

4-T

Empathic Opportunities and Responses in Lung Cancer Patient-Provider Consultations

Torres TK, Jhaveri AV, Ostroff JS, Banerjee SC

Purpose: The current study examined empathic opportunities and responses during discussions about smoking between lung cancer patients and their oncology care providers (OCPs).

Methods: This study is part of a larger study on empathic communication skills training to reduce lung cancer stigma. For the current study, we analyzed 20 interactions between an OCP and a standardized patient (SP; i.e., a trained actor) who presented as a patient with a confirmed lung cancer diagnosis. The 20 OCP-SP interactions were video recorded and coded using the well-established Empathic Communication Coding System (ECCS). The ECCS classifies empathic communication at two levels: the empathic (patient) opportunity (3 types) and clinician response (8 hierarchical levels). OCPs' use of the ask-advice-refer (AAR) method was tracked on a continuous scale. Primary analyses evaluated the relationship between empathic opportunities and responses. Additional analyses explored associations between SP's initiation of empathic opportunities and OCPs' use of the AAR method.

Results: OCP participants were mostly female (n=25; 83%) and identified as either MD (n=8, 27%), NP/PA (n=11, 37%), or RN (n=11, 37%). ECCS coding of the 20 SPAs resulted in 82 pairs of SP opportunities and OCP responses. Challenging statements (n=40, 48.8%) were the most frequent empathic opportunities provided by SPs, followed by emotion (n=36, 43.9%) and progress (n=6, 7.3%) statements. OCPs' most frequently used empathic response was pursuit (n=27, 32.9%), and least frequently used was perfunctory recognition (n=5, 6.1%). Empathic responses did not differ by patients' empathic opportunities (p > .05). Additionally, during discussions about tobacco use, providers' use of smoking cessation referrals significantly differed amongst the three empathic opportunities ($F(2,79) = 5.49, p < .01$). Post-hoc analyses revealed that providers' use of refer was significantly greater for emotion (M=2.08) relative to progress (M=1.33) opportunities (p = .01, 95% CI = -3.54, -3.54).

Conclusion: Preliminary analyses of the 20 coded SPAs demonstrate that OCPs' responses (e.g., empathic responding and AAR method) are associated with lung cancer patients' initiation of certain empathic opportunities during smoking-related discussions.

5

Exploring Secondary Acceptance of HPV Vaccination among Vaccine-Declining Parents

Calo WA, Bufalini C, Christiansen E, Shah PD, Fogel B, Ruffin M, Moss JL, Hausman BL, Segel JE, Johnston N, Kraschnewski JL

Background: HPV vaccination prevents 6 types of cancers, but vaccine uptake remains suboptimal in the U.S. Parental declination is a major factor contributing to low HPV vaccine uptake, with around one third of U.S. parents of adolescents declining the vaccine every year. Interestingly, many parents who have initially declined HPV vaccination for their children, get the vaccine at a later visit, a phenomenon called "secondary acceptance." As part of a cluster randomized controlled trial (RCT) with 30 primary care clinics in Pennsylvania, we conducted an exploratory study to better understand secondary acceptance of the HPV vaccine.

Methods: Participants are the parents of adolescents ages 11-17 receiving primary care at Penn State Health clinics, and who received at least one dose of the Tdap or MCV vaccines but declined the HPV vaccine during the RCT period. Parents were invited to complete 5 online surveys through our secure, web-based REDCap platform at baseline (after parents declined HPV vaccination) and then, every 3 months for one year (3-, 6-, 9- and 12-month follow-ups). We recruited parents between February 2022 and October 2023. We summarize how many participants reported their willingness to talk with their child's provider about HPV vaccination at the next visit, willingness to get the vaccine at the next visit, and providers' communication approaches to revisit their vaccine declination.

Results: Using clinics' electronic health record systems we invited 1637 vaccine-declining parents, with 210 of them agreeing to participate in the study. We have had high levels of retention (82%-92%) throughout the follow-up surveys. Seventy-four percent of our sample are somewhat or very willing to talk about HPV vaccination again, and 42% reported being somewhat or very willing to get the HPV vaccine in the future. Only 32% of parents reported that their provider offered to revisit their HPV vaccine decision at the next visit.

Conclusion: For vaccine-declining parents, providers' follow-up may be important for promoting secondary acceptance of HPV vaccination, but less than one third of our sample said that their providers offered to discuss their decision in the future.

6

Feasibility and Acceptability of a Web-based Tool to Direct Head and Neck Cancer Caregivers to Resources

Nightingale CL, Miller DP, Levine BJ, Porosnicu M, Hughes RT, Dest A, Sterba KR, Yelton P, Kirkendall ES, Aguilar AA, Chandler A, Weaver KE

Purpose: To assess the feasibility and acceptability of a web-based tool (CONNECT: Caregiver Oncology Needs Evaluation Tool) for educating head and neck (HNC) caregivers, assessing their supportive care needs, and connecting them with needed resources.

Methods: Caregivers were eligible if providing unpaid care to a patient receiving cancer treatment for head and neck cancer. Caregivers were recruited (Sep 2020- Nov 2021) and randomized to CONNECT (completed at clinic or home) or a generic resource list comparison group. CONNECT includes an educational caregiving video and a needs assessment to create a tailored resource list for caregivers. CONNECT also includes an automatic referral option and a 2-week follow-up call to offer re-education and an additional referral opportunity. Assessments were completed before the intervention and at 1-month and 3-month follow-ups. Feasibility was assessed using participation and retention proportions and acceptability was assessed with qualitative interviews and study surveys (5-point Likert response scale from not at all helpful to extremely helpful).

Results: Forty caregivers (85% female; 70% married/partnered to patient) consented (37% participation proportion); 37 were randomized (1 deceased and 2 lost pre-randomization) to CONNECT (n=19) or the Generic Resource List (n=18). 81% of caregivers randomized were retained at 3-months. Most intervention caregivers rated each CONNECT component as somewhat/quite a bit helpful (68%-75%). Qualitative feedback supported acceptability; participants noted information provided was useful and easy to understand and helped them feel less alone and part of a community. Some caregivers reported difficulty with navigating web-based content. Recommended improvements included content wording, supplementary written materials about the website, and more one-on-one engagement.

Conclusions: Acceptability findings support future efficacy testing, particularly with recommended tool improvements. The COVID-19 pandemic introduced challenges with recruitment and intervention delivery, though participation and retention proportions are comparable to other caregiver interventions. Integration of one-on-one engagement such as a caregiver navigator may maximize intervention effects in a future trial.

7

Leveraging Mobile Health to Improve Oral Chemotherapy Adherence among Women with Breast Cancer: Evidence from a Pilot Randomized Trial

Graetz I, Hernandez S, Arshad S, Byers K, Meisel J, Sadigh G, Gogineni K, Torres M

Purpose: Oral therapies for cancer offer convenience without intravenous infusion, but present new challenges in safety and adherence, particularly for medications with complex dosing schedules. We conducted a randomized pilot trial to evaluate a mobile health intervention designed to remotely monitor capecitabine adherence and related symptoms among women with breast cancer.

Methods: Women with breast cancer prescribed adjuvant/palliative capecitabine, an oral chemotherapy with a complex, cyclical regimen, were randomized to usual care (UC) or an intervention arm. Both were followed for 90 days, completed a baseline and follow-up survey, and used a smart pill bottle to measure adherence (both timing and number of pills). The intervention group received text message reminders for missed or incorrect doses and weekly questions about capecitabine-related symptoms. Reported symptoms (severity 5+, range 0-10) and non-adherence (10%+ missed dose over 7 days) triggered alerts to the patient's oncology team. We evaluated the feasibility, acceptability, and usability among intervention participants and compared adherence and quality of life between the study arms.

Results: From December 2021 to May 2023, 32 women were randomized (17 UC and 15 Intervention): 25 (78.1%) completed the follow-up survey. Their mean age was 59 years, 56.3% were Black, 31.3% White, and 43.8% had stage IV cancer. Among UC, the average adherence rate was 77.7% (95% CI: 70.6 - 84.7) vs. 88.9% for the intervention arm (95% CI: 80.5 to 97.24, p=0.04). The intervention was associated with 6.5 points higher mental health quality of life (95% CI: 1.3 -11.6, p=0.02). Intervention participants replied to 83.3% of the symptom-monitoring text message questions, and most (70.7%) did not have symptoms. Among intervention participants who completed the follow-up survey (n=10), the average system usability score for the intervention was 73.8 (SD: 3.7).

Conclusion: For breast cancer patients prescribed capecitabine, a mobile health intervention using text message reminders for missed or incorrect doses, along with symptom monitoring, resulted in higher medication adherence and mental health. Intervention participants responded to most symptom questions and reported high satisfaction with the intervention.

8

More or Less Screening: Acceptability of Risk-Based Breast Cancer Screening in a Socially Diverse Cohort

Karr A, Lee Argov EJ, Tehranifar P

Purpose: Personalized breast cancer (BC) screening, focusing on individual risk, aims to optimize screening benefits-harm ratio. More efforts have focused on promoting more intensive screening in high-risk women, with limited exploration of reducing screenings for low-risk women. In a cohort enriched for racial and ethnic minoritized populations, we examined the overall acceptance of adapting BC screening frequency based on personal risk (risk-based screening [RBC]), and acceptability of more and less frequent screening if identified as high- and low-risk, respectively. We explored variation by sociodemographic, BC risk, screening-relevant factors.

Methods: We used data (n=210 to date) from an ongoing follow-up survey of a longitudinal screening cohort of women, aged 40-60 years, enrolled in 2016-2018 (70% Hispanic, 11% Black, 69% foreign-born; 40% high school or less education). We asked women "What do you think of the idea of varying the frequency of breast screening based on personal risk?" to assess the overall acceptance of RBS and asked separately about more and less frequent screening based on risk. We considered responses separately, combined across questions by summing the three responses (range: 1-13), and by categories of concordant (accepting of both more and less screening or neither approach) and discordant acceptability.

Results: 60% accepted varying screening frequency by personal risk and the rest reported "not sure" or "definitely/probably not" (20% each). Only 17% accepted both more and less frequent screening. 84% accepted more screening if high-risk, but only 20% accepted fewer screening if low-risk. Acceptance of more screening was high regardless of RBS endorsement (77-93%), while the endorsement for fewer screening was low even among those endorsing RBS (27%). We observed minimal differences by race/ethnicity and education, and no variation by risk factors including perceived BC risk, Gail model risk score, and first-degree family history of BC.

Conclusions: Increased screening is more acceptable than reduced screening irrespective of objective or perceived personal risk in primarily racial/ethnic minoritized and immigrant sample of women. Interventions need to address social acceptability of RBS alongside individual risk assessment.

9-T

Nourishing through Words: Formative Research to Design the Optimization of Adaptive Text Messages to Improve Nutrition for Cancer Survivors (OATS) Study

Williams CL, Kenfield SA, Chiu D, Piawah S, Montenegro E, Aguilera A, Philip E, Tang F, Hobby R, Loya Z, Lau K, Kuo M, Chan JM, Dixit N, Van Blarigan EL

Purpose: Colorectal cancer (CRC) is the 2nd-leading cause of cancer death in the United States. Despite evidence that a high-fiber diet rich in whole grains is associated with lower mortality among people with CRC, less than 15% of CRC survivors consume a high-fiber diet. Text messages are a promising intervention for reaching large, culturally diverse populations of CRC survivors.

Methods: In Phase I of the OATS study, we explored the capabilities, opportunities, and motivations for consuming whole grains and preferences for text messages about nutrition among CRC survivors. Informed by the Capability Opportunity Motivation -Behavior (COM-B) model, we conducted semi-structured interviews and focus groups among Asian, Black, Hispanic, and non-Hispanic White CRC survivors. Ethnically concordant interviewers and focus group leaders led sessions using Zoom or phone. All sessions were recorded, transcribed, and analyzed in Dedoose using structured and thematic coding.

Results: A total of 44 CRC survivors participated (26 interviews; 4 focus groups including 38 people). Participants had a median age of 62 years [interquartile range (IQR): 54, 67] and identified as: 23% Asian, 9% Black, 20% Hispanic, and 48% non-Hispanic White; 57% identified as female. The median time from diagnosis to enrollment was 5.5 years (IQR: 2.9, 8.1). Of the COM-B constructs, psychological capability emerged as a critical barrier to whole grain intake among CRC survivors. In contrast, physical capability was the COM-B construct mentioned the least as a limiting factor to consuming whole grains. The proposed text message intervention was well-accepted. Specific feedback from the participants included sending messages from a reliable source, distrust of links, and the desire to receive information beyond standard nutrition guidelines (e.g., interested in supplements, mushrooms, etc.).

Conclusions: This formative research provides valuable insights to improve the design of dietary interventions among racially/ethnically diverse cancer survivors. Participants are receptive to receiving and engaging in nutrition education provided via text messaging. Next steps of this work will be to study the impact of an adaptive text message intervention on CRC survivors' whole grain consumption.

10

Patient-Clinician Discussion for Clinical Trial as a Potential Cancer Treatment Option: Analysis of HINTS-SEER Data

Hong YR, Carrier A, Wang, R, Hu J, Islam J, Turner K

Purpose: Clinical trials for cancer test new treatments or combinations of treatments for different types and stages of cancer. This study sought to examine the patterns of patient-clinician discussion for clinical trials as a potential cancer treatment option and their participation among patients with cancer.

Methods: This study used data from the NCI's 2021 HINTS-SEER linked database collected from three SEER registries (Iowa, New Mexico, and California's Greater Bay Area). Self-reported cancer treatment trial discussions with clinicians and participation in trials were measured. Survey design-adjusted bivariate analysis was used to examine patient socioeconomic (e.g., age, sex, income) and clinical factors (e.g., cancer site, stage) associated with clinical trial discussion and participation.

Results: A weighted sample of 272,275 cancer patients was utilized for the study (mean age, 69.5 years; 54.8% women; 77.8% non-Hispanic White). Of those (15.1%) who reported having discussed a clinical trial with their clinicians, 50.3% participated in a clinical trial for their cancer treatment. Patients who were younger (<65 years old) and with family income less than $50,000 were more likely to engage in clinical trial participation discussions with clinicians. No racial/ethnic difference was observed. Patients with breast cancer (23.7%) or those with cancer in the male reproductive system (e.g., prostate) (22.9%) had higher participation than other cancer sites. Patients with advanced-stage cancer were more likely to participate in clinical trials compared to those with localized disease (23.7% vs. 4.4%, P=.004).

Conclusions: Among patients diagnosed with cancer in Iowa, New Mexico, and California, 15% reported having clinical trial discussions with their providers. Discussion and clinical trial participation as part of cancer treatment appears to differ by patient socioeconomic (younger, low income) and clinical characteristics (late stage). Further research is needed to ensure equitable opportunities for all patients to engage in clinical decision-making and to identify potential barriers to increasing recruitment for these trials.

11-T

Rise in Consumption of Informational Videos on Social Media Among Rural Adults: Opportunity for Improving HPV Awareness

Garg A, Nyitray AG, Roberts JR, Shungu N, Ruggiero KJ, Chandler J, Damgacioglu H, Zhu Y, Brownstein NC, Sterba KR, Deshmukh AA, Sonawane K

Purpose: With the advent and wide availability of broadband cellular network technology, the urban-rural 'digital divide' has narrowed making online health content more accessible to rural and underserved communities. Contemporary data on consumption of health information videos through social media among US adults by urbanicity/rurality is currently unavailable and its link with awareness of human papillomavirus (HPV) is not known.

Methods: We estimated and compared the prevalence of consumption of health-related videos on social media among urban and rural US adults between 2017 and 2022 using the Health Information National Trends Survey. Multivariable logistic regression models estimated the odds of HPV and HPV vaccine awareness between those who consumed versus did not consume health-related videos within the urban and rural groups. To gauge public interest in HPV-specific topics, we examined search volumes and related queries on YouTube (the largest video-sharing platform).

Results: In 2022, 59.6% of the US adults (152.3 million) watched health-related videos on social media, an increase of nearly 100% from 2017 to 2022. Prevalence increased among both urban (31.4% to 59.8%; P<.001) and rural (22.4% to 50.8% in 2022; P<.001) adults. In both urban and rural groups, the odds of HPV awareness were greater among adults who watched health-related videos on social media was nearly 2-fold higher compared to those who did not watch health videos. Similarly, the odds of HPV vaccine awareness among adults who watched health-related videos were >1.5-fold higher compared to their counterparts in the urban groups. On YouTube, the most popular queries were 'HPV vaccine', 'HPV men', and 'HPV vaccine side effects'.

Conclusions: The consumption of health-related videos on social media in the US increased dramatically between 2017 to 2022. Watching a health-related video on social media was associated with a greater likelihood of being aware of HPV and the HPV vaccine irrespective of urbanicity/rurality. This exploratory study supports the use of social media for improving HPV awareness in rural settings. Additional research studies are needed to identify social media strategies that can increase public awareness of cancer-related health topics.

12-T

Self-Sampling for Human Papillomavirus (HPV) Testing: Acceptability and Experiences in a U.S. Safety Net Health System

Parker SL, Amboree TL, Bulsara S, Daheri M, Anderson ML, Hilsenbeck SG, Jibaja-Weiss ML, Zare, M, Schmeler KM, Deshmukh AA, Chiao EY, Scheurer ME, Montealegre JR

Purpose. Self-sampling for human papillomavirus (HPV) testing is increasingly recognized as a strategy to expand cervical cancer screening access and utilization. Acceptability is a key determinant of uptake. This study assesses acceptability of and experiences with mailed self-sampling kits for HPV testing among underscreened patients in a safety net health system.

Methods. A nested telephone survey was administered between 2021-2023 to a sample (n=272) of the 2,268 participants enrolled in the Prospective Evaluation of Self-Testing to Increase Screening (PRESTIS) trial. Trial participants include patients of a safety net health system aged 30-65 years who were not up-to-date on screening. Participants were asked about barriers to provider-performed screening. Kit users and non-users were asked about their experiences.

Results. Prevalent barriers to provider-performed screening included perceived discomfort of pelvic exam (69.4%), being uncomfortable with male providers (65.4%), and embarrassment (57.0%). Among participants who reported using the mailed kit (n=164), most reported good experiences (84.8%). Most reported self-sampling as more/equally convenient (89.0%); less/equally embarrassing (99.4%); and less/equally stressful (95.7%) than provider-performed screening. Among kit non-users (n=43), reasons for not using the kit included forgetting about it (76.7%), preferring provider-performed screening (76.7%), and fearing cancer (67.4%).

Conclusions. PRESTIS trial participants generally had a positive experience with self-sampling for HPV testing. Increased comfort and reduced embarrassment/anxiety with self-sampling are relevant attributes as these were the most prevalent reported barriers to provider-performed screening. High acceptability suggests potentially high uptake when self-sampling for HPV testing receives regulatory approval and is available in safety net health systems.

13

"We have to be strong, even when we are weak": A Qualitative Inquiry of Sociocultural Influences of Stress among Black Women at Risk for Aggressive Breast Cancer

Jones SR, Maxton O, Huang H, Ng E, Sloan A, Moore JX, Bevel MS, Ledford CJW

Purpose. Black women between 18 and 49 years are at higher risk for early and aggressive forms of breast cancer (BC). Black women have a 42% increased risk of BC mortality compared to White women, as well as significantly higher occurrence of aggressive tumors, earlier onset of BC, longer treatment durations, and higher rates of recurrence. One cultural norm that may affect this disparity is the cultural expectation to manifest strength in face of adversity among Black women. This social phenomenon is likely a response to gendered racism and is potentially hazardous. It may be linked to negative health behaviors such as alcohol/tobacco use and poor nutrition, as well as delayed mammography screening. The present study was designed to understand the social and cultural stressors impacting cancer risk and risk behaviors among Black women.

Methods. For this phenomenology, we recruited Black women in the Augusta, Georgia region through health fairs and community events to participate in semi-structured qualitative interviews. Analysis followed the Sort and Sift, Think and Shift method. The present study was the first step in building a cohort of Black women in the American South.

Results. We completed interviews with 35 Black women, for 2089 minutes of recorded data. Researchers identified three overarching themes: 1) suppression of emotion in response to discriminatory treatment in the workplace, 2) overwhelming childcare responsibilities and concerns for single mothers, and 3) lack of guidance for positive decision-making for young Black women.

Conclusions. Black women describe substantial sociocultural and structural stressors that may increase their risk for developing cancer. Findings can inform interventions aimed at reducing modifiable health behaviors associated with cancer risk among Black women, as well as interventions for reducing the physiological impact of stress on Black women's health. Findings will inform a quantitative inquiry with this cohort to investigate perceived stress and physiological burden of stress, including the selection of validated scales for surveys administered during collection of biological measures for allostatic load calculation.

14

A Community-Partnered Approach to Identify and Address Locally Relevant Determinants of Cancer Screening in New York City

Chebli P, Sifuentes S, Jones L, McCready T, Kranick J, Charles K, Ravichandar R, Diaby K, Rodriguez S, Spurrell-Huss E, Gutnick D, Kwon SC, Grant C, Rapkin B, Trinh-Shevrin C

Purpose. Co-identify with community partners locally relevant determinants of cancer screening access in four neighborhoods in New York City (NYC) and co-develop community-driven dissemination products and collective action.

Methods. We conducted key informant interviews and focus groups and co-developed "community profiles" with our neighborhood action councils (NAC). Interviews and focus groups were led in participants' preferred language, either in-person or via Webex, and transcripts were analyzed in Dedoose by a team of eight coders. A framework analysis was conducted, informed by Warnecke's multilevel cancer disparities framework. Partner-led community profiles were developed as one dissemination product.

Results. We completed 24 key informant interviews and 17 focus groups with 109 participants across four neighborhoods in NYC. Common themes included: 1) limited awareness of cancer screening and relevant resources; 2) mistrust of healthcare, experiences of discrimination, and perceptions of poor quality of care; 3) economic stress (e.g., cost of living, cost of food, competing priorities that deemphasize health-seeking behaviors); 4) structural barriers to preventive behaviors (e.g., cost of insurance, insurability of immigrants, limited transportation, lack of safety, and food apartheid; and 5) limited investments in the neighborhood (e.g., infrastructure, social services). Unique themes across the different neighborhoods were related to population-specific issues, such as youths, older adults, and undocumented immigrants. The NACs developed community profiles informed by this data to outline neighborhood-specific needs as well as existing resources/assets that could be leveraged to address them. Consensus building sessions were held with the NACs to prioritize local issues and strategize on collective action.

Conclusions. Community-engaged problem identification and collective action are key to ensuring locally relevant interventions. Cancer screening outcomes cannot be dissociated from neighborhood context: community partners and members clarified locally relevant issues that can hinder access to healthcare. Next steps include planning for and implementing community-academic collective action strategies to ameliorate neighborhood contextual factors.

15

A Novel Use of Community Paramedicine to Address Rural/Urban HPV Vaccination Disparities

Kasting ML, Laily A, Head KJ, Usidame B, Zimet GD, Schwab Reese L

Purpose: To examine acceptability and trust of community paramedics (CP) as non-traditional health care providers to reduce rural/urban disparities in HPV vaccination in Indiana.

Methods: In 08/2023, we conducted a survey among adults (n=604) in Indiana focused on acceptability and trust of community paramedics to deliver HPV vaccination. We examined differences in HPV vaccination intent if recommended by a doctor vs. CP. All items used 5-point Likert-type response scales. We measured healthcare delivery acceptability of CP vs. other health care professionals with six-items (response options ranged from completely comfortable to completely uncomfortable). CP's vaccine administration acceptability was measured with 11-items, and trust in CP vs. physician was assessed using 2 separate 9-item scales. HPV vaccine hesitancy was measured with 9-items. We examined rural/urban differences using multivariable logistic regression models.

Results: Mean age was 45.9 years, and the largest percentage were women (52%), White (81.5%), and suburban (46%). When examining HPV vaccination recommendations, more participants indicated they would receive the HPV vaccine if it was recommended by a doctor (43.2%) than if it was recommended by a CP (36.4%; p<0.01). However, the majority of the sample agreed that CPs can give vaccines as safely as doctors (71%), and said they would be willing to see a CP for routine medical care (50%). Participants reported the highest comfort in receiving vaccines from nurses (M=4.6; range 1-5) and the lowest from dentists (M=2.8) with doctors, medical assistants, CPs, and pharmacists in the middle (M=4.5, 4.2, 4.0, and 3.7, respectively). While rural participants had higher HPV vaccine hesitancy than urban participants (p=0.01), there were no differences in CP trust (p=0.97) or acceptability (p=0.11) by geographic location. The association between HPV vaccine hesitancy and geographic location was no longer significant in multivariable models while controlling for age, race/ethnicity, and political views.

Conclusions: Overall, trust and acceptability of CPs was high in this population, regardless of geographic location. Given overall favorable attitudes, CP may be a promising avenue to address rural/urban disparities in HPV vaccination rates.

16

A Transdisciplinary Approach to Defining Mammographic Quality

Hackett KA, Pinsoneault LT, Chanen B, Cawthra TA, Thompson TN, Brunner EA, Johnson GD, Troy MK, Makris VR, Stolley MR, Neuner JM

Purpose: Breast cancer mortality rates and stage of diagnosis in Wisconsin continue to improve, but only for some. Inspired by learnings from a statewide mammography project in Illinois, the Mammographic Quality Initiative (MQI) studies the mammographic process in Wisconsin to understand factors that contribute to quality, create a shared measurement system to monitor and improve quality, and reduce disparities in early-stage diagnoses and breast cancer survival rates across Wisconsin.

Methods: MQI is a project of the Community and Cancer Science Network (CCSN) at the MCW Cancer Center that brings together transdisciplinary teams of academic medicine and non-academic members to develop new research and action agendas to address disparities. While building of shared measurement is not new, applying the CCSN transdisciplinary (TD) approach to mammography and defining what gets measured, is novel. MQI is using a multilevel model of transdisciplinary engagement. A statewide leadership team coordinates an initial study of mammographic quality and convenes regional learning collaboratives (RLCs) to examine quality and ways to improve. MQI teams are gathering data using multiple methods, including surveys and interviews with people receiving mammograms, literature reviews, and facilitated conversation with mammography experts, to help redefine mammographic quality and determine what indicators can and should be measured and used for quality improvement.

Results: Results show providers emphasize quantitative measures of technical aspects of mammography, while navigators and patients emphasize systems conditions and justice orientations that shape the breast cancer screening process from scheduling through diagnostics. Data demonstrate additional benefits and challenges to the application of the CCSN TD approach in mammography. For example, iterative data collection cycles challenge assumptions of what quality mammography means to various stakeholders, but there is lack of appreciation for the role of patient perspectives in informing how mammographic quality is defined.

Conclusions: Learnings highlight that we must consider multiple sectors' perspectives to build a complete definition and set of measures of mammographic quality.

17-T

An Analysis of Urban Indian Organizations' Promotion of Cancer Services

Hutton B Carson WO, Little AB, Monetathchi AR, Erdrich JE, Cordova-Marks FM

Purpose: To assess the range of cancer screening and cancer support services Urban Indian Organizations (UIOs) provide for urban American Indian/Alaska Native (AI/AN) populations.

Background: More than 70% of the AI/AN population in the United States lives in urban areas. The burden of cancer remains elevated for urban AI/AN in the United States with barriers such as access to screening and treatment. UIOs are an integral part of the IHS health care system as one-way urban AI/AN can receive culturally competent care. As a result, public facing information on UIO websites should provide prospective patients the information they need when choosing a provider.

Methods: This study consists of an assessment of forty-one official websites for Indian Health Service (IHS) funded urban health centers, Office of Urban Indian Health Programs. Out of the forty-one UIOs, thirty-four websites were identified as offering primary care services and analyzed based on: 1. services offered that assist in cancer prevention, 2. cancer screening, 3. cancer support services that focus on the Indigenous social determinants of health, such as patient navigation, and 4. Information and technology support.

Results: For cancer prevention and screening services, a majority of UIOs, 61.8% (n=21), directly list offering these services on their websites and another 17.6% (n=6) list referrals to outside healthcare facilities. In addition, 29.4% (n=10) of UIOs offered on site and 50% (n=17) mentioned providing referrals to other facilities for diagnostics (labs and x-rays). For support services, we found that 44.1% (n=15) of UIOs offered cancer patient navigation services and 44.1% (n=15) promoted insurance navigation services (non-cancer specific). Lastly, 55.9% (n=19) of the UIOs had updated their websites within the last year.

Conclusions: The findings of this study are intended to be an overview of the services and programs UIOs provide from the patient perspective. The majority of UIOs have information that provides patients with important information but not all, and more so, slightly less than half had not updated their websites in the past year. UIOs and their patients may benefit from updating public facing websites with new information on prevention, screening, and support programs.

18-T

Assessing and Attenuating the Impact of Selection Bias on Spatial Cluster Detection Studies

Boyle JR, Ward MH, Cerhan JR, Rothman N, Wheeler DC

Introduction: Spatial cluster analyses are commonly used in epidemiologic settings with case-control data to detect whether certain areas in a study region have an excess of disease risk. Case-control studies are susceptible to potential biases including selection bias, which can result from non-participation of eligible subjects in the study. However, there has been no systematic evaluation of the effects of non-participation on the findings of spatial cluster analyses.

Purpose of the study/Methods: In this paper, we perform a simulation study assessing the effect of non-participation on spatial cluster analysis using the local spatial scan statistic in many scenarios, including location and rates of non-participation and presence and intensity of a zone of elevated risk for disease.

Results: We find that geographic areas of lower participation among controls can greatly inflate false-positive rates for identification of artificial spatial clusters. Additionally, we find that even modest non-participation outside of a true zone of elevated risk can decrease spatial power to identify the true risk zone. We then propose a spatial algorithm to correct for potentially spatially structured non-participation that compares the spatial distributions of the observed sample and the underlying population. We then demonstrate its ability to markedly decrease false positive rates in the absence of elevated risk and resist decreasing spatial sensitivity to detect existing zones of elevated risk. We apply our method to a case-control study of non-Hodgkin lymphoma.

Conclusion: Our findings suggest that greater attention should be paid to the potential effects of non-participation in spatial cluster studies, and we provide additional recommendations to limit non-participation.

19

Assessment of Cervical Cancer Screening Knowledge, Awareness, and Practices among Tribal Healthcare Staff

Sieloff, BI, Kizza F, Gartner DR

Purpose: To develop a replicable tribal/academic partnership model for assessment of community-wide cervical cancer screening practices and preventive care barriers among healthcare staff employed at Tribal Health Systems and Urban Indian Health Organizations (UIO).

Methods: Through the collaboration and commitment to the practice of the Inter-Tribal Council of Michigan (ITCM) and researchers at Michigan State University (MSU), mutual concerns regarding the undue cancer burdens experienced by Michigan's Indigenous peoples were identified. ITCM and MSU designed an online survey tool that assessed four domains: (i) cervical cancer and screening knowledge & practices, (ii) screening guidelines referenced, (iii) perceived screening successes and (iv) patient and health system barriers to screening. ITCM distributed the survey to medical directors, clinic supervisors, and other health system staff via email and flyer for wider dispersion. We used descriptive statistics to summarize each survey question, generalized multilevel regression models to analyze data overall, and then by tribe and professional role to look for potential groups to target for intervention. Results from the survey were used to identify gaps in knowledge and inconsistencies in practice that, in turn, informed the ongoing cancer prevention efforts of the ITCM.

Results: Two-hundred seven staff representing healthcare providers, therapists, community health, clinic support staff, lab technicians, and leadership from 8 Tribes or UIOs completed the survey. An infographic was designed and shared with Tribal Medical Directors, that summarize study results and was used to elicit conversation regarding future interventions.

Conclusions: This project demonstrates that with very few financial resources and a readily available survey tool (contact authors for a copy), gaps in knowledge and areas for improvement to increase cervical cancer screening uptake in tribal settings can be easily identified. Ultimately, we hope this model will inform intervention efforts to raise cervical cancer awareness and reduce the unnecessary toll cervical cancer exacts across Indian Country.

20

Associations between Ethnic Enclave Residence and Late-Stage Breast Cancer Diagnosis among Asian American Women

Shariff-Marco S, Lin K, Canchola AJ, Meltzer D, Rathod AB, Shahan KL, Boscoe FP, Henry KA, Hiatt RA, Hughes AE, Pinheiro PS, Stroup AM, Zhu H, Gomez SL, Pruitt SL

Purpose: Asian American women have low breast cancer screening rates which may contribute to later stage of diagnosis. Yet, few studies have investigated multilevel factors associated with late-stage diagnosis among Asian American women. We examined associations between ethnic enclave residence (more culturally distinct neighborhoods) and late-stage diagnosis with registry data across 4 states (CA, NJ, NY, and TX) with large and growing Asian American populations.

Methods: Among 81,172 women diagnosed with breast cancer, 2000-2017, we assessed late stage (regional and distant) and early stage (in situ and localized) disease. We defined ethnic enclave using principal component analysis on Census/American Community Survey data at census tract-level (% Asian American, % foreign-born Asian American, % limited English proficiency and % linguistically isolated households speaking Asian languages) pooled across 4 states and categorized into quintiles (Q): Q1 represents the least and Q5 the most culturally distinct neighborhoods. We used log binomial regression accounting for clustering by tract with robust standard errors to examine the association between stage at diagnosis and neighborhood enclave status.

Results: Among Asian American women, 26% were Chinese American, 15% lived in high poverty census tracts, 63% resided in enclave neighborhoods, and 28% had late-stage diagnosis. In multivariable analysis with age, year, state, Asian ethnicity, insurance, census tract poverty, and residence in non-metropolitan areas and ethnic enclaves, compared to Chinese American cases, all ethnicities except for Japanese Americans had increased late-stage diagnosis risk, with Asian Indian/Pakistani American women having the highest risk (relative risk (RR) 1.33, 95% confidence interval (CI) 1.28-1.38). Those in high poverty tracts had increased late-stage diagnosis risk (RR 1.06, 95% CI 1.03-1.10). Women in the least culturally distinct neighborhoods (low enclave) had increased late-stage diagnosis risk (RR 1.05, 95% CI 1.01-1.10 for Q1&Q2 combined (low enclave) compared to Q5 (high enclave); p-trend=0.04).

Conclusions: Residing in ethnic enclaves may facilitate access to culturally and linguistically relevant healthcare resources and communication/messaging.

21-T

Better Dietary Quality is Associated with Improved Survival for Black Women with High-Grade Serous Ovarian Cancer

Tsion A, Bandera EV, Johnson C, Peres LC, Haller K, Terry P, Akonde M, Peters ES, Cote ML, Hastert TA, Epstein M, Marks J, Bondy M, Lawson AB, Alberg AJ, Schildkraut JM, Qin B

Background: Ovarian cancer has a poor survival rate, and survival for Black women is worse relative to White women. Therefore, identifying modifiable factors that will improve ovarian cancer survival is imperative. To our knowledge, this is the first study to examine the associations between dietary patterns, assessed by the Healthy Eating Index-2020 (HEI-2020) and the Alternative Healthy Eating Index-2010 (AHEI-2010), and survival among Black women diagnosed with epithelial ovarian cancer.

Methods: Analysis was conducted among 486 ovarian cancer participants from the multi-site, population-based African American Cancer Epidemiology Study (AACES) diagnosed between 2010 and 2015. Dietary pattern scores were calculated using dietary information from the validated Block Food Frequency Questionnaire reflecting a year prior to diagnosis. The HEI-2020 has 13 components (score range: 0-100), and the AHEI-2010 has 11 components (score range 0-110); higher scores indicate better dietary quality. Cox proportional hazard regression models adjusted for potential confounders were used to estimate hazard ratios (HRs) and 95% CI for the associations between dietary pattern scores and survival among all patients and those with high-grade serous ovarian cancer (HGSOC). Analyses were further stratified by obesity status.

Results: During a median follow-up of 4.9 years, a total of 312 deaths were identified. Participants had a mean (SD) score for HEI-2020 and AHEI-2010 of 67.8 (9.5) and 53.1 (10.2), respectively. There was no association observed between dietary patterns and survival among women overall. Among women with HGSOC, those with higher HEI scores had a lower risk of mortality (quartile [Q4] vs. Q1: HR=0.66, 95% CI: 0.45, 0.95, p-trend=0.04). Similar results were found with AHEI-2010 scores (HRQ4 vs. Q1=0.66, 95% CI: 0.45, 0.97, p-trend=0.13). The associations between higher HEI scores and lower mortality risk were only observed among non-obese patients (HRQ4 vs. Q1=0.57, 95% CI=0.33, 0.98, p-trend=0.09).

Conclusions: Higher dietary quality is associated with lower mortality in Black women with the most lethal form of ovarian cancer, HGSOC. This suggests better dietary quality, as a modifiable factor, may improve ovarian cancer survival.

22-T

Breast, Colorectal and Prostate Cancer Incidence among Filipino Americans by Generational Status in the Multiethnic Cohort Study

Abe JV, Legaspi J, Guillermo C, Hernandez BY, Wilkens LR, LeMarchand L, Maskarinec G

Purpose: Filipino Americans are the largest Asian group in Hawaii and almost 50% of Hawaii's immigrant population are from the Philippines. This study investigated the incidence of breast, colorectal and prostate cancer by generational status.

Methods: Filipino ancestry was identified according to self-reports by questionnaire. Generation was defined as follows: 1st: both parents born in the Philippines; 2nd: one parent born in the US and one in the Philippines; and 3rd or more: both parents born in the US. Linkage to statewide Hawaii and California cancer registries identified 375 breast, 249 colorectal, and 436 prostate cancer cases. Cox proportional

hazards models were applied to calculate hazard ratios (HR) and 95% confidence intervals for the three cancer sites by generational status. All models were adjusted for age at cohort entry, family history, BMI, smoking status and education. In addition, site-specific covariates, e.g., physical activity, chronic conditions, medications, dietary and reproductive factors, were also included as appropriate.

Results: Of the 10,495 participants who self-reported any Filipino ancestry, 26.8% were of mixed ancestry; 58% were 1st, 17% 2nd, and 25% 3rd generation. Compared to the 1st generation, colorectal cancer showed a significant higher incidence in the 2nd and 3rd generation with respective HRs of 1.43 (95%CI 1.04, 1.98) and 1.76 (95%CI 1.29, 2.38), but the association was attenuated and lost significance after adjustment for relevant covariates. In sex-stratified models, the association were primarily seen in men. Breast cancer incidence was significantly elevated in the 3rd vs. 1st generation (HR=1.37, 95%CI 1.02, 1.85) even in the fully adjusted model, whereas little difference by generational status was observed for prostate cancer incidence.

Conclusion: In this prospective analysis, the higher risk for colorectal cancer in US vs. Philippine-born MEC participants may be due to changing risk factor profiles, whereas breast cancer incidence remained elevated in fully-adjusted model. These differences in incidence by generational status, may be due to acculturation and/or screening.

23-T

Colonoscopy Follow-Up to Abnormal FIT in a Large Federally Qualified Health Center: Results from a Patient Navigation Study (PRECISE)

Gautom P, Petrik AF, Thompson JH, Slaughter MT, |Rosales AG, Mosso L, Hussain SA, Coronado GD

Purpose: Colonoscopy follow-up to abnormal fecal immunochemical testing (FIT) is vital to increase chances of survival from colorectal cancer (CRC), yet rates of follow-up are low among patients in federally qualified health centers (FQHCs). Using chart abstracted data from a FQHC, we tracked the steps in the colonoscopy completion pathway.

Methods: The PRECISE study was a randomized controlled trial to test the effectiveness of providing patient navigation (PN) to promote follow-up colonoscopy after abnormal FIT in a large FQHC based in Washington state. We report the results of chart reviews from 970 PRECISE patients, randomized to PN or usual care, who had an abnormal FIT to determine receipt of colonoscopy. Two abstractors completed all the chart reviews; a third abstractor reviewed disagreements. The reviews were completed using electronic health records (EHR) and reports were requested from gastroenterology (GI) clinics when needed.

Results: Of the 970 patients with an abnormal FIT, 93% (917) were referred to GI for a colonoscopy. Of the referred patients, approximately 36% completed a pre-procedure consultation with the GI. Most consultations were done in person (64%) or by phone (17%). About 55% (502) of the referred patients completed a colonoscopy within 18 months of the abnormal FIT. Reasons for non-completion included the inability to reach the patient (61%), patient declined (8%), or the patient had other medical needs (6%). Patients were referred to 73 GI clinics in 31 cities. Nearly 90% of the completed colonoscopies had reports (procedure and pathology, if applicable) available in the EHR, thus, reports were requested for 10% of patients. About 36% of completed colonoscopies had normal results, low risk adenomas were found in 50% of patients, 36% of patients had diverticulitis, and 15% of patients had high risk adenomas. CRC was found in ten patients, of which seven were referred to oncology or surgery.

Conclusions: Examining the follow-up colonoscopy process for patients in FQHCs can identify areas of improvement in PN programs. The high number of GI clinics can cause confusion when returning results, thus, further refining processes with GI clinics could provide better information for appropriate follow-up and future screening.

24-T

Comparing Patient, Provider, and Healthcare Personnel Perspectives on Barriers to Care among Rural Endometrial Cancer Patients: A Qualitative Study

Taffe BD, Biru B, Albright B, Leak Bryant A, Leeman J, Wheeler SB, Petermann V, Spees LP

Purpose: To identify and compare patient, provider, and healthcare personnel perspectives on determinants of treatment for rural patients with endometrial cancer (EC).

Methods: We conducted semi-structured interviews with 10 EC survivors residing in rural counties of North Carolina (NC), 28 providers (e.g., gynecologic oncologists, nurses, pharmacists, social workers, and pastors), and 4 healthcare administrators who provide services to EC patients. Participants represented 3 large, geographically diverse, integrated healthcare systems located across NC. An interview guide was developed to examine the treatment process and investigate barriers to EC treatment. Initial codes were derived from an adapted multi-level conceptual framework of rural cancer control, and a thematic approach was used to analyze participant interviews.

Results: Patients, providers, and healthcare personnel reported overlapping and unique determinants of EC treatment. All groups cited travel distance and transportation as a key barrier to EC care. Patients described strong social support and positive patient-provider communication as facilitators of EC care. In contrast, providers and healthcare personnel felt that patient-provider communication was a barrier to care since rural patients have lower health literacy and are less likely to fully understand their diagnosis or treatment complications. Providers and healthcare personnel reported that patient fear and anxiety often impeded treatment. All groups mentioned the use of supportive resources such as gas cards, subsidized lodging, and insurance coverage. Patients described logistical barriers they faced when accessing these resources, such as uncertainty about who to ask for assistance and provider referral requirements. Providers and healthcare personnel cited having limited and insufficient resources to meet patients' needs as a barrier to EC care, and providers frequently described a reliance on other healthcare personnel to help patients access resources.

Conclusion: Patients, providers, and healthcare personnel identified different barriers to care for rural EC patients, substantiating the need to incorporate diverse perspectives when developing interventions to increase access to EC care.

25-T

Competing Subsequent Invasive Breast Cancer Risks in Women after Ductal Carcinoma in Situ by Race and Ethnicity: A SEER-based Analysis from 2000 to 2020

Koric A, Liu Y, Jiang S, Colditz G

Background: Studies that assessed the risk of invasive breast cancer (IBC) after ductal carcinoma in situ (DCIS) focus primarily on the risk of ipsilateral breast events. The contribution of competing breast events to risk is unclear/poorly understood.

Objective: To quantify the risk of subsequent invasive breast cancer at least six months after DCIS, accounting for competing breast events, by race and ethnicity.

Methods: A cohort of 205,111 women diagnosed with the initial unilateral DCIS between 2000 and 2020 were identified from the US National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER). Cox proportional hazard ratios (HRs) and 95% confidence intervals (CI) were used to assess the overall race related risks of IBC. The subdistribution hazard ratios (sHRs) and 95%CI were used to assess laterality and cancer subtype (estrogen-receptor (ER+) or progesterone-receptor (PR+) overexpressing tumors and ER- and PR- expressing tumors) specific subsequent IBC risks, by race and ethnicity.

Results: A total of 12,810 (6.0%) women were diagnosed with subsequent IBC after DCIS. The median time to subsequent IBC was 5 years. Non-Hispanic Black women had an elevated risk of IBC overall (HR = 1.34, 95% CI 1.22, 1.47) and IBC specific cancer subtypes (HR = 1.25, 95%CI 1.13, 1.39 for ER+/PR+ IBC and HR = 1.93, 95%CI 1.54, 2.40 for ER-/PR-IBC) when compared with non-Hispanic White women. By laterality, when compared with Non-Hispanic White women, Non-Hispanic Black women had a higher risk of all subsequent ipsilateral (the same breast as the original DCIS) IBCs (sHR = 1.66, 95%CI 1.36, 2.01). Non-Hispanic Black women had a higher risk for Ipsilateral ER/PR+ IBC subtype (sHR = 1.66, 95%CI 1.36, 2.01), while Hispanic women had an elevated risk for ER/PR- IBC (sHR = 1.78, 95%CI 1.19, 2.67) than Non-Hispanic White women. Non-Hispanic Asian women had an elevated risk of contralateral ER/PR- IBC subtype.

Conclusion: These contemporary US data reflecting diagnosis and treatment patterns since 2000 show an elevated bilateral risk of IBC after DCIS. These findings also indicate that there are still opportunities to enhance preventive strategies aimed at women who are at risk for subsequent IBC after DCIS across racial and ethnic groups.

26

Correlation between Residential Segregation and Environmental Justice Index at the Census Tract Level in the U.S.

Zhang L, Meggett K, Du R, Wu Y, Griffin S, Yabroff KR, Han X

Background: Residential segregation is a structural risk factor for poor health outcomes. The newly developed Environmental Justice Index (EJI) is the first place-based nationwide index measuring environmental burden, social vulnerability, and health outcomes at the census tract level in the U.S. This study examines the correlation between residential segregation and Environmental Justice Index at the census tract level in the U.S.

Methods: Using data from the 2019 American Community Survey five-year estimates, residential racial and economic segregation was measured by the Index of Concentration at Extremes (ICE), demonstrating spatial social polarization within a given area. The ICE ranges between -1 (most deprived) and 1 (most privileged). The overall EJI score, as well as scores from its individual domains including environmental burden (air pollution, proximity to hazardous & toxic sites, built environment, transportation infrastructure, and water pollution), social vulnerability (racial/ethnic minority status, socioeconomic status, household characteristics, and housing type), and health outcomes (prevalence of asthma, cancer, high blood pressure, diabetes, and poor mental health) were collected between 2014 and 2021 by the Centers for Disease Control and Prevention and released in

2023. A higher EJI score indicates a greater environmental, social, or health burden. As all variables were continuous, Pearson correlation coefficients (r) were used to quantify the linear correlations.

Results: A total of 71,622 census tracts were included in the analysis. We identified a strong correlation between the ICE and the EJI overall score (r=-0.74; P<0.0001). The correlation of the ICE with the three domains were -0.25 for environmental burden, -0.65 for social vulnerability, and -0.59 for health outcomes, respectively (all P<0.0001). Specifically, the ICE was strongly correlated with socioeconomic status (r=-0.81) and prevalence of poor mental health (r=-0.73), asthma (r=-0.69), and diabetes (r=-0.71) (all P<0.0001).

Conclusion: Residential segregation was strongly correlated with the Environmental Justice Index at the census tract level in the US. Highly segregated neighborhoods had greater environmental, social, and health burden than integrated neighborhoods.

27

Disparities in Cardiovascular Disease Risk among Older Asian, Native Hawaiian, and Pacific Islanders Lung Cancer Survivors in a Population-based Cohort

Pan Y, Chang CE, Tao R, Daud A, Shen J, Wong ND, Nianogo RA, Rao J, Varghese T, Zhang Z, Hashibe M

Purpose: Disparities in adverse health outcomes for lung cancer patients who are Asian, Native Hawaiian and Pacific Islander (ANHPI) are understudied. We investigated potential disparities in CVD risk among ANHPI and Non-Hispanic White (NHW) lung cancer survivors.

Methods: A total of 3,920 ANHPI and 11,760 NHW lung cancer patients were identified from the Surveillance, Epidemiology, and End Results (SEER)-Medicare data from 1999 to 2017. Cox proportional hazards models were used to estimate hazard ratios (HRs) for the risk of incident CVD events (heart failure, ischemic heart disease, stroke/transient ischemic attack) to compare overall ANHPI or ANHPI subgroups to NHW lung cancer patients, adjusting for cancer registry, sex, diagnosis year and diagnosis age of lung cancer.

Results: Compared to NHW lung cancer patients, ANHPI lung cancer patients had a lower risk of heart failure (HR, 0.64, 95% CI, 0.53-0.76) and ischemic heart disease (HR, 0.76, 95% CI, 0.60-0.95). Among ANHPI subgroups, Chinese, Japanese, Vietnamese and other Asian lung cancer patients had lower risks of heart failure than NHW lung cancer patients. For comparisons within ANHPI subgroups, Filipino (HR, 1.61, 95% CI, 1.21-2.15), Indian or Pakistani (HR, 2.15, 95% CI, 1.34-3.46), Pacific Islander (HR, 2.52, 95%

CI, 1.33-4.77) and other Southeast Asian (HR, 2.47, 95% CI, 1.24-4.91) lung cancer patients had a higher risk of heart failure than Chinese lung cancer patients. Indian or Pakistani (HR, 1.76, 95% CI, 1.05-2.96) lung cancer patients also had a higher risk for ischemic heart disease than Chinese lung cancer patients.

Conclusions: Compared with NHW lung cancer survivors, we observed a lower risk of heart failure and ischemic heart disease among ANHPI lung cancer patients. However, within ANHPI subgroups, Indian or Pakistani lung cancer patients had a higher risk of these two CVD conditions compared to Chinese lung cancer patients. Filipino, Pacific Islander and other Southeast Asian lung cancer patients had higher risks for heart disease compared to Chinese lung cancer patients. Disaggregation of ANHPI subgroups is critical in elucidating disparities in outcomes for lung cancer survivorship.

28
Drivers of Geographic Variation in Cancer Screening within the Military Health System

Segel JE, Luan W, Berge A, Miller D

Purpose: Ensuring access to breast and cervical cancer screening is a priority for the Military Health System (MHS), which covers over 9 million active duty service members, retirees, and their dependent families. However, there is notable geographic variation in screening rates. Our goal is to estimate the potential drivers of this variation, while taking advantage of the random nature of where service members and their families are located through the moves that result from a permanent change of station (PCS).

Methods: We used 2007-2019 Military Health System Data Repository (MDR) data. We limited our sample to continuously enrolled female TRICARE enrollees eligible for mammography or Pap testing. We examined changes in screening rates following a PCS as well as changes in screening rates when moving from low screening to high screening areas or vice versa. Finally, in unadjusted and adjusted analyses we used enrollee moves to calculate the relative importance of individual (e.g. screening preferences) vs. place factors (e.g. provider practices, availability using an established approach from Finkelstein et al. Adjusted analyses controlled for age, marital status, family size, rank, years of service, service branch, and Elixhauser comorbidity index.

Results: Our mammography sample included 159,840 eligible individuals, with 70.1% screening prior to a move and 67.9% after. For the 180,484 women in the Pap testing sample, 62.9% screened prior to a move and 49.6% after. For both mammography and Pap testing, we found that over 90% of the geographic variation in screening was due to "place-based" factors. In addition, we found a clear

gradient that women moving from lower (higher) screening catchment areas to higher (lower) screening catchment areas experienced significant increases (decreases) in their rate of screening, which is further consistent with the importance of place-based factors. Results were similar when including retirees and dependents of retirees.

Conclusions: Place-based factors appear to be the main driver of geographic variation in breast and cervical cancer screening in the MHS. Understanding which factors (e.g. physician practice, patient outreach, etc.) drive these is important to improving cancer screening across the MHS.

29
Effects of Intersectionality on Mammogram Screening on a Racially and Ethnically Diverse Group of Women with Intellectual Disabilities

Arana-Chicas E, Carroll-Scott A, Lee N, Massey PM, Klassen AC, Yudell M

Introduction: Women with intellectual disabilities (ID) have lower mammogram rates compared to women without ID and are diagnosed with breast cancer at more advanced stages. The intersection of multiple marginalized identities may place this population at a disadvantage for cancer screening. Women with ID have two intersecting marginalized identities (women and ID), while those who identify as Black and/or Hispanic have a third marginalized identity that may further adversely impact screening for breast cancer. This study explores the added effect of race/ethnicity on breast cancer screening in an already marginalized population.

Methods: Women with ID (n=95; n=44 Black, n=33 NHW, and n=18 Hispanic) ages 40 and older were recruited into this study. Mammogram medical record data was obtained from all participants from 2010-2013. Chi-square tests were run to explore relationships between race and ethnicity and mammogram receipt.

Results: Most participants were non-Hispanic White (46%), mean age was 49 (SD=6.3; range=40-69), 62% lived in a state-owned group home, and 70% had a mild or moderate ID impairment severity. From 2010-2013, on average, NHW women with ID completed 3.2 mammograms, Hispanic women with ID completed 2.8 mammograms, and Black women with ID completed 2.3 mammograms, although these findings were not statistically significant (p=0.540).

Conclusion: Women with ID who identify as Black or Hispanic have lower rates of mammogram screening than NHW women with ID. This may be due to additional barriers to cancer care that may adversely impact breast cancer screening (e.g., discrimination, lack of transportation). The use of an intersectionality lens as a future research framework will facilitate a more multidimensional and holistic approach

to the care of women with ID. Using a siloed approach can result in less patient-centered care and is insufficient when applied to the lived, complex experiences of women with ID who often have multiple marginalized identities.

30
Effects of Rurality, Race, and Ethnicity on HPV and COVID-19 Vaccine Hesitancy Among Young Adults in the Western United States

Aanderud Tanner H, Christini KA, Teames C, Mann S, Radloff C, Davis N, Coronado GD, Petrik A, Chang C, Kepka DL

Background: Human papillomavirus (HPV) infection is responsible for about 80% of cases of genital cancers in the United States. However, only 47% of young adults in the U.S. ages 18-26 years have received one or more doses of the HPV vaccine despite their eligibility. We sought to understand differences in HPV vaccine hesitancy among young adults by socio-demographic characteristics such as rurality, gender, race, and ethnicity in the western U.S.

Methods: Young adults across 12 western U.S. States in 2020-2021, during the era of COVID-19, self-reported to an online survey in rural and urban communities. We assessed vaccine hesitancy scales that were created from this online survey of young adults using factor analysis. These scales were evaluated by rurality, gender, race and ethnicity for odds of vaccine hesitancy using logistic regression. Race and ethnicity, rurality, and gender were examined as the main exposures of interest. Vaccine hesitancy was measured by a series of survey questions regarding HPV infection and HPV vaccination. Factor analysis was utilized to create coarse factor scores for three scales of vaccine hesitancy: HPV vaccine confidence, HPV infection complacency, and HPV vaccine complacency. Intent to vaccinate against COVID-19 was also assessed.

Results: Participants (N=2,937) were young adults (ages 18-26 years). Hispanic young adults had higher odds of HPV vaccine hesitancy across all three scales, compared to non-Hispanic White/Caucasian young adults: HPV vaccine confidence (OR=1.55 [95%CI:1.23-1.96]), HPV infection complacency (OR=1.53 [95%CI:1.22-1.93]), and HPV vaccine complacency (OR=1.28 [95%CI:1.01-1.61]). Rural young adults were more likely than urban young adults to have high vaccine hesitancy in the domains of confidence (OR=1.66 [95%CI: 1.37, 2.01]) and HPV vaccine complacency (OR=1.79 [95%CI:1.48-2.17]). Rural Hispanic young adults also had lower odds of COVID vaccination intention compared to urban Hispanic young adults (OR=0.57 [95%CI: 0.38, 0.87]).

Conclusion: Rurality and Hispanic race/ethnicity are correlated with increased levels of HPV vaccine hesitancy. Rural Hispanic young adults have higher levels of HPV and COVID vaccine hesitancy than urban Hispanic young adults. Targeted interventions are needed.

31-T
Examining Health Resources and Health Perspectives among Asian Communities in St. Louis, Missouri

Martin-Giacalone B, Huang G, Wang T, Castuciano R, Gu J, Martin-Giacalone K, McMurtry C, Lin S

Purpose: No study has explored how factors related to racial identity and residential environment shape the health experiences of Asian or Asian American ("Asian") communities in St. Louis; this knowledge is critical for developing culturally and locally informed strategies to improve racial equity in cancer care.

Methods: This project consisted of two phases: 1) asset mapping, in which we identified and mapped existing cancer and health-related assets (i.e., community organizations, social services, health clinics) for Asian communities in St. Louis; and 2) a focus group of Asian residents of St. Louis and St. Louis County, in which we examined participant perspectives on health and health-related resources.

Results: We identified 67 organizational assets providing services to the Asian community in St. Louis and St. Louis County. The largest service category was cultural or arts organizations (47%), followed by organizations focused on health (19%), education (13%), advocacy/civic engagement (9%), economic/business development (8%), and social services (4%). None of the health-focused or social service assets included organizations whose primary mission included cancer services or cancer education. We identified several important themes from the focus group. First, participants shared how experiences of interpersonal racism impacted their health as both children and adults residing in St. Louis. Second, participants emphasized the importance of having providers who understood anti-Asian racism, shared similar ethnic backgrounds, and provided language-concordant services. Finally, participants identified barriers to healthcare access including lack of awareness of health-related resources, lack of universal health care, and transportation-related barriers.

Conclusions: This exploratory study identifies and describes health assets and perspectives of Asian residents in St. Louis City and County. We found that there were no resources primarily focused on providing cancer prevention, control, or awareness to Asian residents in this region, and Asian residents faced significant barriers to accessing healthcare including insurance and knowledge. These findings provide an understanding of the needs related to cancer health equity research for this population.

32-T

Examining the Impact of Healthy Food Cost and Accessibility on Nutrition Security Status and Food Choice Behaviors among Postmenopausal African American Breast and Endometrial Cancer Survivors

Burton A, Rivers D, Abdul-Hameed Z

Purpose: Although African American women have slightly lower incidence rates of breast and endometrial cancers compared to White women, they have disproportionately higher death rates and lower overall 5-year relative survival rates for breast and endometrial cancers. Scientific literature continues to demonstrate the beneficial impact of lifestyle modifications, such as diet, on overall health and in reducing recurrence of breast and endometrial cancers. Even so, more research is needed to identify and fully understand how certain structural and social barriers impede cancer survivors' ability to maintain a healthy diet. The purpose of this study is to examine how cost and food accessibility influence food choice behaviors and nutrition security status among low-income, obese, postmenopausal African American breast or endometrial cancer survivors.

Methods: Sixty African American women (50+ years of age) diagnosed with breast or endometrial cancer between 2018-2020 were recruited to participate in online focus groups. The focus groups included a series of open-ended questions assessing participants' experience with breast or endometrial cancer, including any changes in diet and physical activity. Focus Group participants were later surveyed to quantitatively assess their healthy food expenditures and nutrition security status, including their perceptions and knowledge of healthy food options and accessibility of nutritious foods.

Results: Preliminary findings suggest that African American breast and endometrial cancer survivors have attempted to adopt a healthier lifestyle through a plant-based diet. However, cost serves as a major barrier, as many survivors from this study population feel that plant-based diets are too expensive and not easily accessible. We anticipate that these results will give further insight into how cancer survivors navigate challenges in acquiring nutritious foods.

Conclusion: Additional studies are needed to further explore the multi-level factors impacting nutritious food access and overall health status of African American breast and endometrial cancer survivors.

33-T

Examining the Perspectives of Healthcare Teams on the Implementation of a Hospital-Based Food Prescription Program for Cancer Patients in Safety Net Settings

Laffoon KM, Raber M, Baum ML, Vazquez MV, La Rue D, Ma H, Ho-Pham T, Rechis R, Basen-Engquist K

Purpose: Examine the implementation and preliminary impact of an on-site food pantry / food prescription program (Food Farmacy) for oncology patients in a safety net setting from the perspective of healthcare providers and staff.

Methods: In-depth qualitative interviews (n=7) were conducted with physicians and staff at the Harris Health System's LBJ Oncology Clinic, a safety net provider. Interviews focused on the implementation and perceived impact of the Food Farmacy for food insecure oncology patients. The interviews lasted up to one hour and were audio recorded. Recordings were thematically analyzed using a hybrid inductive-deductive coding process.

Results: Healthcare providers at LBJ expressed high familiarity with the referral process linking food insecure patients to the Food Farmacy, but lower familiarity with the program structure and goals. Participants indicated that the Food Farmacy supported nutrition counseling during patient visits by offering a concrete resource to support the implementation of healthy eating recommendations. Additionally, providers perceived positive impacts to patient diet quality and quality of life. Perceived barriers to patient utilization of the Food Farmacy centered around transportation and competing responsibilities. Providers offered several suggestions for tracking the impact of the Food Farmacy program including diet quality, diet attributable co-morbidities, cancer outcomes, and quality of life measures. Providers also noted potential for expanded resources for patients with cancer, including culinary medicine programming, to further support nutrition security among patients with cancer being treated in a safety net setting.

Conclusions: This analysis emphasizes the potential of an on-site Food Farmacy in safety net oncology settings and offers important findings for the continued improvement of this resource for cancer patients. Tracking patient metrics and incorporating culinary medicine may be considered as implementation continues. Future studies will include patient EHR data and perspectives to understand program outcomes and barriers from multiple points of view and to triangulate findings from providers.

34

Examining the Role of Education and Allostatic Load on Cancer Mortality Risk among Black Men

Moore JX, Li CS, Andrzejak S, Doty J, Watts K, Bevel M, Moody M, Gilbert GL, Rogers CR

Purpose: This study examined the relationship between educational attainment, allostatic load (AL), and long-term cancer mortality risk among Black men.

Methods: A retrospective analysis was employed among 4,418 Black men within the National Health and Nutrition Examination Survey (NHANES) from 1988 to 2010 with follow-up data through December 31, 2019. Cox proportional hazards models were fitted to estimate adjusted hazard ratios (aHRs) of cancer death between levels of educational attainment (less than high school, high school diploma or equivalent, some college, and college graduate) and AL (adjusted for age, income, and smoking status).

Results: Black men with high AL and less than high school educational attainment had over a four-fold increased risk of cancer mortality (unadjusted HR: 4.19; 95% CI: 2.09-8.40) compared to those with low AL and a college degree or higher. These results attenuated once adjusted for age (age adjusted HR: 1.58; CI: 0.81-3.10). When stratified by education, participants with less than high school educational attainment and high AL had over a three-fold increased risk of cancer mortality (unadjusted HR: 3.38; CI: 2.16-5.26) compared to their low AL counterparts. Among participants with a high school diploma or equivalent, those with high AL had a 75% increased risk of cancer mortality (unadjusted HR: 1.75; CI: 1.12-27.5) compared to their low AL peers. Both stratified results attenuated when adjusted for age.

Conclusions: For Black men with lower educational attainment, high AL was found to be associated with an increased risk of cancer mortality. More years of education is an important social determinant of health that plays a key role in modifying the relationship between AL and cancer mortality. Since more education may help mitigate the association between high AL and cancer mortality, an investment in policies and programs that improve access to education among underserved racial/ethnic minorities is needed. By permitting Black males greater access to health promoting resources, chronic and acute life stressors and their effects may be mitigated and their increased engagement in cancer prevention behaviors may delay their onset of cancer.

35-T

Factors Associated with Mammography Screening in Asian Americans: A Scoping Review

Sheng J, Heiney SP

Purpose: This scoping review aimed to investigate the prevalence of mammography screening and identify factors associated with mammograms among Asian Americans.

Methods: Articles published from 2010 to 2022 were retrieved from PubMed and Cumulative Index to Nursing and Allied Health Literature. Studies (n=618) were identified and examined independently for inclusion/exclusion criteria.

Results: Thirty-three studies were included. Studies included a variety of Asian subgroups (i.e., Chinese, Filipino, Japanese, Korean, Vietnamese, Asian Indian, South Asians, and Pacific islanders), locations, and mammogram screening outcomes (i.e., ever having a mammography, having a mammography within a year, having a mammography within 2 years). The mean prevalence of mammograms within two years was 60.9% (standard deviation 19.9). Factors positively associated with mammogram uptake included having an annual examination or a primary care provider, access, positive attitudes towards mammogram, and shared experience. Conversely, low health literacy, and perceived barriers (e.g., pain, discomfort, embarrassment, perceived lack of access, and perceived lack of need) were negatively associated with mammography uptake. There were additionally some factors with even more limited evidence with which to ascertain their association with mammography screening.

Conclusions: Mammography rates among Asian Americans were found to be below the national average, and variations in study outcomes pose challenges for a comprehensive assessment. To achieve a deeper understanding, future research should prioritize the adoption of standardized measurements based on American Cancer Society mammogram guidelines. The study's findings indicate a major need for a strategy to connect this population with primary care providers. Also, programs are needed to educate Asian American women to improve their understanding of mammography screening and cultivate peer connections within the Asian American community. These findings suggest ways to improve mammography screening rates, thereby enabling early detection within this demographic.

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Feasibility and Acceptability of At-Home HPV Self-Testing for Cervical Cancer Screening among Underserved Women in Alabama - A Pilot Study

Nghiem VT, Smith SR, Kulczycki A, McBrayer AL

Purpose: To assess the feasibility and acceptability of at-home HPV self-testing for cervical cancer screening among underserved women in Alabama

Methods: Between October 2021 and January 2022, a convenient sample of eligible participants was recruited through brochures at local foodbanks, churches, a preventive care mobile bus serving rural areas, and referral from contracted community healthcare workers. Eligibility criteria included: ages 30-64y, either living in rural counties or being African-American, being overdue for cervical cancer screening (ie, no Pap test during the prior 3.5y), not being pregnant, and no history of hysterectomy. Participants received a paper-based questionnaire on sociodemographic, HPV knowledge, medical history, healthcare attendance, and perception on the HPV self-test. Also, the women were provided an Evalyn HPV self-test kit along with the instructional brochure. We conducted laboratory analyses on the Roche Cobas 4800 system for the the collected completed self-test kits against 3 categories: high-risk (HR) HPV-16, -18, and -other HR groups.

Results: A total of 35 women were recruited. About thirty women were recruited by community health workers. Ninety-one percent (32/35) of them was African-American. Three quarters (26/35) had some medical insurance. Most women had high school degree or above (31/36, 89%) and half of the women (16/35, 46%) had the 2019 household income of $40,000 or lower. Sixty-six percent of the women had more than 2 doctor visits in the prior year. Three (3/35, 9%) women returned samples with invalid results to all three categories. One woman had invalid results with HPV HR-16 and -18 but she had a positive result with HPV-other HR groups. Two women had negative results with HPV HR-16 and -18 but they had a positive result with HPV-other HR groups. A total of 29 women having negative results in all three categories. Asked about "What did you like about the self-test?", 15 women reported ease of use, 12 for privacy, 3 for physical comfort. Almost all the women (33/35) felt comfortable to receive the self-test kit via mail.

Conclusions: The HPV self-test kit was acceptable for the recruited women. More than 90% of the collected self-test kits were analyzable.

37

Geographic Accessibility to Healthcare, Ethnic Enclave Residence, and Stage of Diagnosis for Hispanic Adults with Breast, Cervical, and Colorectal Cancer

Pruitt SL, Shahan KL, Canchola AJ, Rathod AB, Boscoe FP, Henry KA, Hiatt RA, Hughes AE, Lin K, Meltzer D, Pinheiro PS, Stroup AM, Zhu H, Gomez SL, Shariff-Marco S

Purpose: Geographic accessibility to healthcare varies widely across populations and places in the U.S. and may be lower for Hispanic or Latino (hereafter Hispanic) populations and individuals residing in Hispanic enclaves. Limited accessibility may lead to increased likelihood of later stage of cancer diagnosis. We examined the association of cancer stage and geographic accessibility to healthcare for Hispanic enclaves and non-enclaves.

Methods: We used population-based cancer registry data from four states (CA, NJ, NY, TX) to identify Hispanic adults diagnosed with colorectal cancer and Hispanic women diagnosed with breast and cervical cancers between 2006-2017. Using the two-step floating catchment area method, we measured geographic accessibility to 1) physicians providing screening (for breast, cervical, and colorectal cancers) and 2) mammography machines (for breast cancer) and categorized accessibility into quartiles based on all n=20,236 census tracts in the four states. Separately by cancer type, we examined the association of accessibility and late stage at diagnosis (regional or distant) compared to early stage (in-situ or localized) and examined whether this association differed by residence in Hispanic enclaves. We fit multivariable log binomial regression models with clustering by census tract using robust standard errors, with age, year of diagnosis, insurance type, state, metropolitan/non-metropolitan census tract residence, and census tract percent poverty as covariates.

Results: Sample sizes and percentages diagnosed at late stage differed for breast (n=124,585, 34.3%), cervical (n=13,226, 52.6%), and colorectal (n=63,662, 59.5%) cancers. Overall, 20-29% of Hispanic cancer patients resided in the lowest quartile of healthcare accessibility tracts. In adjusted models, neither geographic accessibility to physicians nor to mammography machines was statistically significantly associated with stage at diagnosis, regardless of ethnic enclave residence.

Conclusions: Late stage at diagnosis is common among Hispanic adults in four states and may be driven by factors other than geographic accessibility to healthcare. Future studies should examine potential for differences by state of residence and age at diagnosis.

38-T

HPV Vaccination in Under-Resourced Families: The Effects of Social Determinants of Health

Sleiman M, Yockel MR, Liu M, Wendolowski J, Adams-Campbell L, Carter-Bawa L, Aragones A, Tercyak KP

Purpose: Assess HPV vaccination and intentions among children and their parents living in under-resourced communities.

Methods: A total of N=198 parents (45% AA, 53% Latine, 57% educated <high school [HS], 74% income <$60k) with children 10-17 from Washington, DC and Hackensack, NJ metro areas were intercepted at health fairs and surveyed.

Results: Among age-eligible parents, 20% were vaccinated against HPV, 48% were not, and 31% didn't recall. At the bivariate level, age-eligible parents who were older (F=6.9, df=2, p<.01), non-white (X2=9.1, df=4, p<.10), Latine (X2=5.6, df=2, p<.10), and didn't have their child vaccinated (X2=17.6, df=1, p<.01) were the least likely to be vaccinated. Compared to parents who were vaccinated, those who were non-white (OR=5.5, 95%CI = 3.5, 9.4, p<0.001) and didn't have their child vaccinated (OR=8.9, 95%CI = 3.7, 23.3, p<0.001) were less likely to be vaccinated themselves. For their children, 37% were vaccinated, 20% were not, and 43% didn't recall. Among parents with unvaccinated children, 48% confirmed medical provider advice to vaccinate them, 22% were unadvised, and 30% didn't recall: within the next year, 63% intended to do so. In a regression of children's vaccination, compared to children who were vaccinated, those who weren't (or didn't recall) were more likely to have parents who were non-white (OR=2.7, 95%CI=2.6, 2.8, p<.01), with <HS education (OR=3.0, 95%CI=1.52, 6.25, p<.01), and were not vaccinated themselves (OR=10.2, 95%CI=4.01, 28.61, p<.001). Reasons for not vaccinating children included lack of information (35%), vaccine safety (16%), sexual inactivity (13%), access barriers (11%), and low perceived need (8%). Regarding vaccine intent, parents with greater levels of medical mistrust (R=.24, p<.05) and vaccine hesitancy (R=.31, p<.01) were less likely to want to have their children vaccinated. Controlling for race and parental vaccination, an interaction between parent education and mistrust was identified (B=.35, SE= .13, 95%CI=0.09, 0.61, p<.01): those with <HS education and low trust were least likely to intend to vaccinate their children.

Conclusions: Improving HPV vaccination requires comprehensive public health messaging, navigated program access, and multilevel intervention among those in need.

39

Increasing Access to Cancer Screening for Hispanic/Latinx Populations

Martinez EN, Morikawa N, Ortega SM, Perez J, Barrow S, Woodard JN, Salloum R

Purpose: Residents living in the UF Health Cancer Center (UFHCC) Catchment Area (CA) have higher age-adjusted incidence and advanced stage incidence rates of lung, colorectal, and cervical cancers relative to both Florida and US rates. The Hispanic/Latinx populations in the UFHCC CA, is largely uninsured, which creates a barrier to entering primary care and to the continuity of care that routine preventative cancer screenings require.

Methods: Project CONTINUITY (PC) provides community-based and clinician referrals for breast, colorectal and cervical cancer screening services by partnering with safety net clinics in the UF Health network. These screenings are provided at no cost and combined with enhanced navigation and linkage to care in order to expand access to cancer screening services to underserved populations. Transportation and language services are offered to all patients to address the biggest barriers to receiving care other than cost. To ensure high quality care and closed loop referrals, the navigation team, comprised of bilingual clinical community navigators (CCN), partners with community based networks embedded in the population in order to expand outreach to Hispanic/Latinx community members. Direct referrals from the community partners to the CCNs are made. CCNs complete a comprehensive intake where service needs are identified CCNs provide connection to cancer screenings either by in-home testing or by scheduling appointments with clinical partners for in-clinic services or primary care. CCNs provide follow-up to all patients ensuring screenings are completed, results are received, facilitate follow-up care, and provide reminders of when their next screening is due.

Results: Since February 2022, PC, has navigated 624 individuals to services, screened 106 women for breast cancer, 141 pap smears in partnership with our clinical partners, and distributed 92 FIT tests in the Hispanic/Latinx community.

Conclusions: PC uses tailored approaches to strengthen community awareness and increase uptake of cancer screening services utilizing bundled care services in Hispanic/Latinx populations.

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Leveraging NCI-Designated Cancer Centers' Community Outreach and Engagement Infrastructure to Advance Community-Driven Priorities Related to the Social Determinants of Health: Feasibility and Preliminary Efficacy of a Financial Literacy Intervention

Bouchard E, Brooks T, Clark Robinson N, Wills A, Saad-Harfouche F

Purpose: We examined the feasibility and preliminary efficacy of a culturally responsive community-based financial literacy group educational intervention as a component of a cancer center's community outreach and engagement strategies to address economic stability as a social determinant of health.

Methods: We worked with community partners to host a 1-time group based financial literacy educational intervention. Pre/post measures were administered before and after the 45-minute session. Feasibility was examined through participant demographics. Efficacy was measured through pre/post knowledge, financial self-efficacy, and trust.

Results: Feasibility: We reached N=57 participants. 41% had a household income below $35,000, 53% had a high school degree or less, 2% were Hispanic, 88% were Black, 44% female, 66% full-time employed, 35% receiving supplemental nutrition assistance program benefits. As for banking experience, 85% of participants reported that they or someone in their household had a bank account. Sessions were hosted in a variety of community-based contexts, including community-based and faith-based organizations and a work-force development company.

Efficacy: Overall pre/post test scores show significant increases in knowledge (pre-74% correct vs post-81% correct (p<.05), no differences were detected in financial self-efficacy or trust.

Conclusions: One community-driven priority area in the Roswell Park Western New York catchment area is financial literacy and skills. There is a need for financial literacy interventions that are grounded in the unique experiences of specific communities, specifically communities that experience structural conditions that increase risk for financial strain. We worked with community partners to develop and implement a community-based financial literacy intervention. Results showed feasibility and results also indicate preliminary efficacy in increasing knowledge. As part of the Community Outreach and Engagement mission, NCI-designated cancer centers bring important infrastructure related to community-based participatory research and community partnerships that can be leveraged to advance financial literacy education interventions to address this important social determinant of health.

41-T

Measuring the Impact of an Open Source Data Tool for Cancer Centers

Burus JT, McAfee CR, Wilhite NP, Hull PC

Purpose: Numerous online data tools for cancer surveillance and research have been developed in recent years, but little information exists on assessing their impact. The purpose of this study is to assess the impact to date of Cancer InFocus (CIF)—a collection of open source data tools we created for cancer centers to improve the process of gathering and disseminating data on cancer burden and disparities for their catchment areas.

Methods: The CIF collection of tools includes a website called CIF: Catchment Areas for downloading datasets curated to 73 cancer center catchment areas and one covering the entire U.S., along with three different data visualization applications generalized to be applied to any catchment area. We measured the impact of CIF across three dimensions: product engagement (PE), idea dissemination (ID), and adopter satisfaction (AS). PE was measured through usage of the CIF: Catchment Areas application and completion of no-cost licensing agreements for cancer centers to adopt their own site-specific CIF applications. ID was measured in terms of presentations to national audiences. AS was measured using a survey and qualitative interviews with staff at CIF-adopting centers.

Results: We released CIF in July 2022, with website engagement tracking beginning in February 2023. To date, the CIF: Catchment Areas website has 2361 views (mean 9.2/day) and 578 dataset downloads (mean 2.3/day). Every available catchment area dataset has been downloaded at least once. Seventeen cancer centers have completed agreements to adopt the CIF visualization applications for use on their catchment areas. The vision, methods and ways to adopt CIF have been presented at six national conferences, in one NCI-sponsored webinar, and in one peer-reviewed publication. Preliminary analysis of adopter impact surveys indicates that over two-thirds are gathering and disseminating more data with less effort since beginning to use CIF.

Conclusions: CIF has demonstrated impact across multiple dimensions of assessment, representing a step forward in streamlining catchment area data gathering and dissemination efforts. This assessment approach could be used to measure and compare the impact of other online data tools created by cancer centers or similar entities.

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Medicaid Enrollment Timing and Cancer Staging, Time to Treatment, and Survival: Examining Cancers of the Breast, Colon, and Lung Using SEER-Medicaid

Benavidez GA, Alberg A, Self S, Probst J, Eberth JM

Introduction: In some states, individuals may not qualify for Medicaid until after receiving a cancer diagnosis, potentially nullifying the benefits of health insurance. Here we examine the role of Medicaid enrollment timing on cancer outcomes (tumor stage at diagnosis, time to treatment, survival) by comparing patients not enrolled in Medicaid, those enrolled before their cancer diagnosis, and those enrolled after their cancer diagnosis for breast, colorectal, and lung cancers.

Methods: This analysis used the 2021 release of the SEER-Medicaid linked dataset. Medicaid enrollment timing and insurance status were determined from a combination of SEER data and Medicaid enrollment data. A state-level random intercept was included in the regression models to account for state-to-state variation. Logistic regression was used to examine tumor stage at diagnosis, interval-censored Cox proportional hazard regression was used for time to treatment, and competing risk Cox models were used to examine cancer-specific survival.

Results: This analysis included 276,555 breast cancer patients, 104,784 colon cancer patients, and 101,058 lung cancer patients. In fully adjusted models for each cancer type, compared to those not insured by Medicaid, enrolling in Medicaid before and after diagnosis significantly increased the odds of a late-stage diagnosis, a lower likelihood of initiating treatment, and a higher risk of death. When comparing only those insured by Medicaid, those enrolled after their diagnosis as compared to those prior to their diagnosis had significantly higher odds of a late-stage diagnosis, a lower likelihood of early treatment initiation, and a higher risk of death for all cancers examined.

Discussion: This analysis confirms previous findings that Medicaid-insured individuals have worse cancer outcomes than those with private insurance. Additionally, the study highlights the importance of Medicaid enrollment timing, showing that earlier enrollment is associated with better outcomes. This finding has important implications for Medicaid policy, suggesting that expanding eligibility requirements to include earlier enrollment may improve cancer outcomes and reduce the national burden of cancer.

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Multi-Method Approach for Understanding a Cancer Center Catchment Area Needs and Establishing Priorities

Evett SM, Schmidt ME, Meyer ML, Nash SH, Wells Sittig KE, Kahl AR, Charlton ME, Askelson NM

Purpose: The Holden Comprehensive Cancer Center (HCCC) Community Outreach and Engagement (COE) team and Community Advisory Board (CAB) employed a multi-method process to define catchment area (CA) priorities by assessing CA data and engaging community.

Methods: We conducted a scan of CA needs assessments done by other cancer centers to determine common methods for identifying needs (n=66) and reviewed available cancer-related data sources (n=61). We used Iowa Cancer Registry (ICR) data to assess the cancer burden in urban and rural counties. Our primary data collection involved interviews with rural leaders (n=18) in cancer prevention and control efforts to identify rural cancer priorities and data needs. We engaged the CAB in a participatory process to develop guiding questions HCCC could use to determine priorities.

Results: Our review of cancer center CA needs assessments showed that other centers primarily used focus groups, key informant interviews, and CA surveys for primary data collection. Common secondary data sources included Behavioral Risk Factor Surveillance System data, public health department data, and state cancer registry data. Analysis of ICR data showed that of the top 20 cancer sites in Iowa, rural-urban cancer differences in both mortality and survival rates existed for five cancer sites. From our interviews, we identified priorities including a lack of information on survivorship, patient burden, and cancer risk factors. Interviewees also reported that suppression of data at the county level due to small numbers was a challenge. Interviewees voiced transportation, accessible care, and education as top rural cancer needs. Multiple participatory activities with the CAB resulted in guiding questions such as, "Are communities ready to engage around this issue?", "Does this issue address a health inequity?", "Do patients face barriers related to this issue?", "Is this a leading cause of cancer incidence/mortality?", and "Is this issue related to screening or prevention?"

Conclusions: The questions developed by CAB members were used to inform a process for HCCC to use to determine future priorities. Results also informed HCCC's strategic plan and were used to create a CA assessment plan.

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Multilevel Factors Influencing Repeat Colorectal Cancer Screening in a Federally Qualified Health Center: A Qualitative Study

Nonzee NJ, Sandoval G, Gregerson P, Glenn BA, Round P, Tran K, Cai L, Bastani R

Purpose: To inform system interventions, this study explored perspectives on factors that influence implementation of repeated colorectal cancer (CRC) screening over time in a large Federally Qualified Health Center (FQHC).

Methods: Between March and May 2023, we conducted semi-structured interviews with health care providers and staff at a multi-site FQHC that serves diverse patients (~90% ethnic minority, ~25% homeless) in urban and remote regions of LA County. Interviews explored implementation of repeat CRC screening over time, including perceived barriers and facilitators, provider recommendation approach, and clinic processes of care. Themes from interview transcripts were summarized.

Results: Interview participants (n=20) were ethnically diverse (40% White, 20% Asian, 10% Black/African American) and mostly female (85%). Half were primary care providers (MD, PA, nurse), and half were medical assistants; median years of experience=16 (range 4-45). Frequently cited patient barriers to recurrent testing included housing instability, patient discomfort with stool tests, and insurance coverage for colonoscopies. At the provider level, providers and staff described strategies to reduce missed opportunities for screening: screening eligibility was commonly assessed twice (once by an MA and once by a provider), and providers often ordered both colonoscopy and stool-based tests during the same visit in anticipation of barriers to colonoscopy (bowel prep, specialist wait time). Additionally, how and which screening test providers and staff discussed was influenced by patient preferences, screening history and consistency, and reasons for prior test non-completion. System facilitators included organizational culture that embraced implementation of guidelines disseminated by agency leadership; staff re-education on test instructions; and facilitation of private, sanitary testing locations for the unhoused. However, staffing shortages and incomplete or decentralized CRC screening history information in electronic health records impeded efficient eligibility assessment and education.

Conclusions: Findings highlighted multilevel contextual factors and modifiable processes of care that system interventions can target to improve recommended CRC screening over time.

45-T

Particulate Matter Exposure Impacts Racial Disparities in Colorectal Cancer Mortality in Metropolitan Detroit

Snider N, Hastert T, Dyson G, Gronlund C, Stoffel E, Rozek L, Peters E, Schwartz A, Purrington K

Colorectal cancer (CRC) is the third most diagnosed cancer in the United States and the third leading cause of cancer-related deaths. Non-Hispanic Black (NHB) individuals have the highest rates of CRC incidence and mortality in the United States, and we know these disparities are highly influenced by social determinants of health (SDOH). Neighborhood quality, a well-established SDOH, has been shown to affect an individual's risk of exposure to harmful environmental contaminants including ambient air pollution resulting from segregation and historic redlining, leading to environmental injustices. We sought to understand whether higher rates of exposure to fine particulate matter (PM2.5) played a role in racial differences in CRC survival in metropolitan Detroit. Patient data including census tract at diagnosis, demographics, and clinical features were obtained from the metropolitan Detroit cancer surveillance system registry. PM2.5 data were obtained from the Environmental Protection Agency (EPA) Remote Sensing Information Gateway (RSIG). We found that PM2.5 exposure partly attenuated the effect of race on cancer mortality in all patients (NHB vs NHW: Hazard Ratio (HR) = 1.23, 95% Confidence Interval (CI) 1.20 - 1.27, $p < 0.0001$, NHB vs NHW after accounting for PM2.5: HR = 1.10 95% CI = 1.06 - 1.13 $p < 0.0001$) and the effect was stronger among patients under 50 than over 50, though still significant in both models. Additionally, the effect of PM2.5 on mortality was much stronger among NHB patients than NHW patients (NHB HR = 1.30, 95% CI = 1.17 - 1.45, $p < 0.0001$; NHW HR = 1.06, 95% CI = 1.02 - 1.11 $p = 0.0077$) and especially strong among NHB patients under 50 (HR = 2.51, 95% CI = 2.38 - 3.38, $p < 0.0001$) compared to any other group. We conclude that ambient air pollution, particularly PM2.5, disproportionately affects mortality risk in NHB CRC patients. These results highlight the importance of environmental justice research in biomedical research, and the need for a better understanding of environmental impact on tumor biology to prevent tumor progression and mortality among all patients.

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Patterns of Characteristics and Treatment of Early-Onset Colorectal Cancer among Asian Americans and Pacific Islanders

Hong YR, Ilyas S, Hu J, Yang J, Yoon, A, Turner K, George T

Purpose: Despite the increasing trends in early-onset colorectal cancer (EoCRC), its burden among Asian Americans and Pacific Islanders (AAPI) is unknown.

Methods: We assessed the patterns of characteristics and treatment of EoCRC using data from the 2020 National Cancer Database (NCDB), accounting for 70% of all newly diagnosed cancer cases in the U.S. EoCRC cases diagnosed between 2010 and 2020 were identified using ICD-O-3 codes and age diagnosis (<50 years old). Study participants were disaggregated based on distributions and geographically relevant subpopulations: Chinese, Japanese, Korean, Filipino, Vietnamese, Asian Indian/Pakistani, Hawaiian, Southeast Asians, Pacific Islanders, and Other Asians. We used descriptive statistics and bivariate analysis to compare clinical characteristics (stage, histology), receipt of treatment (surgery, immunotherapy), and time to treatment since diagnosis.

Results: A total of 5506 AAPI patients diagnosed with EoCRC (mean age: 41.4 years old, 49% female, 23.8% stage IV) were included. Pacific Islanders had a mean diagnosis age of 39.7 years and a higher percentage of advanced stage III/IV (62.8%) compared to Koreans who had a lower percentage of advanced stage (54.4%) and a mean diagnosis age of 42.9 years. Hawaiians had a higher proportion of colon cancer cases (71.2%) while rectal cancer was more prevalent among Filipinos (41.8%). The median time to the first cancer treatment was the lowest among Japanese (11 days) and highest among Pacific Islanders (20 days). Among EoCRC patients with advanced stages, Southeast Asians had the longest median time to definitive surgery (29 days), while Vietnamese had the shortest (10 days). Mismatch repair (MMR) testing was performed in only 2% of AAPI patients with EoCRC, and only 3% of immunotherapy was guided by MMR testing (dMMR/MSI-H).

Conclusions: There were differences in clinical characteristics and treatment patterns of EoCRC between AAPI subgroups. Compared with East Asians, Southeast Asians or Pacific Islanders had a longer median time for cancer treatment. Continued improvement in data disaggregation can provide more insights into these disparities among AAPI populations, helping optimize time-to-treatment and guideline-concordance care for AAPI with EoCR

47-T

Prevalence of Cannabis Use and Motivations for/against Use in Rural vs Urban/Suburban Cancer Patients Treated at a Single Institution

Holben L, Ireland J, Thompson C, Zhu J, Truica C

Background: The extent of use and effectiveness of cannabis in cancer patients remains unclear. Our objective was to investigate attitudes towards cannabis and current cannabis use in cancer patients treated at Penn State Cancer Institute, and to evaluate differences by patients residing in rural versus urban/suburban areas.

Methods: Using an anonymous questionnaire, we surveyed cancer patients who came for an in-person visit at our institution between June-September 2023.

Results: All patients who agreed to participate (N=102) completed the majority of the questionnaire. 52% of participants were male, 90.7 % were white, 7.2% Black and 65% had advanced stage III-IV cancers. Most common cancers were Lung cancer (19.6%), non-Hodgkin Lymphoma (12.7%), Breast cancer (12.8%), Leukemia (12%). 53% lived in rural areas and 17.5% of patients were finding it difficult or very difficult to get by on present income. We found a lower rate of cannabis use since cancer diagnosis than previously reported (22.8%, 95% CI: 15.3% - 32.4%) with more patients in rural areas than urban/suburban being cannabis users, although not statistically significant (29.4% versus 17.4%, p=0.23).More patients in urban/suburban areas believed cannabis can improve nausea and vomiting (62.8% vs 40.8%) with p=0.0397 and were concerned about interactions with other medications (28.9% urban/suburban vs 8.3% rural) with p=0.0363. A small number of patients 13% (95% CI: 5.4% - 27%) used cannabis instead of opioids to manage pain with more patients in rural areas (20.8%) than urban/ suburban (4.8%) with p=0.19. Most common reason to use cannabis instead of opioids were "I feel cannabis is safer" 83.3% and "I feel cannabis is less addictive" 83.3%. More patients in urban/suburban areas (57%) were concerned about negative reactions from family members or friends than in the rural areas (37%), with p=0.15. 94% of patients 95% CI 87% - 97.6%) thought there are benefits from cannabis use and 74% (95% CI: 64.1% - 82%) believed there are risks.

Conclusions: Prevalence of cannabis use was lower than previously reported and more patients in rural areas than urban/ suburban used cannabis during cancer treatment. While this did not reach statistical significance, our sample size was relatively small.

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Racial and Ethnic Disparities in Cardiovascular Disease Mortality among Asian American and Pacific Islander Breast Cancer Survivors, 2000-2019

Vo JB, Brandt C, Ramin C, Gierach GL, Lawrence WR, Rhee J, Shiels M, Taparra K, Veiga LHS, Shing JZ, Yi S

Background: Asian American (AA) and Pacific Islander (PI) populations are two distinct races with varying breast cancer and cardiovascular disease (CVD) burden, and CVD is a common adverse effect of breast cancer treatment. We assessed differences in CVD mortality among breast cancer survivors by race and ethnogeographic region (East AA, South AA, Southeast AA, NHPI) and clinical characteristics.

Methods: From 17 SEER Registries, 56211 women (23844 East AA; 5847 South AA; 21572 Southeast AA; 4948 NHPI) aged 18-84 years were diagnosed with first primary invasive breast cancer between 2000-2018 (followed until 2019) and survived ≥1 year. Ten-year CVD cumulative mortality (CM) was estimated with non-CVD deaths as competing events. We used multivariable adjusted Cox proportional hazard models to estimate hazard ratios (HRs) of CVD mortality across race and ethnogeographic region with attained age as the timescale. Models were stratified by age at breast cancer diagnosis (<65, ≥65 years), stage (localized, regional/distant), estrogen receptor [ER] status (positive, negative), and initial treatment (surgery alone, chemotherapy alone, chemotherapy plus radiotherapy, radiotherapy alone). Likelihood ratio tests assessed racial and ethnic heterogeneity in HRs.

Results: For those aged <65 years, the highest 10-year CVD CM was for NHPI women (2.11%, 95%CI=2.56%-2.78%) and lowest for South AA women (0.26%, 95% CI=0.13%-0.47%). For those aged 65+ years, similarly, NHPI women had the highest 10-year CVD CM (10.78%, 95% CI=8.62%-13.21%) compared with East, South, and Southeast AA women (CM range=6.85%-8.26%). Relative to East AA women, NHPI (HR=2.46, 95%CI=2.09-2.89), South AA (HR=1.31, 95%CI=1.05-1.64), and Southeast AA women (HR=1.23, 95%CI=1.09-1.40) had elevated CVD mortality which was consistent by age, stage, ER status, and treatment type (p-heterogeneity<0.01). The greatest relative risks were observed for NHPI women aged <65 years (HR=4.50, 95%CI=3.31-6.06) and after initial chemotherapy receipt (HR=4.17, 95%CI=2.51-6.94), compared with East AA women.

Conclusion: Profound disparities in CVD mortality were observed between AA and NHPI breast cancer survivors, by race and ethnogeographic region, especially among young NHPI women and after initial chemotherapy.

49-T

Racial/Ethnic Disparities in Time from Diagnosis to Treatment for Endometrial Cancer

Rodriguez VR, LeBron AMW

Purpose: This study aimed to examine differences in time to treatment for endometrial cancer among racial/ethnic groups.

Methods: Data from the California Cancer Registry (CCR) on endometrial cancer cases was used. The study included a total of 58,163 adult women ages 18 years and older with endometrial cancer diagnosed between January 1, 2000 to December 31, 2019. Racial/ethnic groups included non-Hispanic American Indian/Alaskan Natives (AI/AN), non-Hispanic Asian or Pacific Islanders (API), non-Hispanic Blacks (Black), Hispanic/Latinos (Latinos), and non-Hispanic whites (white). Descriptive statistics, t-tests, and linear regressions were performed to examine racial/ethnic differences in time to treatment for endometrial cancer.

Results: Between 2010-2019, there were a total of 54,006 endometrial cancer diagnoses after exclusion criteria was applied. The median of time from diagnosis to treatment among all individuals was 29 days. The median of time from diagnosis to treatment among racial/ethnic groups was as follows: 34 days for Black women, 33.5 days for AI/AN women, 33 days for Latina women, 29 days for API women, and 28 days for white women. There were statistically significant differences in time to treatment for all racial/ethnic minoritized groups when compared to white women.

Conclusions: Prompt diagnosis and treatment for cancer is crucial for improved cancer outcomes. Our results suggest that Black, AI/AN, and Latina women experience endometrial cancer treatment delays when compared to white women. Future work warrants an examination of racial/ethnic disparities in the association between treatment delays and endometrial cancer survival in order to ensure equitable treatment and cancer related outcomes for racially minoritized populations.

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Risks of Adverse Health Outcomes Among Older Rural Prostate Cancer Survivors: A SEER-Medicare analysis

Chang CE, Lloyd S, Henry NL, O'Neil B, Hashibe M

Purpose: Rural disparities in prostate cancer survivorship have been reported, but studies on adverse health outcomes in rural populations are limited. Our main goal is to assess the risks of adverse health outcomes among rural prostate cancer survivors compared to their urban counterparts.

Methods: We included men aged ≥66 diagnosed with primary invasive prostate adenocarcinoma between 2000 and 2017 from SEER-Medicare data. Patients without continuous Part A&B enrollment since one year before cancer diagnosis and patients who died within a year of their cancer diagnosis were excluded. Rural and urban residences were categorized using Rural-Urban Commuting Area codes (RUCA), and adverse health outcomes were identified using International Classification of Diseases (ICD) diagnosis codes. Hazard ratios (HR) and 95% confidence intervals (CI) for rural prostate cancer patients compared to their urban counterparts were estimated using Fine-Gray subdistribution hazard models, adjusting for potential confounding factors.

Results: We identified a total of 38,058 rural prostate cancer survivors and 112,618 urban prostate cancer survivors. A higher percentage of rural prostate cancer survivors were diagnosed at a distant stage (4.5% vs. 3.9%, p<.001). At the time of cancer diagnosis, rural prostate cancer patients had a higher prevalence of acquired hypothyroidism, acute myocardial infarction, chronic obstructive pulmonary disease (COPD), heart failure, and rheumatoid arthritis (p<.05). Furthermore, rural prostate cancer survivors had a higher risk of developing cataracts and COPD compared to urban prostate cancer survivors both >1 to 5 years and >5 years after cancer diagnosis. The risk of death was 1.04-fold for prostate cancer survivors in large rural cities/towns (95% CI: 1.01, 1.07) and 1.07-fold for prostate cancer survivors in small and isolated rural towns (95% CI: 1.04, 1.11) compared to their urban counterparts.

Conclusion: Health disparities in adverse health outcomes and survival among older rural prostate cancer survivors highlight the need for preventive strategies tailored specifically to this population.

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Social Determinants of Health Influences on Lung Cancer Surgery Patients' Quality of Life: A Qualitative Study

Teteh DK, Ferrell B, Okunowo O, Downie A, Erhunmwunsee L, Montgomery SB, Raz D, Kittles RA, Kim JY, Sun V

Social determinants of health (SDOH) are non-clinical factors that may affect outcomes of persons living with cancer. Understanding the impact of SDOH on outcomes can inform the development of interventions for persons with cancer. The purpose of this study was to describe the influence of SDOH factors on quality of life (QOL)-related outcomes for lung cancer surgery patients. Methods: Thirteen patients enrolled in a randomized trial of a dyadic self-management intervention participated in semi-structured key informant interviews at study completion. Conventional content

analysis approach was used to identify codes and themes that were derived from the interviews. Independent investigators coded the qualitative data, which were subsequently confirmed by a second group of independent investigators. Themes were finalized and discrepancies were reviewed and resolved. Results. Six themes, each with several sub-themes emerged. Overall, most participants were knowledgeable about the concept of SDOH and perceived that provider awareness of SDOH information was important for the delivery of comprehensive care in surgery. Some participants described financial challenges during treatment that were exacerbated by their cancer diagnosis and resulted in stress and poor QOL. The perceived impact of education varied and included its importance on navigating the healthcare system, decision-making on health behaviors, and more economic mobility opportunities. Some participants experienced barriers to accessing healthcare due to insurance coverage, travel burden, and the fear of losing quality insurance coverage due to retirement. Neighborhood and built environment factors such as safety, air quality, access to green space, and other environmental factors were perceived as important to QOL. Social support through families/friends and spiritual/religious communities were perceived as important to postoperative recovery. Discussion: Among lung cancer surgery patients, SDOH factors can impact QOL and patient's survivorship journey. Importantly, SDOH should be assessed routinely to identify patients with unmet needs across the five domains. SDOH-driven interventions are needed to address these unmet needs and to improve the QOL and quality of care for lung cancer surgery patients.

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Strategies for Advancing Sexual Orientation and Gender Identity (SOGI) Data Collection in Cancer Research: Insights From the Sexual and Gender Minority (SGM) Interest Group of the NCI Cohort Consortium

Pratt-Chapman ML, Tredway K, Wheldon CW, Streed Jr CG, Scout NFN, Ose J, Jackson SS

Purpose: There is broadening awareness of the need to collect sexual orientation and gender identity (SOGI) data as part of cancer research given the ~7% of Americans identify as lesbian, gay, bisexual, transgender, queer, intersex, or asexual (LGBTQIA+). These data are critical to develop appropriate evidence-based cancer screening, treatment and survivorship guidelines for queer populations.

Methods: The Sexual and Gender Minority (SGM) Interest Group of the NCI Cohort Consortium met from April 2022 to June 2023 to discuss optimal collection of SOGI data elements in cancer research, building on the National Academies of Science, Engineering, and Medicine's Consensus Study Report: Measuring Sex, Gender Identity,

and Sexual Orientation, existing literature, and professional experience to compose the following consensus strategies that are evolving with the existing evidence base. The committee reviewed NASEM report items for clarity, face validity, inclusivity, and succinctness. The committee attempted to balance the need for inclusiveness of LGBTQIA+ individuals with the needs of the study population likely to make up the majority of participants (e.g., heterosexual, cisgender adults, aged 50 and older) in cancer cohorts and clinical trials. Proposed updates to wording that differed from the NASEM recommendations include documentation of the committee's rationale.

Results: Original items and response options from the NASEM report (2022) along with revised recommendations and the committee's rationale will be presented. These measures can be used as SOGI data collection emerges as a standard of quality data collection in clinical practice.

Conclusion: The strategies we present aim to remedy some of the limitations apparent in the NASEM report to advance standardized data collection methods for use in cancer research while the field continues to evolve. We provide these measures to add to the evidence based on lived experience as LGBTQIA+ people, as well as researchers and allies invested in more accurate data collection, measurement and analysis.

53-T

The Association between Educational Attainment and Chronic Stress with Risk of Cancer Mortality among Hispanic Women

Lopez-Pentecost M, Li CS, Moore JX, Vernon M

Purpose: This study aims to examine the relationship between educational attainment levels and allostatic load (AL) score and their association with long-term risk of cancer mortality in Hispanic women.

Methods: A retrospective analysis was conducted among 5,637 Hispanic women within the National Health and Nutrition Examination Survey (NHANES) from 1988 to 2010 with follow-up data through December 31, 2019. Participants' self-reported formal education attainment, which was dichotomized into (1) less than high school (HS) education; and (2) high school and above. AL score (range 0-9) was calculated by establishing high risk thresholds for each AL component (body mass index, diastolic blood pressure, glycohemoglobin, systolic blood pressure, total cholesterol, serum triglycerides, serum albumin, serum creatinine, and C-reactive protein). Weighted Cox proportional hazards models were used to estimate adjusted hazard ratios (aHRs) of cancer death between educational attainment/AL and adjusted for age, income, and smoking status.

Results: Preliminary results indicate that when stratified by education and adjusting for age, Hispanic women who received a HS degree and had high AL had a 26% higher risk of cancer mortality (age-adjusted HR: 1.26, CI: 1.05-1.50) compared to their low AL counterparts. Hispanic women who did not complete HS and had high AL had a nearly two-fold increased risk of cancer mortality (unadjusted HR: 1.96, CI: 1.10-3.49) compared to their low AL counterparts. This two-fold increase attenuated to a 39% increased risk cancer mortality when adjusted for age (age adjusted HR: 1.39, CI: 1.12-1.72).

Conclusions: Our findings highlight that for Hispanic women, lower educational attainment (less than HS) in combination with high levels of chronic stress increases the risk of cancer death drastically. Higher education may be associated with increased healthcare resources, income, and knowledge that may contribute to decreasing the risk of cancer mortality for Hispanic women. Future research should examine the role of other factors, such as length of time in the U.S., citizenship status, country of birth, and their impact on educational attainment, allostatic load, and cancer mortality.

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The Association between the Heterogeneity of Smoke-Free Laws and Smoking Prevalence and Quit Attempts within the Tobacco Nation

McArthur N, Usidame B

Purpose: This research explores the connections between policy strength, smoking status, quit attempts, and sociodemographic differences across the outcomes.

Methods: Data source for tobacco use, quit attempts, and sociodemographic variables (race/ethnicity, age groups, education, and sex) was the Behavioral Risk Factor Surveillance System. Smoke-free policy data was from the Center for Disease Control and Prevention which grouped laws based on indoor smoking
restrictions. Weak, medium, and strong laws were denoted by smoking bans in one (Arkansas-AR), two (Indiana-IN), and three (Ohio-OH) locations respectively. All three states banned smoking in private worksites. Pre- (0) and post-policy (1) periods were calculated in 3-month intervals for AR, IN, and OH. Smoking status was 1 if respondents smoked ≥100 cigarettes and smoked every day or someday, and 0 if not. Quit attempt was 1 if respondents stopped smoking ≥1 day in the past year with plans to quit, and 0 if not. For the analyses, we computed the average pre- and post-policy smoking and quit attempt rates. Using separate logistic regression models, we estimated the association between smoking status, quit attempts and pre-post-policy and their interaction with the sociodemographic variables.

Results: Average smoking rates changed pre- to post-policy: IN (25% to 20%), OH (21% to 19%), AR (22% to 20%). Quit rates increased: IN (58% to 60%), AR (54% to 56%), but decreased in OH (55% to 54%). Regression models revealed significantly lower smoking odds post-policy across IN (OR=0.73; CI=0.73-0.84), OH (OR=0.91; CI=0.83-0.99), AR (OR=0.87; CI=0.82-0.93), but these associations became insignificant in the adjusted models. IN saw age-related effects (40-54 years vs. 18-24 years, AOR=1.32; CI=1.00-1.77), AR showed race disparity (Blacks vs. Whites, AOR=1.47; CI=1.14-1.89) and had increased odds of quitting post-policy (AOR=1.66; CI=1.04-2.65), but this relationship did not interact with any of the sociodemographic variables.

Conclusion: The findings show that smoke-free policies may contribute to curbing smoking prevalence even in regions with historically weak tobacco control policies like these 3 states in the tobacco nation.

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The Role of Social Determinants of Health in Cancer Treatment Inequities among People with HIV and Cancer in the United States

Islam JY, Guo Y, Turner K, Vadaparampil S, Suneja G, Camacho-Rivera M

Purpose: People living with HIV (PWH) are less likely to receive any cancer treatment compared to those without HIV. Our objective was to evaluate the role of area-level social determinants of health (SDoH) in cancer treatment receipt among PWH and cancer in the US.

Methods: We used the National Cancer Database (2004-2020) and included adult (18-89 years) patients living with HIV identified using ICD9 and ICD10 codes. We included the top ten leading cancers that occur among PWH including cancers of the head and neck (oral cavity, pharynx, and larynx), upper gastrointestinal tract (pancreas, stomach, and esophagus), colorectum, anus, lung, breast, cervix, and prostate; Hodgkin lymphoma; and diffuse large B-cell lymphoma (DLBCL). Our main outcome was receipt of any treatment, including systemic therapy, surgery, radiotherapy. Our main SDoH exposures included area-level education or % of adults without a high school degree and area-level income or median income quartiles within the patient's zip codes. We used hierarchical multivariable Poisson regression models clustered by facility ID.

Results: We included 31,928 patients with HIV and cancer, of which 25% did not receive any curative treatment. Overall, 40% of patients were aged ≥60 years, 38% were NH-Black, 70% were male, and 43% of patients resided in the South. Almost half (46%) of patients were treated at an academic cancer care facility, and 41% and 21% were insured through Medicare or Medicaid, respectively. Forty-two patients were diagnosed with stage 1 or 2 cancer and the most common cancers included lung (22%), DLBCL (13%), anal (13%), and colorectal (12%) cancers. Patients living in the least educated (aPR:0.94, 95% CI:0.92-0.96) and lowest median income (aPR: 0.94; 95% CI:0.92-0.95) areas were less likely to receive any cancer treatment after adjustment for cancer type, stage at diagnosis, sex, age group, calendar year, and comorbidities. When these models were stratified by race/ethnicity, we observed consistent associations among NH-White and NH-Black PWH.

Conclusion: Area-level markers of social disadvantage are associated with cancer treatment receipt among PWH, suggesting structural factors may impact this long-standing observed inequity.

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Trends in Uterine Cancer among Premenopausal and Postmenopausal Women in the United States, 2001-2020

Guo F, Adekanmbi V, Hsu CD, Berenson AB

Purpose: The purpose of the study was to assess the current trends in uterine cancer and endometrial cancer incidence in both premenopausal and postmenopausal women in the US from 2001 to 2020 and disparities in the incidence among racial/ethnic groups.

Methods: We used data on US adult women from US Cancer Statistics 2001-2020 database. This database covered essentially all adult female population between 2001 and 2020 in the US. We only included malignant cases. Incidence was age adjusted to the 2000 US standard population. When analyzing the trends, we excluded the data from 2020 because the COVID pandemic affected the public's ability and desire to use health care services.

Results: Incidence rate of uterine cancer and endometrial cancer sharply decreased from 2019 to 2020 in all age groups (20-54 years, 55-79 years, 80+ years) and the proportion of metastatic cancer increased across all age groups. Joinpoint analyses revealed that there were 1 joinpoint for the trends in incidence rate of endometrial cancer incidence among 20-54 years old (annual percentage change (APC) from 2001 to 2012 0.9, 95% confidence interval (CI) -0.2 - 1.3, APC from 2012 to 2019 1.9, 95% CI 1.2-3.0), 0 joinpoints among 55-79 years old (APC from 2001 to 2019 1.3, 95% CI 1.1-1.5), and 1 joinpoints among 80+ years old (APC from 2001 to 2014 -1.6, 95% confidence interval (CI) -2.2 - -1.3, APC from 2014 to 2019 0.8, 95% CI -0.5 - 2.1). During 2017-2020, the lowest adjusted annual incidence rate (90.1 per 1,000,000 individuals) was observed among non-Hispanic Blacks, while the highest adjusted annual incidence rate (204.2 per 1,000,000 individuals) was recorded among American Indian/Alaska Native individuals aged 20-54 years. Among individuals aged

55-79 years and those aged 80 and above, Asian or Pacific Islanders had the lowest adjusted annual incidence rates, with 593.2 and 270 per 1,000,000 individuals, respectively. Similar patterns were observed for uterine cancer.

Conclusions: Our research reveals a rising trend in the incidence of uterine and endometrial cancers in both premenopausal and postmenopausal women, while a decline is observed in individuals aged 80 and above. There are racial/ethnic disparities in the incidence.

57-T

Underlying Factors Influencing Kidney Cancer Surgical Treatment Disparities in Arizona

Gomez DM, Cruz A, Adrover Claudio J, Larose D, Gachupin FC, Slowtalker JR, Lee BR, Chipollini J, Batai K

Purpose: Hispanics and American Indians (AIs) in Arizona have more advanced-stage kidney cancer (KC) and higher mortality compared to non-Hispanic Whites. Surgical treatment disparities (e.g., delaying or forgoing surgical treatment) also exist. This study aims to understand the underlying factors of KC treatment disparities.

Methods: Interviews were conducted with KC patients (n=13) and community members without KC (n=61) in Arizona. Participants were asked questions to assess healthcare access, mistrust, and belief and knowledge of cancer.

Results: There were 74 participants (36% Hispanics, 31% AIs, and 14% non-Hispanic Blacks) who completed the interviews. Three patients (23%) had stage III/IV KC. Many participants had healthcare access issues with 22% reporting not having a primary care doctor and 12% reporting that there was a time when they could not see a doctor because of cost. Almost 50% reported that they had delayed care because they could not get an appointment soon enough. Among 10 patients who responded to a question about diagnosis delay, 4 answered that they waited over a year to see their doctor when they had health issues before their KC diagnosis. These 4 patients thought other existing health conditions were causing the issues. Only 23% of patients reported having heard or seen information about KC before diagnosis, while 37% of community participants reported having heard or seen KC information. When community participants were asked what they knew about KC symptoms and treatments, many did not provide relevant or correct information. Almost a third (32%) of Hispanic and 16% of AI community participants strongly agreed that cancer is almost always fatal. A quarter of community participants (25%) and about a third of KC patients (31%) reported that cultural values or religious beliefs influenced their choice of medical treatment. Only 51% of community participants reported that they trusted their doctor‚Äôs judgements about their medical care, but 92% of patients reported that

they trusted their doctor's judgement. All patients were very confident about treatment decisions.

Conclusions: Barriers to healthcare access and lack of knowledge on KC, fatalism, and mistrust before diagnosis may be underlying factors causing KC treatment disparities.

58-T

Using a Multilevel Approach to Improve Equity in Cervical Cancer Screening and Follow-up at a Multisite Federally Qualified Health Center

Garcia S, Dang E, Oh A, He Z, Chan AL, Ching A, Hui G, Baezconde-Garbanati L, Tsui J

Purpose: This study investigated factors that influence cervical cancer screening and follow-up among diverse Federally Qualified Health Center patients to identify opportunities for change.

Methods: In June 2023, we interviewed and surveyed healthcare staff (providers, clinic staff, system leaders) to understand multilevel factors that impact cervical cancer screening and follow-up across four clinics in Los Angeles serving Asian and Latino patients. Three coders inductively and deductively coded qualitative interviews. We organized qualitative themes and quantitative data using the Exploration, Preparation, Implementation Sustainment (EPIS) Framework and descriptive statistics to identify ways to improve cervical cancer screening and follow-up.

Results: We collected 23 interviews and 23 surveys. In the inner context, we found high leadership motivation to improve cervical cancer outcomes and processes. Recommended screening modality and confidence in addressing patient concerns varied across healthcare staff. For example, healthcare staff noted uncertainty about HPV testing (71%), Pap testing (21%) and co-testing (38%) guidelines. Nearly 37% of healthcare staff reported being only slightly confident or not at all confident in addressing patients hesitant to receive a Pap test and more than a third reported low confidence in dispelling myths about cervical cancer screening. In the outer context, patient characteristics (not yet having sex, older patients) and healthcare environment/policies (long wait time to access referral, language discordance, difficulty obtaining results) were barriers. Bridging and innovation factors included community partnerships with referral specialists to improve referral experience and timely return of results, system-level screening guidelines, provider and staff trainings on guidelines and increasing confidence when speaking with patients about screening, and technology to support provider recommendations.

Conclusions: Findings highlight the need to implement multilevel strategies (e.g., clinic trainings, system-level policy adoption, policy level strategies to reduce barriers to follow up screening) to improve cervical cancer screening and follow-up.

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Year One Results of a Cluster-Randomized Community Trial to Optimize Colorectal Cancer Screening and Follow-up

Martinez E, Roesch S, Castaneda S, Largaespada V, Nodora JN, Rabin BA, Covin J, Ortwine K, Howard N, Preciado-Hidalgo Y, Gupta S

Purpose: To assess effectiveness of a regional mailed fecal immunochemical test (FIT) intervention at year 1 from a cluster randomized trial among community health center (CHC) patients who are not up-to-date with colorectal cancer (CRC) screening.

Methods: The San Diego Accelerating Colorectal Cancer Screening and Follow-up through Implementation Science (ACCSIS) project represents a partnership testing regional implementation of a Hub-and-Spoke model for increasing CRC screening and follow-up. The "hub" is a non-academic, non-profit organization. The "spokes" are 3 CHC systems that combined oversee over 66 clinic sites in San Diego and Riverside Counties. Using a cluster-randomized trial design, 9 clinics were randomized to intervention and 16 to usual care. The intervention included an invitation letter, a mailed FIT with completion instructions, and phone and text-based reminders. Year 1 intervention impact (of 3 years of planned intervention) was assessed as proportion completing screening among individuals not up-to-date at baseline, comparing intervention and non-intervention clinics using generalized estimating equation analyses and accounting for intracluster variation specifying clinic as a clustering variable.

Results: Among participating clinics, 27,845 patients who were age-eligible and not up-to-date with CRC screening at the time of randomization were included for analysis. Approximately 59% of participants were female and 60% were Hispanic. Over the year 1 observation period, screening completion proportion was 11.2 (95% CI, 3.9-18.5) percentage points (ppt) higher in the intervention (34.1%) than usual care (22.9%) group. Differences between intervention and usual care arm were higher for females (12.2 ppt; 95% CI, 4.6-19.8) than males (8.6 ppt; 95% CI, 1.0=16.2). Heterogeneity in differences by randomization arm was observed by racial and ethnic group, with the highest difference observed for Hispanic individuals (13.6 ppt; 95% CI, 8.5%-18.7%) and lowest in Black individuals (4.6 ppt; 95% CI, -0.9%-10.1%).

Conclusions: A regional mailed FIT outreach intervention is effective for increasing CRC screening rates across a broad array of CHC systems, including those who serve a large Hispanic population.

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Acceptability of HPV Take Home Screening: A Qualitative Study of Black Women Living with Type II Diabetes and Social Vulnerability

Mkuu R, Staras S, Hall J, Chakrabarti C, Harvey I, Salloum R, Woodard J, Barrow S, Ortega S, Donahoo W, Geode D, Shenkman E

Purpose: Women living in high social vulnerability areas (poverty), black women, and women with type 2 diabetes (T2D) are less likely to be screened for cervical cancer. Human papillomavirus (HPV) self-collection tests improve cervical cancer screening in underserved populations. We examined the acceptability of HPV self-collection among Black women with T2D living in socially vulnerable communities.

Methods: Qualitative semi-structured interviews were conducted with 29 black women with T2D living in communities with high social vulnerability. The Health Belief Model informed the development of the interview guide to gather data on the acceptability of HPV self-collection.

Results: Three main themes aligned with the Health Belief Model: (1) HPV self-collection provides a comfortable alternative to in-clinic HPV testing (perceived benefits); (2) HPV self-collection would result in awareness of current HPV status (health motivation); and (3) Women were concerned about collecting their sample accurately (perceived barriers).

Discussion/Conclusion: Black women with T2D living in communities with high social vulnerability identified multiple benefits of cervical cancer screening through HPV self-collection. Women are concerned about their ability to collect their samples correctly. Our findings call for future studies focusing on increasing self-efficacy and skills to collect HPV samples among Black women, those with chronic conditions like T2D, and those residing in underserved communities with high social vulnerability.

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Associations of Alcohol Consumption with Expression of CD44, CD24 and ALDH1A1 Stem Cell Markers in Benign Breast Biopsy Samples

Yaghjyan L, Heng YJ, Baker GM, Tamimi RM

Purpose: We investigated the associations of alcohol consumption with expression of CD44, CD24, and ALDH1A1 stem cell markers in cancer-free women with benign breast biopsies.

Methods: This study included 299 cancer-free women with biopsy-confirmed benign breast disease (BBD) within the Nurses' Health Study and Nurses' Health Study II cohorts. Percentage of each tissue type was measured on whole section images with a deep-learning technique. Immunohistochemistry (IHC) of stem cell markers was done on tissue microarrays. For each core, the IHC expression was assessed using a semi-automated platform and expressed as % of positively stained cells for each marker out of the total cell count. All expression measures were log-transformed. The data on alcohol consumption was obtained from semi-quantitative food frequency questionnaires. Information on other covariates was collected on initial questionnaire and updated biennially thereafter. We examined associations for recent (at the time of biopsy) and cumulative average alcohol consumption (from all questionnaire before the biopsy), modeled as a continuous variable (11g [drinks]/day). Generalized linear regression was used to examine the associations of alcohol with each marker's expression (in stroma and epithelium), while adjusting for known breast cancer risk factors and BBD subtype.

Results: In this study of 299 cancer-free women, 17.7% consumed ≥1 drink of alcohol per day at the time of biopsy and 16.7% had an average cumulative alcohol consumption ≥1 drink. Recent and cumulative average alcohol consumption were not associated with expression of CD44, CD24, or ALDH1A1 in stroma (recent: per drink/day=-0.09, 95% Confidence Interval [CI] -0.74,0.57; ≤=0.16, 95% CI 0.32,0.64; ≤=-0.02, 95% CI -0.40,0.35, respectively; cumulative average: ≤=-0.15, 95% CI -0.76,0.46; ≤=0.15, 95% CI -0.29,0.60; ≤=-0.01, 95% CI -0.35,0.34, respectively) and epithelium (recent: ≤=-0.03, 95% CI -0.36,0.31; ≤=-0.03, 95% CI -0.19,0.14; ≤=0.04, 95% CI -0.11,0.18, respectively; cumulative average: ≤=-0.01, 95% CI -0.32,0.29; ≤=-0.02, 95% CI -0.17,0.12; ≤=0.03, 95% CI -0.11,0.16, respectively).

Conclusion: Our findings suggest that alcohol use is not associated with CD44, CD24, and ALDH1A1 in cancer-free women with benign breast biopsies

62-T

Awareness of Human Papillomavirus (HPV) and its Vaccine and Telehealth: Results from the Health Information National Trends Survey (HINTS) 6, 2022 in the United States

Desai M, Egab I, Ogochukwu JE, Malgave D

Background: Human Papillomavirus (HPV) vaccination is essential to prevent occurrences of various HPV-associated cancers. The awareness of HPV and its vaccine could be related to telehealth. This study aimed to examine the association between awareness of HPV and HPV vaccines and receiving telehealth for health care within the past year.

Methods: We used data from the Health Information National Trends Survey (HINTS) 6 (N=5,887). The dependent variable was awareness of HPV and the HPV vaccine. The independent variable was those who received telehealth care from a doctor or health professional in the past year. We performed weighted multivariable logistic regression to determine the association of awareness of HPV and its vaccine with receiving healthcare using telehealth while adjusting for age, gender, race, education, and census region.

Results: The study sample consisted of 68.28% awareness of HPV and 63.47% awareness of the HPV vaccine. After controlling for covariates, we found those who were aware of the HPV and HPV vaccine have received higher telehealth care in the past year (aOR=1.40, 95% CI:1.11-1.78; aOR= 1.40, 95% CI:1.09 -1.80, respectively). In the adjusted model, the awareness of HPV was higher among females (aOR=2.0, 95%CI:1.60-2.48) and those who had education status as a college graduate or more (aOR=3.80, 95%CI: 2.59-6.56). In the adjusted model, the awareness of the HPV vaccine was higher among females (aOR= 2.68, 95%CI:2.13-3.36) and those who had education status as college graduate or more (aOR=4.68,95%CI:2.77-7.91). Non-Hispanic Whites had significantly higher adjusted odds of being aware of HPV and its vaccine than other race/ethnicity groups among those who received telehealth care in the past year.

Conclusion: Hence, public health programs could be encouraged to promote the use of telehealth to increase awareness, reduce the stigma associated with HPV vaccination, and boost recommendations and uptake of HPV vaccination.

63-T

Colorectal Cancer Screening Uptake across Age Groups within an Academic Health System

Demb J, Rice K, Harris V, Agnihotri P, Tai-Seale M, Liu L, Martinez ME, Gupta S

Purpose: To compare on time uptake of colorectal cancer (CRC) screening between adults ages 45-49 and ages 50-75 within the University of California San Diego Health System (UCSDHS).

Methods: We conducted a cohort study of adults ages 45-75 receiving care at UCSDHS. Included adults were insured and eligible, but not up to date for average risk CRC screening (2021-2023). Adults with history of inflammatory bowel disease, CRC, colorectal polyps or colectomy were excluded. We compared 1-year and overall cumulative proportion of screening completion between adults ages 45-49 and adults ages 50-75 from start of screening eligibility through September 2023; ages were categorized based on age at start of follow up. We also examined preferred screening test of screening completers, and if completion differed across sex, race and ethnicity, insurance status and neighborhood-level social vulnerability index. In each age group, we examined the association between screening completion and sociodemographic factors using Poisson regression, yielding rate ratios (RR) and 95% confidence intervals (95% CI).

Results: There were 15,262 adults ages 45-75 eligible but not up to date with CRC screening between 2021-2023 (5,080 ages 45-49 [33%]). Cumulative screening completion in adults ages 45-49 was 24% (95% CI: 23%-24%) compared to 40% (95% CI: 40%-41%) in adults ages 50-75 at 1 year. At the end of study follow-up, screening completion in adults ages 45-49 was 53% (95% CI: 51%-54%) compared to 62% (95% CI: 61%-63%) in adults ages 50-75. Most common screening tests used were colonoscopy (74% in both age groups) and fecal immunochemical test (age 45-49: 16%; age 50-75: 17%). Completion rates in adults ages 45-49 vs. ages 50-75 did not differ across other sociodemographic factors. Adults ages 45-49 (RR: 0.85, 95% CI: 0.73-0.97) and ages 50-75 (RR: 0.79, 95% CI: 0.75-0.83) with public insurance had lower likelihood of CRC screening completion compared to those with private insurance.

Conclusions: CRC screening completion was lower in adults ages 45-49 compared to adults ages 50-75 between 2021-2023. Adults in both groups with public insurance were less likely to complete CRC screening. Future interventions should emphasize on time uptake of screening in this younger population.

64-T

Investigating the Relationship between Self-Rated Health and Colorectal Cancer Screening Behaviors among Men in the United States

Sedani AE, McCall C, Korous KM, Rifelj KK, Rogers CR

Purpose: This study examined the association between self-rated health (SRH) and colorectal cancer screening (CRCS) behaviors (participation history, up-to-date status, intention), among a racially and economically diverse sample of U.S. men.

Methods: Self-identified men that were CRCS-age eligible (45-75 years) were recruited from online panels. To adjust for confounding, several sociodemographic characteristics were included in the analyses including age, self-identified race/ethnicity, marital status, household income, and census region. Multivariable logistic regression models were employed to estimate adjusted Odds Ratios (aORs) and corresponding 95% confidence intervals (CIs); we also stratified by educational attainment.

Results: A total of 501 men were included in the study sample. Overall, 377 men (75%) reported their SRH as good or better. Regarding CRCS behaviors, 66% reported a history of participating in CRCS, and the majority (82%) reported planning to obtain CRCS in the future. However, only 45% of participants reported being up-to-date with CRCS. No significant associations were observed for up-to-date status (aOR: 1.37, 95% CI: 0.84, 2.23) or participation history (aOR: 1.16, 95% CI: 0.71, 1.89). Although not significant, the aORs for CRCS behaviors was higher among those in the high school or less educational attainment group compared to the adjusted ORs among those that reported their highest educational attainment as completing at least some college. After adjusting for confounding, the odds of planning to obtain CRCS in the future were 1.73 times higher (95% CI: 1.01, 2.97) among men that self-reported their SRH as good or better compared to individuals that self-reported their SRH as fair or poor.

Conclusions: SRH is one of the most frequently used research indicators, yet this study was the first to address unanswered questions regarding its influence on CRCS behaviors among men. Better understanding the potential link between SRH and CRCS behaviors among men holds promise for improved patient-provider communication and targeted interventions. Future research must meticulously unravel the dynamics guiding resistance to endoscopic examinations of the colon and rectum among men.

65

Pathways to Diagnosis for a Diverse Cohort of Ovarian Cancer Patients in North Carolina

Thompson CA, Kuo T, Villenthi A, Hinton SP, Halula JC, Ritzwoller DM, Wheeler SB, Bae-Jump VL, Lyratzopoulos G, Baggett CD, DeRouen MC

Purpose: Ovarian cancer is an important driver of overall cancer burden in women, with most diagnosed at advanced stages. The absence of reliable screening makes diagnosis challenging, increasing the stage and symptom burden at diagnosis. We describe patterns of symptom-related pre-diagnostic healthcare utilization in a population-based sample of epithelial ovarian cancer (OCa) patients residing in North Carolina (NC; a highly diverse and rural state).

Methods: Study data are derived from a novel linkage between the NC Central Cancer Registry and multiple payer insurance claims for adult patients diagnosed with OCa (2009-2019) and continuous enrollment in Medicaid, Medicare, or private insurance in the 12 months before diagnosis. We analyzed claims for potential OCa symptoms before diagnosis to determine the first provider type visited, and count of days from initial presentation to the registry date of diagnosis, as the "diagnostic interval".

Results: The study population includes 2,693 patients (44% of all NC OCa diagnosed 2009-2019) who were 82% white, 14% black, 32% rural residents, 51% insured by Medicare, 27% Medicaid, and 19% private; 65% were diagnosed with distant stage disease, and 85% with high grade tumors. Among patients with symptom-related claims prior to diagnosis (N=2,487; 92% of the cohort), nearly half (45%) initially presented to primary care, 17% to ED, and 17% to specialist care (5% gynecology, 3% gastroenterology, 3% oncology, 6% other). Initial presentation to primary care was more common for white (46%) than black patients (39%). ED presentations were highest among <50-year-olds (25%), higher for black (25%) than white patients (16%), and higher for those insured with Medicaid (23%) than Medicare or private payer (both 16%). Median diagnostic intervals in days ranged from 31 for those initially presenting to the ED, to 156 for primary care, and 238 to gastroenterology.

Conclusions: We document a high degree of heterogeneity in the type of initial healthcare encounters and the length of the diagnostic intervals among women with OCa, as a first step to understanding associations with tumor and healthcare factors and prognosis. Our findings may provide insight for tailored healthcare interventions to improve earlier detection of OCa.

66

Patterns and Factors Associated with Breast Cancer Detection Methods in California Women

Lee AW, Solis C, Tubman S, Wells N

Purpose: Improvements in breast cancer survival have largely been attributed to mammography, but a study using 2003 national survey data noted a large proportion of breast cancer patients with an initial mode of detection other than a mammogram. It is unclear what factors may be associated with breast cancer detection methods and if this previous finding has been observed after, especially with the recommended screening age being raised from 40 to 50 in the November 2009 United States Preventive Services Task Force (USPSTF) guidelines.

Methods: We used cross-sectional data from the California Health Interview Survey (CHIS) in 2009 and 2011-12. Women, ages 30 and older who were diagnosed with breast cancer and reported having previously received a mammogram were included. The distribution of initial mode of breast cancer detection was compared between the two time periods using Chi-square tests. In addition, logistic regression models were used to examine the association between various sociodemographic and lifestyle characteristics and breast cancer detection methods using odds ratios (ORs) and 95% confidence intervals (CIs).

Results: We did not observe a significant difference in initial mode of breast cancer detection when comparing 2009 and 2011-12 although more than a third of breast cancer patients (35.6%, CI 32.9%-37.9%) reported their cancer being self-detected in the latter period. After adjusting for age, we found that those who had lived in the U.S. for less than half their life (OR=2.18, 95% CI 1.06-4.49), were below 100% of the federal poverty level (OR=2.20, 95% CI 1.29-3.76), and were underweight (OR=2.84, 95% CI 1.41-5.73) were more than twice as likely to self-detect their breast cancer.

Conclusions: Although mammography is known to be an important breast cancer prognostic factor, self-detection of breast cancer remains common. Characteristics that may be associated with self-detected breast cancer include living in poverty, being a recent immigrant, and having a lower body mass index. Although more research is needed to understand why certain women may be more likely to detect their breast cancer with a method other than mammography, these findings may be useful in developing strategies to address disparities in breast cancer outcomes.

67-T

Relationship between Upper Endoscopy Surveillance and Emergency Presentation of Esophageal Adenocarcinoma among Eligible Older Adults

Soppe SE, Peacock Hinton S, Thompson CA.

Purpose: Due to the impact of length- and lead-time biases on studies of upper endoscopy surveillance and survival, the American Gastroenterological Association has raised doubts as to its benefits for improving outcomes for patients with esophageal adenocarcinoma (EAC). This study aims to examine the relationship between surveillance and emergency presentation (EP), or emergency department (ED) involvement in cancer diagnosis, which is associated with poor EAC outcomes. Because males are the recommended target population for surveillance, this relationship was examined separately by patient sex.

Methods: Patients diagnosed with EAC between 2008 and 2017 were identified in SEER-Medicare among those 70+ years old at diagnosis with 5+ years of pre-diagnostic continuous enrollment in Medicare and evidence of a clinical indication for upper endoscopy (Barrett's esophagus, GERD, and/or hiatal hernia) at least 3 to 5 years prior to diagnosis (N=1,211). The exposure, surveillance, was defined as a claim for upper endoscopy at least 6 months to 3 years before EAC (the "pre-diagnosis period"). The outcome, EP, was defined as an ED visit in the 30 days before EAC diagnosis. Linear risk regression was used to estimate adjusted prevalence differences for the relationship between upper endoscopy and EP with an interaction term to assess effect modification by patient sex.

Results: 277 eligible patients (23%) had an upper endoscopy during the pre-diagnosis period. 30% of male patients had EPs compared to 40% of female patients. After adjustment, upper endoscopy in the pre-diagnosis period was associated with a 12-percentage point (95% CI: 5%, 18%) reduction in the prevalence of EP on the absolute scale for men and a 22-percentage point (95% CI: 10%, 34%) reduction for women. However, statistical power was not sufficient to confirm the presence of effect measure modification by sex.

Conclusions: In a population of patients with confirmed EAC and an indication for surveillance, surveillance completion was associated with reduced likelihood of EP, an endpoint unaffected by lead-time bias and related to poorer outcomes. Though only males are considered part of the target population for surveillance, upper endoscopies were inversely related to EP for both males and females.

68-T

POSTER WITHDRAWN

69-T

Second Hand Smoking Impacts on Children as a Result of Domestic Smoking - A Pilot Study in Urban India

Francis DL, Saravanan SP

Background: Smoking has a harmful impact on health not just for smokers but also for others around them owing to secondhand smoke (SHS) exposure in persons of all ages and genders. If their parents smoke, their children may be exposed to tobacco products in a variety of ways. SHS exposure in children is very common in the household environment. The dangers of secondhand smoke (SHS) are well documented, and substantial data suggests that children exposed to tobacco smoke are at a higher risk of developing childhood malignancies. Urine cotinine is an excellent method for identifying smokers and determining children's SHS exposure from their parents. The present study examines the impact of secondhand smoke exposure on children in urban India. The purpose of this study was to look into the relationship between parental smoking and the presence of cotinine in children's urine.

Methods: A pilot study with 50 smoking (Group A) and non-smoking (Group B) parents and their children was done. After describing the purpose of the study, demographic data, frequency and duration of smoking, domestic smoke exposure, and biological urine samples in sterile containers were collected from all participants. The Fastep quick diagnostic test kit was used to determine the presence of cotinine in the urine of the participants, with a cut off value of 100ng/ml urinary cotinine.

Results: A high prevalence (100%) of urinary cotinine was identified among smoker parents and children (Group A). This association was directly reliant on the domestic smoking habit and indirectly depending on the smoker's behaviors after smoking. However, nonsmokers and their children (Group B) had no signs of cotinine in their urine.

Conclusion: The amount of cotinine in the urine of parents and children was found to be correlated in this study, suggesting the incidence of domestic smoking exposure due to the parents' smoking habit. Although preventing indoor home smoking will reduce children's tobacco exposure, there is a need to discover additional sources of smoking exposure and maintain effective monitoring and enforcement of home smoking bans in India.

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Understanding the Influence of Perceived Stress and Everyday Discrimination on Prostate Cancer Screening

Kensler KH, An A, Morley F, Davuluri M, Mao J, Nanus DM, Phillips E, Tamimi RM

Purpose: We examined the association between perceived stress and discrimination and the receipt of prostate cancer (PC) screening.

Methods: We identified 5,695 males ages 55-69 without a history of PC and with available electronic health record (EHR) and survey data in the All of Us Research Program. Perceived stress was measured at the time of cohort enrollment using Cohen's Perceived Stress Scale and established cutpoints were applied to identify participants with low, medium, or high stress. Perceived discrimination was measured using the Everyday Discrimination Scale and categorized into quartiles. Receipt of PC screening was ascertained in the EHR by determining whether the participant had received at least one prostate-specific antigen test in the two years prior to enrollment. The associations between perceived stress and discrimination and PC screening were evaluated in logistic regression models with and without adjustment for factors related to healthcare access and utilization.

Results: 39% of men underwent PC screening in the two years prior to cohort enrollment. 42% and 3% of men reported medium or high levels of stress, respectively. 80% of men were non-Hispanic White (NHW), 8.2% non-Hispanic Black (NHB), 6.5% Hispanic, and 5.7% reported another race or ethnicity. Younger men, NHB men, and men with lower income and education were more likely to report higher levels of stress and discrimination. In age-adjusted models, men with high stress were less likely to have received PC screening (OR=0.60, 95% CI 0.40-0.87 vs low stress). However, there was no association between perceived discrimination and receipt of PC screening (OR=0.98, 95% CI 0.84-1.15, comparing highest and lowest quartiles). These findings were similar after adjustment for factors related to healthcare access and utilization. Hispanic (OR=0.77, 95% CI 0.60-0.99) and NHB men (OR=0.81, 95% CI 0.63-1.02) were less likely to have received PC screening relative to NHW men, but the associations between perceived stress (p-het.=0.39) and discrimination (p-het.=0.92) and PC screening did not differ by participant race and ethnicity.

Conclusions: Higher levels of stress were associated with lower rates of PC screening. Men with high levels of stress may not prioritize preventive healthcare.

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Using Implementation Mapping to Prepare for the Implementation of a Hereditary Cancer Clinic for the Clinical Management of Patients at High Risk of Inherited Cancer

Allen CG, Hughes K, Donahue C, Gallegos S, Melvin C, Wallace K, Meeder K, Neelon B

Purpose: We use the five-step implementation mapping (IM) process to support a newly created Hereditary Cancer Clinic (HCC), a patient-centered integrated care model for the management of individuals and families with cancer genetic mutations.

Methods: We conducted interviews with the implementation team, specialist stakeholders, and patients using the Consolidated Framework for Implementation to identify needs, create implementation outcomes and objectives. Based on these findings, we created materials and protocols for each group. Finally, we developed an evaluation plan using the RE-AIM framework and Proctor's Implementation Outcomes. The study compared the effectiveness of the HCC structure to the previous unorganized system for managing patients with pathogenic variants for hereditary cancer conditions.

Results: The implementation team (n=4) indicated high receptivity for the HCC, with facilitators including leadership engagement. To support the implementation team, we developed a blueprint of the 11-step workflow for the HCC and guided practice to ensure understanding of the protocol. Specialists (n=9) described high tension for change and that the HCC was a necessary service for properly managing patients. We outlined 9 steps specialists would need to complete after an individual is referred to them from the HCC. We focused on recruiting program champions from across specialists by raising awareness about the HCC. High-risk patients (n=11) described the HCC as a "one stop shop" and an opportunity for centralizing services compared to current standard. We enhanced the HCC website by better defining the value of the HCC and differences between genetic counseling and the HCC.

Conclusions: The study's findings support MUSC's ongoing clinical program and contribute to research at the intersection of implementation science, learning health systems, and precision medicine. Researchers gained insights into patient, specialist, and implementation team needs, aiding in the understanding and improvement of the HCC at MUSC. This approach enables real-time impact assessment and long-term evaluation to enhance genomics in clinical care.

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Validity and Reliability of National Health Interview Survey Questions on Cancer Screening

Bowles EJA, Nash M, Bravo P, Comstock B, Fleckenstein L, Schartz E, Gao H, Pflugeisen C, Smith C, Shetty P, Ornelas I, Neslund-Dudas C, Mou J, Kessler L

Purpose: In this CDC-funded special interest project, we estimated the validity and reliability of self-reported screening patterns for breast, colorectal, cervical, and lung cancer on the National Health Interview Survey (NHIS) in an embedded randomized trial of a web versus phone survey.

Methods: By mail, we recruited people eligible for breast, cervical, colorectal, and/or lung cancer screening from four US healthcare systems from 2022-2023. Participants were eligible for cancer site-specific screening questions based on age, sex, and smoking history per US Preventive Services Task Force guidelines. We randomized people to web vs phone surveys, allowing them to switch modes. We assessed validity by original randomization group comparing survey data concordance with automated electronic health record (EHR) data (gold standard). People were randomized to complete a subsequent survey 1 vs 3 months later using the same mode as the first survey; we assessed reliability comparing concordance of subsequent and initial survey responses.

Results: Among 12,564 letters mailed, 1,305 (10%) people completed an initial survey (348 web, 957 phone) and 566 (43%) completed a subsequent survey. Validity of initial survey responses for timing of their most recent test (<1yr, 1-<2yrs, 2-<3yrs, 3-<5 yrs, 5+yrs/no prior test) by cancer site and survey mode was: breast: 47% (95%CI 40-54%) web vs 42% (37-48%) phone; cervical: 36% (28-44%) web vs 32% (25-38%) phone; colorectal: 45% (39-51%) web vs 46% (42-51%) phone; andlung: 60% (51-68%) web vs 50% (44-57%) phone. Reliability for timing of their most recent test by cancer site and time since initial survey was: breast: 76% (66-84%) 1mo vs 68% (59-77%) 3mo; cervical: 63% (51-73%) 1mo vs 60% (48-71%) 3mo; colorectal: 76% (67-83%) 1mo vs 65% (56-73%) 3mo; and lung: 74% (61-83%) 1mo vs 71% (57-82%) 3mo.

Conclusions: Validity of self-reported screening timing did not differ by survey mode; concordance may have been low because people telescoped timing of their most recent test. Understanding accuracy of self-reported cancer screening timing from the NHIS is critically important to assist in program and intervention development for the US to reach Healthy People 2030 goals of improving cancer screening and early detection.

Lifestyles Behavior, Energy Balance & Chemoprevention

73-T
Association Between Sleep Duration and Survival Among US and UK Cancer Survivors, NHIS 1999-2019 and UK Biobank 2004-2022

Cao C, Ligibel JA, Matthews CE, Courneya KS, Friedenreich CM, Yang L

Purpose. To investigate the dose-response relationship between sleep duration and mortality outcomes in US and UK cancer survivors.

Methods. This prospective study pooled data on 37,922 cancer survivors from the US National Health Interview Survey (NHIS) and 38,267 cancer survivors from the UK Biobank (UKBB). Sleep duration was self-reported as hours/day and further categorized as <7, 7, >7 hours/day. Participants were linked to mortality data from their interview date through December 31, 2019 for NHIS and December 19, 2022 for UKBB. Cox proportional hazards regression models were applied to evaluate the association between sleep duration and all-cause mortality and cause-specific mortality (NHIS only). Restricted cubic splines were used to assess the possible nonlinear relationships.

Results. Among 76,189 cancer survivors (mean [SD] age, 59.8 [7.3] years; 63.0% males; 92.7% White individuals), 26.3% reported short and 42.3% reported long sleep duration. During up to 20 years follow-up, 15,598 deaths occurred. After adjusting for sociodemographic and lifestyle factors and chronic conditions, the U-shaped relationship between sleep duration and all-cause mortality suggested that the lowest hazard ratio (HR) was observed for 7 hours/day of sleep duration, particularly among those with diagnoses of digestive, respiratory, skin, breast, genitourinary, gynecologic, and hematologic cancers. Compared with those who had 7 hours/day of sleep, survivors who reported sleep hours <7 hours/day and >7 hours/day had 14% (HR, 1.14, 95% CI: 1.09 to 1.20) and 21% (HR, 1.21, 95% CI: 1.17 to 1.26) elevated risks of overall mortality. The results were similar in the NHIS and UKBB cohorts. In US cancer survivors, the relationship between sleep duration and survival was similar for both cancer-related and non-cancer-related causes of death. The relationship between short sleep duration (<7 hours/day) with survival was more apparent in survivors who were <65 years, male, non-obese, and currently smoking and drinking alcohol (P for interaction< .05).

Conclusions. Short and long sleep duration was associated with all-cause, cancer and non-cancer mortality among cancer survivors. Sleep duration is a key component to monitor during cancer survivorship.

74-T

Association between Survivor-Caregiver Relationship and Geographical Distance with Lifestyle Behaviors among Participants of a Psychosocial Intervention

Werts-Pelter SJ, Badger T, Lopez-Pentecost M, Sikorskii A, Segrin C, Crane TE

Purpose: Social support is a recognized factor impacting lifestyle behavior change in survivors, though the implications of relationship type and proximity to the survivor remain unknown. This secondary analysis of a dyadic (Survivor-Caregiver) psychosocial intervention to improve symptoms aims to determine if relationship type and geographical distance impact lifestyle behaviors in cancer survivors.

Methods: This supplemental lifestyle behavior analysis within a dyadic psychosocial intervention incorporated 24-hour telephone diet-recall and 7-day Physical Activity Recall at baseline and week 17 to measure change in diet quality and physical activity. Diet quality was assessed using the Healthy Eating Index (HEI; range 0-100, greater score indicative of higher diet quality) derived from the average of two 24-hour dietary recalls. Total minutes and intensity (METs; metabolic equivalent of task) were used to assess physical activity.

Results: Of the 67 dyads that completed the supplemental assessment of lifestyle behaviors, the majority included female survivors of breast cancer (75.9%). Most participants lived with their study partner (n=45, 67.2%), 16 (23.9%) lived 25 miles away, and 5 (7.5%) > 50 miles away. Most study partners were spouses (n=29, 43.3%) or a parent/child of the survivor (n=25, 37.3%). Other relationship types included friends (n=8, 11.9%), siblings (n=4, 6.0%), and cousins (n=1, 1.5%). Compared to dyads that lived together or less than 25 miles apart, survivors who lived more than 50 miles from their study partner had a significantly greater decrease in HEI score between baseline and week 17 (mean±SD: -19.2±4.5, p=0.01, 95%CI: -8.9, -1.3). There were no differences in survivor HEI score, METs, or minutes of physical activity between timepoints based on dyad relationship and no differences in physical activity change based on distance between study partners.

Conclusions: While relationship type between caregiver and survivor did not have a significant impact on diet or physical activity, greater physical distance between dyads had a significant negative impact on diet quality as measured by the HEI. These findings suggest that proximity between dyad members may hold implications on dietary behaviors in dyadic studies.

75-T

Association of Diet with Fusobacterium Nucleatum Enrichment and Presence in the Colorectal Tumor-Associated Microbiome

Hill CM, Hullar MAJ, Reedy AM, Male RC, Ammar H, Kahsai O, Ma N, Curtis, K, Ogino S, Randolph TW, Newcomb PA, Phipps AI

Purpose: Fusobacterium nucleatum (Fn) is an oral bacterium that has been associated with colorectal cancer (CRC) etiology and survival outcomes. However, CRC risk factors that contribute to Fn enrichment and presence in CRC have not been well studied. Since diet is strongly tied to many aspects of the gut microbiome and CRC, we examined the association of self-reported dietary factors with Fn enrichment and presence in CRC.

Methods: Data were obtained from a subset of participants in the Puget Sound CRC Cohort (n=555). Self-reported dietary factors included vegetable, fruit, red meat, and alcohol intake. Abundance of Fn was quantified in tumor tissue, and in matched normal colonic tissue, via droplet digital PCR. Fn enrichment was defined as the continuous difference in Fn abundance (normalized using a eukaryotic house-keeping gene) between patient-matched tumor and normal tissue samples (mean=0.034, SD=0.279). Fn presence in tumor was classified categorically as negative (N=292), low (Fn abundance >0 but <median level among those positive for Fn, N=131), or high (abundance ≥median, N=132). Linear regression and logistic regression were used to estimate associations of dietary factors with Fn enrichment and presence, respectively. Analyses were adjusted for age, sex, smoking status, non-steroidal anti-inflammatory drug use, and Fn abundance in normal tissue (Fn enrichment only).

Results: Mean Fn enrichment was 0.047 and 0.006 among those who reported <1 serving of vegetables and of fruit per day, respectively; by comparison, Fn enrichment was 0.043 and 0.038 among those with >1 servings of vegetables and fruit per day, respectively. Differences in Fn enrichment across levels of vegetable and fruit consumption were not statistically significant (p=0.14 and p=0.17, respectively). Similarly, there were no significant associations when examining red meat intake, alcohol intake with respect to Fn enrichment or Fn presence.

Conclusions: Our findings suggest that self-reported dietary factors like vegetable, fruit, red meat, and alcohol intake may not be associated with Fn enrichment or presence in the colorectal tumor-associated microbiome.

76-T

Associations between Post-Treatment Dietary Patterns and Quality of Life in Colorectal Cancer Patients

Smith KS, Li X, Hoogland AI, Gigic B, Small BJ, Gonzalez BD, Oswald LB, Sleight AG, Nguyen N, Lorona NC, Damerell V, Komrokji KR, Mooney K, Playdon MC, Ulrich CM, Li CI, Shibata D, Toriola AT, Ose J, Peoples AR, Siegel EM, Bower JE, Schneider M, Figueriredo JC, Crowder SL, Jim HSL

Purpose: Limited knowledge exists about the effects of diet on cancer outcomes; herein, we characterized post-treatment dietary patterns and their association with cross-sectional and longitudinal changes in quality of life (QOL) in colorectal (CRC) patients.

Methods: The ColoCare Consortium is an international, multi-center prospective study among patients newly diagnosed with colorectal cancer of any stage. Participants from sites in the United States with food frequency questionnaire (FFQ) data at six-months after enrollment (at a time when finishing treatment) and European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) data at six- and twelve-months post-enrollment were included in the present study. Principal Component Analysis (PCA) with Varimax rotation was used to identify dietary patterns that emerged and calculate adherence scores for all participants within each dietary pattern, with higher scores indicating greater adherence. Mixed models were used to examine the effect of each dietary pattern on changes in QOL over time, controlling for cancer stage, gender, and body mass index.

Results: Participants (N=174) were, on average, aged 56ffl14 years and were mostly female (51.5%), non-Hispanic (97.1%), and White (83.3%) with a BMI of 27.9ffl6.1 kg/m2. PCA revealed two emerging dietary patterns: "Western" characterized by processed meats, refined grains, and sugars; and "Prudent" characterized by lean proteins, fruits, and vegetables. Higher adherence to a Western diet was associated with worse social functioning and greater financial difficulties at 6 months (FE=-13.7, p<0.01; FE=9.9, p=0.05, respectively). Higher adherence to a Western dietary pattern was associated with changes in lack of appetite from six to twelve months (FE=1.7, p=0.04). Neither dietary pattern was associated with changes in global health and quality of life score (p>0.05).

Conclusions: Social and financial difficulties are concurrently associated with following a Western diet post-treatment. However, more research is needed to understand specific social and financial challenges experienced by CRC patients and develop supportive care interventions to address these issues.

77-T

Associations of Pre-Diagnosis Physical Activity with Treatment Tolerance and Treatment Efficacy in Breast Cancer Patients with Neoadjuvant Chemotherapy

Lin D, Sturgeon KM, Muscat JE, Zhou S, Hobkirk AL, O'Brien KM, Sandler DP, Thompson CL

Purpose: A higher pre-diagnosis physical activity (PA) level is associated with lower all-cause mortality in breast cancer (BCa) patients. However, the association between pre-diagnosis PA level and pathological complete response (pCR) is unclear. We investigated the association between pre-diagnosis PA level and chemotherapy completion, dose delay, and pCR in BCa patients receiving neoadjuvant chemotherapy (NACT).

Methods: 180 stage I-III BCa patients receiving NACT (mean [SD] age of diagnosis: 60.8 [8.8] yrs) in the Sister Study were included. Self-reported recreational and total PA levels before BCa diagnosis were collected at baseline enrollment (Q1) and converted to metabolic equivalent of task-hours per week (MET-hrs/wk). The average interval from Q1 to BCa diagnosis was 7.4 yrs. Chemotherapy completion was defined as completing all planned chemotherapy regimens and cycles. Dose delay was defined as actual duration of chemotherapy >7 days longer than planned. The pCR was defined as no invasive or in situ residual in breast or lymph node (ypT0 ypN0) following the completion of NACT. Multivariable logistic regression analyses estimated odds ratios (ORs) and 95% confidence intervals (CIs).

Results: In this sample, 45 (25.0%) BCa patients achieved pCR. Pre-diagnosis recreational PA was not associated with chemotherapy completion (Highest tertile vs. lowest tertile: OR=0.97, 95% CI=0.33-2.87; Ptrend=0.92), dose delay (OR=1.45, 95% CI=0.55-3.84; Ptrend=0.45), or pCR (OR=1.28, 95% CI=0.49-3.34; Ptrend=0.44). The observation was similar in pre-diagnosis total PA. Meeting the recommended level of recreational PA before BCa diagnosis was not associated with pCR overall (≥7.5 vs. <7.5 MET-hrs/wk: OR=1.33, 95% CI=0.59-3.01) or by tumor subtypes (Hormone receptor positive [HR+]: OR=2.32, 95% CI=0.70-7.70; HR-: OR=0.70, 95% CI=0.21-2.32; human epidermal growth factor receptor 2 positive [HER2+]: OR=0.66, 95% CI=0.14-3.03; HER2-: OR=1.93, 95% CI=0.68-5.50).

Conclusions: PA level before BCa diagnosis was not associated with treatment tolerance or treatment efficacy in BCa patients receiving NACT in this population. Given the limited existing research in this topic, future investigations are needed to better understand the impact of diagnosis PA level on BCa treatment.

78-T

Demographic and Disease Characteristics Associated with Muscle-Strengthening Activities Among Cancer Survivors

Starikovsky J, Freeman H, Wolter M, Hickey B, Solk P, Reading JM, Carden LB, Alexander J, Wang S, Booker R, Phillips SM

Purpose: Muscle-strengthening activities (MSA) are associated with improved health outcomes in cancer survivors. This study examined the potential correlates of MSA characteristics (i.e., guidelines [≥2 time/week], types) with demographic, disease, and aerobic exercise (AE) among cancer survivors.

Methods: Non-metastatic, post-treatment cancer survivors [N=555; Mage= 56.5(SD=14.7); 53.7% female] within 5 years of primary cancer diagnosis completed the Muscle-Strengthening Exercise Questionnaire (MSEQ) to assess the following MSA characteristics: frequency, time, intensity (0=extremely easy to 10=extremely hard) and type [resistance exercises (RE), bodyweight exercise (BW), weight machines (WM), holistic exercises (HE)]. Demographics and health history questionnaires and the Godin Leisure Time Exercise Questionnaire were also completed. Chi-Square tests were used to examine potential correlates (gender, age, time since diagnosis, treatment type, meeting AE guidelines, race and ethnicity and obesity status) of meeting MSA guidelines and engagement in MSA types. Descriptive statistics were calculated for MSEQ variables.

Results: About half (49.4%) of participants met MSA guidelines; 54.6% reported engaging in MSA ≥1time/week. Of those who reported any MSA, the average frequency was 3.2 (SD=1.5) days per week for an average of 37.2 (SD=32.8) minutes at an average intensity of 5.9 (SD=2.1). Participants reported engaging in various types of resistance exercises: RE (78.7%), BW (70.4%), WM (45.8%), and HE (35.2%). Those who met AE guidelines and were non-obese were more likely to meet MSA recommendations (p<.05). Women were less likely to do WM (p<.001) and more likely to do HE (p<.001) compared to men. Those who met AE guidelines were more likely to do WM and BW. Younger participants (<60 years) were more likely to do WM and BW (p<.05). Individuals with obesity and those who had surgery were more likely to do HE (p<.05).

Conclusion: Demographic, disease characteristics and meeting AE guidelines may be related to MSA participation among cancer survivors. Exploring preferences for MSA and other potential predictors of MSA engagement may increase understanding of effective MSA promotion methods among cancer survivors.

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Hormone Therapy Use and Young-Onset Breast Cancer: A Premenopausal Breast Cancer Collaborative Group Study

O'Brien KM, House MG, Goldberg M, Jones ME, the Premenopausal Breast Cancer Collaborative Group, Schoemaker MJ, Swerdlow AJ, Nichols HB, and Sandler DP

Purpose: Estrogen plus progestin combination hormone therapy (EP-HT) use is an established risk factor for breast cancer in older, post-menopausal women. Less is known about hormone use in young women, who may use following gynecological surgery or because of peri-menopausal symptoms. We investigated the relationship between hormone therapies and breast cancer incidence before age 55 by pooling data from 9 prospective cohorts participating in the Premenopausal Breast Cancer Collaborative Group.

Methods: We used Cox proportional hazards regression with age as the time scale to estimate pooled hazard ratios (HRs) and 95% confidence intervals (CI) for the association of hormone therapy use (ever and type) with incident young-onset breast cancer. Models were stratified by study and adjusted for potential confounders. The sample included 399,744 women, 6,656 (1.7%) of whom developed breast cancer before age 55 (median follow-up=7.5 years).

Results: Average age at enrollment was 42.3 years; 16% of non-cases and 13% of cases reported ever using hormone therapy, with EP-HT (8% of non-cases, 6% of cases) more common than unopposed estrogen (E-HT; 6% of non-cases, 4% of cases). There was no clear association between ever HT and young-onset breast cancer (HR=0.95, 95% CI: 0.87-1.04). The EP-HT association was also near null (HR=1.03, 95% CI: 0.92-1.15), but we observed an inverse association between E-HT and young-onset breast cancer (HR=0.86,95% CI: 0.74-0.99). The inverse associations between E-HT and breast cancer were potentially stronger among premenopausal women and for in situ or estrogen receptor positive tumors.

Conclusions: The inverse association between E-HT and young-onset breast cancer is consistent with previous studies of later-onset breast cancer. Our results do not support a strong positive association between EP-HT use and young-onset breast cancer.

80-T

Incorporating Parental Priorities and Desired Features into an Obesity Risk Reduction Mobile Application

Goggans SL, Thompson JT, Weber SJ, Mulvaney SA, Faiola A, Brown MB, Maamari L, Hull PC

Purpose: The purpose of this study was to present how qualitative formative research informed the design of a mobile application (app) for parents of preschool age children to support healthy behaviors and reduce future risk for obesity and associated diseases, such as cancer.

Methods: In 2021, we conducted qualitative interviews (N=30) of primary caregivers of 2-5-year-old children who use mobile applications to ask about parent practices, parenting areas of improvement, priorities, smartphone use, and app feature preferences. Participants also rated potential app features on importance and frequency of use. We utilized the interview findings to guide the development of specific app features. We created a matrix to align the interview themes with the highly-rated potential app features and incorporated the features into the Children Eating Well (CHEW) app.

Results: Participants desired features to capture aspects of overall health and wellbeing, to encourage routine behaviors such as bedtime routines, and to focus on a variety of nutrition and healthy eating features. Participants highly rated features such as healthy recipes, goal tracking, and notifications/tips to improve behaviors. They expressed a desire to access resources on child health and nutrition in one simple place. The study team incorporated these desired features and characteristics into the app design. The features include child-friendly recipes, quizzes for personalized goal setting, tracking of progress on goals, a meal planning calendar, a shopping list, and tips and educational resources for a variety of healthy behaviors and feeding practices that support the target goals.

Conclusion: This study illustrates a process for incorporating the preferences of target users into a mobile app to support their child's overall health and wellbeing, including healthy eating, activity, and sleep. The resulting mobile app for caregivers of preschool age children is currently being tested for efficacy in childcare programs in Kentucky to assess the impact on childhood obesity risk outcomes.

81-T

Patterns of E-Cigarette Use by Sexual Orientation and Depression Status among Cancer Survivors: An Analysis of U.S. National Survey Data

Freeman JQ, Wilhite JA, YG Lee, Li XY

Purpose: This study sought to assess patterns of e-cigarette use among U.S. adult cancer survivors (ACS) by sexual orientation and depression status.

Methods: A stratified clustering sample of U.S. adults from the 2021 National Health Interview Survey was analyzed. The study sample was limited to adults who 1) had a cancer diagnosis, 2) reported sex assigned at birth, and 3) self-identified as either straight/heterosexual or lesbian, gay, bisexual, or other (LGB+). E-cigarette use, defined as having ever used e-cigarettes or other electronic vaping products, was dichotomized as "yes/no." Having ever experienced any depressive symptoms was self-reported as "yes/no." Weighted proportions (95% CI) were compared using Rao-Scott chi-squared tests. Multivariable logistic regression was performed to calculate adjusted odds ratios (aOR) with 95% CIs. All analyses accounted for complex survey design.

Results: The unweighted sample was 3,517, corresponding to a weighted sample of 23,747,209 ACS. The mean age was 65.4 years, and 3.1% (unweighted n=107; weighted n=738,433) self-identified as LGB+. Most (83.5%) were white, followed by 6.5% Black, 6.3% Hispanic, and 1.9% Asian. Overall, 12.3% (95% CI=10.8-13.8%) had ever used e-cigarettes. A significantly higher proportion of LGB+ ACS (40.8%, 95% CI=27.9-53.7%) reported having used e-cigarettes when compared to heterosexual ACS (11.4%, 95% CI=10.0-12.8%) (p<.001). ACS with depression reported a significantly higher percentage of e-cigarette use than those without (25.5% [95% CI=21.3-29.7%] vs. 8.7% [95% CI=7.4-9.9%]; p<.001). After covariate adjustment, LGB+ ACS had greater likelihood of e-cigarette use than heterosexual ACS (aOR=2.64, 95% CI=1.34-5.23). In the same model, the odds of e-cigarette use were higher in ACS with depression than those without (aOR=1.90, 95% CI=1.38-2.61).

Conclusions: In this national sample, e-cigarette use is common in ACS, particularly those LGB+ or with depression. LGB+ ACS are more than twice as likely as their heterosexual counterparts to have used e-cigarettes. Experience of any depressive symptoms is associated with increased e-cigarette usage. Our findings suggest that behavioral interventions and care support for sexual minority ACS or those with depression may be needed.

82

Perceptions of Participation in a Telehealth Exercise Program Designed for Rural Cancer Survivors with Fatigue: A Qualitative Study

Marker RJ, Hoover K, Pasek J, Moran I, Scorsone JJ, Studts JL, Leach HJ

Purpose: Rural cancer survivors experience geographic disparities in healthcare delivery, including limited access to exercise oncology programs. Supervised clinical exercise is one of the best-known interventions for cancer-related fatigue (CRF), a common and limiting symptom in survivors. We designed a telehealth exercise program specifically for rural survivors with CRF, addressing known barriers to exercise participation, to meet the need for exercise programs in this population. This study investigates perceptions of the program among participants in a pilot trial.

Methods: Rural cancer survivors with CRF (N=19, within one year of completing or having no planned changes in treatment) were recruited. All cancer diagnoses were eligible. The 12-week exercise program included live telehealth sessions led by a cancer exercise specialist, asynchronous sessions via a smartphone application, and emailed surveys. Structured interviews (15-45 min) were conducted upon completion. Interviews were recorded, transcribed, coded, and reviewed to identify common themes.

Results: Sixteen participants initiated the program and completed post-program interviews. A majority were women (N=12) and breast cancer survivors (N=7). Common facilitators and barriers to program enrollment and adherence were identified. Participants reported that enrollment was motivated by the presence of CRF or other aspects of cancer and treatment that had "knocked [them] down." Participants described improvements in CRF, fitness, and a "psychological boost" as facilitators of their continued adherence. Finally, both enrollment and adherence were linked to perceived program credibility, personal accountability, and ease, flexibility, and adaptability of exercise sessions. Few barriers were reported, with some participants describing transient difficulties related to internet, devices, or first-time use.

Conclusions: Perceptions of program participation were generally positive. Identified participation facilitators mirrored previously identified barriers in rural survivors, indicating the program design successfully addressed these barriers. Results demonstrate how designing a program specifically for rural survivors can deliver a positive experience, enhancing enrollment and adherence.

83-T

The Relationship Between Physical Activity, Performance Score, and Clinical Trial Enrollment in Cancer Survivors

Maslana, KE, Burns, R, Estabrooks, P, Playdon, MC, Shaw, J, Coletta, AM

Purpose: To investigate the association between patient-reported habitual physical activity (PA) and physician-assessed physical performance scores, specifically the Eastern Cooperative Oncology Group (ECOG) score, and experimental therapeutic clinical trial enrollment in adult cancer survivors.

Methods: This was a retrospective analysis of patient-reported and clinical cancer data from the Total Cancer Care (TCC) cohort at the Huntsman Cancer Institute between 2016 and 2022. Patients completed a modified Godin questionnaire to assess average weekly PA (METhrs/week) for the previous 12 months. A demographics questionnaire collected information on sex, race, ethnicity, education level, and income status. ECOG performance scores were retrieved from the medical record and classified as either "Good" (ECOG of 0 or 1) or "Poor" (ECOG of 2, 3 or 4) physical function. Binary logistic regressions were used to assess the relationship between PA levels (total PA, moderate-vigorous PA, and light PA) and ECOG ratings, and PA levels and clinical trial enrollment (yes/no). Models were adjusted for demographics and cancer characteristics.

Results: Patients who completed the TCC questionnaire packet (n=603) were primarily female (51%), non-Hispanic (95%), white (95%) with an average age of 61.9ffl15.5 years. The top three cancer types represented were Head and Neck (30%), Thyroid (24%), and Lung (24%); all cancer stages were represented. Higher PA levels were linked with increased odds of having a good ECOG rating in unadjusted models (OR 1.01, 95% CI 1.00 to 1.02), but not in adjusted models (OR 1.01, 95% CI .99 to 1.03). Higher levels of light PA were linked with greater odds of having good ECOG rating in unadjusted and adjusted models (OR 1.05, 95% CI 1.00 to 1.11; OR 1.072, 95% CI 1.01 to 1.13; respectively). Statistically significant associations were not observed between moderate-vigorous PA and ECOG rating, and PA and clinical trial enrollment.

Conclusions: Patient-reported light PA may serve utility in physician decision making of ECOG rating. More work is needed identifying patient-centered subjective and objective tools to complement physician-assessed ECOG scores considering the implications of ECOG in cancer treatment decisions and eligibility for clinical trials.

84-T

Ambient Fine Particulate Matter Exposure and Risk of Ovarian Cancer in the NIH-AARP Diet and Health Study

Ammons SM, Fisher JA, Madrigal JM, Kaufman JD, White AJ, Hurwitz LM, Trabert B, Silverman DT, Jones RR

Purpose: Fine particulate matter (PM2.5) is a widespread, chemically heterogeneous air pollutant with endocrine-disrupting properties that has been associated with breast cancer risk. Given limited studies of other female reproductive cancers, we investigated the association between ambient PM2.5 exposure and ovarian cancer risk in a large, geographically diverse cohort.

Methods: Outdoor residential PM2.5 concentrations were estimated using a nationwide spatiotemporal model for the NIH-AARP Diet and Health Study, located in 6 states (California, Florida, Louisiana, New Jersey, North Carolina, and Pennsylvania) and 2 metropolitan areas (Atlanta, Georgia, and Detroit, Michigan), including N=140,393 women with mean age 62 years at enrollment (1995-1996). We estimated average PM2.5 concentrations for a 5-year historical exposure period 10 years before enrollment (1980-1984). We used Cox regression to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for the association of PM2.5 (per 10µg/m3) and incident ovarian (inclusive of fallopian, peritoneal, and ovarian) cancers. Models were adjusted for age, race and ethnicity, smoking status, educational attainment, oral contraceptive (OC) use, body mass index (BMI), and menopausal hormone therapy (MHT) use. We conducted analyses stratified by OC use, MHT, BMI, catchment state, and restricted to high-grade serous cancers.

Results: In follow-up through 2018, 1,585 ovarian cancers were diagnosed. We found no PM2.5 association with ovarian cancer risk overall (HR=1.00 [CI:0.87-1.15], mean PM2.5 =18.8µg/m3) or when restricting to high-grade cancers (N=1,464 cases, HR=1.04 [CI:0.90-1.19]). State-specific HRs ranged from 0.85 to 1.91, with the strongest association among the Pennsylvania participants (N=240 cases, HR=1.91 [CI:1.00-3.65], mean PM2.5 =20.6µg/m3; p-interaction=0.47). We found no evidence of effect modification by OC use, BMI, or MHT (p-interaction>0.05).

Conclusions: Our findings of associations between PM2.5 and ovarian cancer in specific geographic areas suggest that PM2.5 chemical constituency or other regional factors may be important for future investigation.

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CT-assessed Body Composition and Tumor Immunologic Characteristics in Patients with Non-small-cell Lung Cancer

Cheng T-YD, Mahenge CM, Akasheh RT, Yilmaz SA, Kinder B, Nguyen X, Pietrzak M, Presley CJ, Shields PG

Purpose: We conducted a discovery scale study to assess the association of skeletal muscle and adipose tissue areas annotated on clinical computed tomography (CT) scan images with selected tumor immunologic characteristics among patients with non-small-cell lung cancer (NSCLC).

Methods: We analyzed publicly available data from 102 patients with NSCLC who had CT images on The Cancer Image Archives and gene expression data from The Cancer Genome Atlas and the Clinical Proteomic Tumor Analysis Consortium. Paravertebral muscle areas on the 12th thoracic vertebra images were annotated using Slice-O-Matic, and in a subset (62 patients) with the 3rd lumber vertebra images available, skeletal muscle and adipose tissue areas were annotated for body composition types. Percentages of CD8, regulatory T cells (Tregs), and activated NK cells were identified using the CIBERSORT gene expression signature matrix datasets. ESTIMATE algorithm was used to derive the stromal score (the abundance of stromal cells) and the immune score (infiltration abundance of immune cells). Differences in the immune markers across muscle and body composition types were examined using ANOVA adjusting for stage, histology, and study.

Results: The patient characteristics were similar among the overall sample with T12 images (mean age = 67.2, 47.1% female, and 70.6% stage I-II) and the subset with L3 images (mean age = 66.6, 47.6% female, and 68.3% stage I-II). Patients with higher paravertebral muscle area (3rd tertile) had the lowest stromal scores, compared to the 2nd and 1st tertile (P<0.05). Patients in the 2nd tertile of paravertebral muscle areas had the highest immune score and CD274 (PD-L1) gene expression. Among the body composition types, low muscle/high adiposity was associated with lower stromal scores, and low muscle was associated with lower immune scores, compared to high adiposity and high muscle/low adiposity types. Other immunological markers did not differ across the body composition types.

Conclusions: These findings suggest associations between deconvoluted body composition components and tumor markers relevant to immune checkpoint inhibitor efficacies in NSCLC. Further validation using immune phenotyping in a large patient sample is warranted.

86-T

Environmental Tobacco Smoking and Stomach Cancer in a Chinese Population

Wang Y, Jeong S, Wu M, Zhou JY, Jin ZY, Mu L, Zhao JK, Zhang ZF

Purpose: Tobacco smoking is a well-established risk factor for most of the cancers, including gastric cancer. However, few studies explored the association between exposure to environmental tobacco smoke (ETS) and stomach cancer. In this study, we investigated the association between ETS and stomach cancer in a Chinese population.

Methods: The Jiangsu Four Cancers (JFC) Study is a population-based case-control study for 4 cancers (lung, stomach, esophagus and liver) in 4 counties (Dafeng, Ganyu, Chuzhou, and Tongshan) in Jiangsu province. GC cases were identified from population-based cancer registries from January 2003 to December 2010. A total of 2,216 GC cases and 8,019 population controls were recruited. Epidemiological data were collected by in-person interview using a structured questionnaire including detailed data on ETS. Blood samples were collected for H pylori antibody measurements and for DNA isolation for measurements of genetic susceptibility markers. Adjusted odds ratios (ORs) and 95% confidence intervals (95% CIs) were estimated by unconditional logistic regression adjusting for multiple confounding factors.

Results: The adjusted odds ratio for ETS was 1.37 (95%CI, 1.23-1.51) for both smokers and nonsmokers, controlling for age, gender, county (study site), education level, income ten years ago, body mass index (BMI), family history of stomach cancer, alcohol consumption in the 1990's, Helicobacter pylori IgG, smoking status, and pack-years of smoking. The adjusted OR was 1.52 (95%CI, 1.29-1.79) among non-smokers when adjusting for confounding factors listed above, except pack-years of smoking and smoking status. Interactions will be evaluated between ETS and molecular markers, alcohol consumption and tobacco smoking.

Conclusion: Our results indicated that environmental tobacco smoking is associated with stomach cancer in a large population-based case-control study in a Chinese population and suggest the importance of environmental tobacco. ETS might be an important risk factor in the development of stomach cancer and related preventive measure and policy on ETS should also be implemented in order to reduce stomach cancer incidence.

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Helicobacter Infection: A Risk Factor for Biliary Cancer?

Murphy G, Freedman ND, Abnet CC, Albanes D, Cross AJ, Huang WY, Koshiol J, McGlynn K, Parisi D, Virtamo J, Weinstein S, Waterboer T, Butt J

Background: Helicobacter have been detected in human bile and hepatobiliary tissue, the bacteria promote gallstone formation and hepatobiliary tumours in laboratory studies. However, it remains unclear whether Helicobacter species contribute to these cancers in humans.

Purpose: We used a multiplex panel to assess whether seropositivity to Helicobacter (H.) hepaticus or H. bilis proteins were associated with development of hepatobiliary cancers in the Finnish Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study and US-based Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial (PLCO).

Methods: 62 biliary- (gallbladder, extrahepatic bile duct & Ampula of Vater) and 121 liver- (hepatocellular carcinoma & intrahepatic bile duct) cancers, and 190 age-matched controls from ATBC and 74 biliary- and 105 liver- cancers, and 364 age- and sex-matched controls from PLCO were analysed. Seropositivity to 14 H. hepaticus and H. bilis antigens was measured using a multiplex assay. Odds ratios (OR) and 95% confidence intervals (CI) were adjusted for major hepatobiliary cancer risk factors and H. pylori serostatus.

Results: Within PLCO, seropositivity to the H. bilis antigen P167D was associated with a 2-fold higher risk of liver cancer (OR: 2.38; 95% CI: 1.06, 5.36) and seropositivity to H. hepaticus antigens HH0407 or HH1201, or H. bilis antigen HRAG 01470 were associated with higher risk of biliary cancer (OR: 5.01; 95% CI: 1.53, 16.40; OR: 2.40; 95% CI: 1.00, 5.76; OR: 3.27; 95%CI: 1.14, 9.34, respectively). No associations for any of the antigens and hepatobiliary cancers were noted within ATBC. Analysis by subtype, to explore potential reservoirs of infection, identified statistically significant positive associations between antigens and tumors within the intra- and extra-hepatic bile ducts, the Ampula of Vater and hepatocellular carcinoma (only in PLCO). Stratification by H. pylori serostatus strengthened positive associations for liver cancer (H. pylori seronegative) but weakened the positive associations noted earlier for biliary cancer.

Conclusions: While the mechanisms are unclear, our study supports a role for Helicobacter in hepatobiliary cancer. The public health implications of a potentially modifiable risk factor for hepatobiliary cancers

88-T

POSTER WITHDRAWN

89-T

Occupational-Related Exposure to Benzene and Risk of Breast Cancer: Systematic Review and Meta-analysis

DeStefano V, Shah D, Shah V, Seyyedsalehi MS, Bonetti M, Boffetta P

Purpose: Benzene is a recognized carcinogen as evidenced by its association with leukemia; however, its association with breast cancer is not well established. Hence, a meta-analysis of cohort and case-control studies was performed to determine the association between benzene exposure and the risk of breast cancer.

Methods: A systematic literature review was conducted and 7221 publications were identified, from which 21 cohort and case-control studies were retained, and evaluated using meta-analyses (fixed effects model). PECOS criteria and STROBE guidelines were followed, and the study protocol was registered in the PROSPERO database (Registration No. 379720). Study quality was assessed using a modified Newcastle-Ottawa scale (NOS).

Results: The summary RR for ever-benzene exposure was 1.08 (95% CI=1.02-1.14, I^2=43.6%, n=21); corresponding RR for cancer incidence and mortality were 1.08 (95% CI=1.02-1.14, I^2=58.6%, n=15) and 1.09 (95% CI=0.87-1.38, I^2=0.0%, n=9), respectively. These main results were confirmed in sub-analyses by geographical region, industry type, publication year, and levels of exposure. No heterogeneity was detected amongst geographical regions (p-het=0.19) or industry of employment (p-het=0.05). Studies published before 2003 reported a summary RR of 1.24 (95% CI=1.13-1.37), compared to a summary RR of 1.02 (95% CI=0.95-1.08) for those published after 2003 (p-het=0.001). Heterogeneity was observed when evaluating studies at and above, or below the NOS median (p-het=0.00), with a summary RR of 1.25 (95% CI=1.13-1.28, I^2=0.0%, n=9) for studies below the median NOS score. Sub-group analysis of study design demonstrated heterogeneous results (p-het=0.001) with a summary RR of 1.19 (95% CI=1.10-1.29, I^2=0.0%, n=16) for cohort studies compared to the findings of case-control studies. Publication bias was detected (p=0.04).

Conclusions: Our meta-analysis identified an association between occupational benzene exposure and risk of breast cancer. The association was restricted to studies published before 2003, below the median NOS score, and cohort studies. Residual confounding variables cannot be excluded, which, together with potential bias, prevents conclusions of causality.

90-T

Occupational-Related Exposure to Benzene and Risk of Female Genital Cancers: Systematic Review and Meta-analysis

Shah D, DeStefano V, Shah V, Seyyedsalehi MS, Bonetti M, Boffetta P

Purpose: The IARC monograph has classified benzene as a class I carcinogen, as evidenced by its association with hematological malignancies. However, its association with female genital cancers (ovarian, uterine, cervical) has not been characterized. Therefore, a meta-analysis of cohort studies was performed to determine the possible correlation between occupational benzene exposure and risk of female genital cancers.

Methods: A systematic literature review was conducted that identified 7221 relevant publications. A total of 9 cohort studies detailing occupational exposure to benzene and correlated risk of female genital cancers were retained, and a meta-analysis (using fixed effects model) was performed. PECOS criteria and STROBE guidelines were followed, and the study protocol was registered in the PROSPERO database (Reg. No. 379720). Study quality was assessed using a modified Newcastle-Ottawa scale (NOS).

Results: The summary RR for ever-benzene exposure was 1.22 (95% CI=1.03-1.44, I^2=0.0%, n=19); corresponding RR results for female cancer incidence and mortality were 1.09 (95% CI=0.92-1.29, I^2=5.0%, n=17) and 1.69 (95% CI=1.18-2.4, I^2=0.0%, n=9), respectively. These findings were confirmed in sub-analyses by geographical area, industry type, publication year, and levels of exposure. Heterogeneity was detected amongst industry of employment (p-het=0.012) which included petroleum, chemical, printing, and mixed industries categories. Notably, the printing industry (compositors, press operators, and bookbinders) had a summary RR of 2.56 (95% CI=1.45-4.52, I^2=35.0%, n=2). However, no heterogeneity was observed for geographical regions (p-het=0.77), duration of benzene exposure (p-het=0.73), publication year (p-het=0.89), or amongst varying study quality (< or ≥ median NOS score; p-het=0.14). No publication bias was detected (p=0.43).

Conclusions: Our meta-analysis identified an association between occupational benzene exposure and risk of female genital cancers. The association was restricted to the industry of employment. Effects of residual confounding variables cannot be excluded, however, given the present association, there is a potential for causality, especially in workers employed in the printing industry.

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A Survey of Cancer Networks in the US: Goals, Composition, Resources, and Evaluation

Wahlen M, Schroeder MC, Bojorquez P, Birken SA, Semprini JT, Gorzelitz J, Seaman A, Sadri L, Broman K, Lizarraga IM, Charlton ME

Purpose: The cancer network model has potential to facilitate access to high-quality cancer care in resource-constrained community settings, but these networks have not been well studied so that new or existing networks can leverage their approaches and experiences. We aimed to identify cancer networks in the US and survey their leadership about network goals, composition, services/resources, and evaluation of success.

Methods: First, we used multiple web-searching strategies to identify networks with a formal or informal relationship between a large cancer center and affiliate community cancer centers. After creating and piloting a survey tool, we then delivered an online survey to leaders at each identified network and conducted descriptive analyses.

Results: We identified 21 networks; 16 network leaders completed the survey. All networks operated like a 'hub and spoke' model, and most (n=12) had affiliates that were financially independent from the hub. All networks aimed to improve access to and delivery of high-quality cancer care at affiliate sites, but only 11 engaged in quality improvement activities at affiliate sites. The 11 networks that engaged in quality improvement activities employed a range of initiatives: assistance with meeting accreditation standards (n=9), process improvement (n=9), care coordination (n=7), and addressing barriers to care (n=6). Impact on the affiliates was evaluated using patient and staff satisfaction surveys, and the number of clinician or community engagement events. Only two networks evaluated their efforts to increase the quality care delivered at affiliate sites. These evaluation plans included conducting quality audits, interviewing stakeholders, and monitoring outcomes through a centralized cancer registry.

Conclusion: Cancer networks aim to improve delivery of high-quality cancer care, with wide variation in activities to achieve/evaluate their goals. This is a first step towards connecting networks so they can learn from each other, provide direction for new/developing networks, and identify strategies that could be tested across networks to improve cancer outcomes for patients receiving care locally.

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Access to and Utilization of Endocrine Therapy among Breast Cancer Survivors in Botswana

Wester JR, Motladiile B, Wagner RB, Makhema MJ, Dryden-Peterson S, Kohler RE

Purpose: Breast cancer is the most common female cancer across Africa. For women with hormone-receptor positive (HR+) cancers, endocrine therapy (ET) taken for 5-10 years can reduce risk of recurrence. ET utilization in Southern Africa remains understudied. We explored experiences with ET and barriers to utilization among breast cancer survivors in Botswana.

Methods: We recruited breast cancer survivors with non-metastatic disease from a national survivorship cohort who had undergone mastectomy within the past 18 months. Semi-structured interviews were conducted in Setswana and/or English about experiences with breast cancer treatment, including access to and utilization of ET. Transcripts were translated, coded, and thematically analyzed. This analysis focuses on women with HR+ cancer who should have received and HR- women who reported taking ET.

Results: We analyzed interviews from 19 women (58% age ≥45 years, 42% stage I/II, 58% stage III). Most of the HR+ women (16/17) had filled a prescription, but one did not receive a prescription and was told her cancer was HR-. Two women with HR- cancers were prescribed and taking ET. Most women were prescribed Tamoxifen, though when it was out of stock, medication discontinuation and switching to Anastrozole were common. All but one woman reported at least one barrier. Financial and structural barriers, such as public pharmacies being out of stock, high costs at private pharmacies, and lack of transportation to refill prescriptions, resulted in missed pills. Lack of provider communication about ET left women confused and unsure of why they were taking ET. Health system barriers included problems with HR- results, weeks- to months-long medication shortages, long wait times at pharmacies, and variation in medication prices. Though some women experienced side effects, it was not a common reason for discontinuation.

Conclusions: Breast cancer survivors in Botswana face multi-level barriers to accessing and adhering to ET, including lack of transportation, medication costs, pharmacy shortages, and confusion about ET purpose. Provider and health system interventions are needed to improve communication about ET importance and increase access to affordable medication.

93-T

Changes in Cancer-Related Fatigue Following a Videoconference Intervention for Colorectal Cancer Survivors

Gomes EL, Hidde MC, Bryan AD, Cockburn MG, Messersmith WA, and Leach HJ

Purpose: Cancer related fatigue (CRF) is a common and debilitating side effect of colorectal cancer (CRC) treatment(s). Exercise can alleviate CRF, but the effects of a videoconference delivered exercise intervention for improving CRF among CRC survivors is not well established.

Methods: A 12-week pilot randomized controlled trial, with secondary analyses to examine changes in CRF among CRC survivors. The intervention included light-to-moderate aerobic and resistance exercise sessions 2x/week via Zoom. The control group received standard recommendations for exercise. CRF was self-reported at baseline and 12-weeks using the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F). The FACIT-F has 13-items, and score ranges from 0-52. Higher score indicates less fatigue and a change of 3 points is a minimal clinically important difference (MCID). Paired t-tests examined within group change in FACIT-F, and the proportion of participants achieving the MCID was calculated.

Results: Participants (N=25) were M=61.2±11.74 years old, 56% female, diagnosed with stage II (32%) or stage III (64%) CRC. From baseline to 12-weeks, there was no change in CRF in the intervention [M$_\Delta$=.92±5.26, (t(12)=-.632, p=.539)] or control [M$_\Delta$=-.83±3.78, (t(11)=.762, p=.462)] group. In the intervention group, 23% (n=3) achieved a MCID, and 16% (n=2) in the control group.

Conclusion: There was no significant change in CRF following a 12-week videoconference exercise intervention, and only 20% achieved a clinically relevant improvement. However, trends suggested a decrease in CRF in the intervention group vs. an increase in the control, indicating a larger trial is needed to determine efficacy of this intervention modality on CRF in CRC survivors.

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Comorbidity Burden and Health-Related Quality of Life in Men with Advanced Prostate Cancer

Benzo RM, Moreno PI, Fox RS, Silvera CA, Walsh EA, Yanez B, Oswald LB, Penedo FJ

Purpose: This observational study aimed to examine the prevalence of comorbidities and the relationship of comorbidity burden to health-related quality of life (HRQoL) and other patient-reported outcomes (PROs) among men with advanced prostate cancer (APC.)

Methods: This study included baseline data from participants with APC enrolled in a behavioral randomized clinical trial designed to improve HRQoL and reduce symptom burden. Participants were 192 men (average age 68.8) with APC (stage III or IV) who completed a psychosocial battery including measures of sociodemographic factors, HRQoL, and other PROs, and the Charlson Comorbidity Index (CCI). We applied a manual hierarchical multiple regression analysis to examine the relationships between CCI, HRQOL, and PROs. Our models were evaluated in three steps: (1) sociodemographic variables, (2) medical variables, and (3) CCI score. This study was supported by a National Cancer Institute (NCI) grant (R01CA157809).

Results: The vast majority (82%) of participants had at least one comorbidity, with the most common being: hypertension (59%), connective tissue disease or arthritis (31%), diabetes (24%), and problems with kidneys, vision, or another organ (24%). Participants who self-identified as a minoritized racial group had a significantly higher prevalence of diabetes compared to Whites (32% vs. 23%, respectively; p = 0.024). After controlling for covariates, regressions showed that a higher CCI score was significantly associated with worse HRQoL (p < 0.001), lower levels of positive affect (p < 0.05), and higher levels of depression (p < 0.05), fatigue (p < 0.001), pain (p < 0.01), stress (p < 0.01), and cancer-specific distress (p < 0.05).

Conclusions: Comorbidities were common among men with APC, and a greater CCI score was associated with detriments in several domains of HRQoL and other PROs. Further research is needed to inform the design of interventions to prevent the development and exacerbation of comorbidities in APC.

95-T

Desire for Future Children and Interest in Consultation with a Fertility Specialist among Adolescent and Young Adult (AYA) Cancer Patients

Lake PW, Zhao Y, Amorrortu RP, Rollison DE, Vadaparampil ST

Purpose: To examine factors associated with desire for future children and interest in consultations with a fertility specialist among Adolescent and Young Adult (AYA) patients (ages 18-39) with cancer treated at Moffitt Cancer Center between 2009-2021.

Methods: Patients completed an electronic patient questionnaire (EPQ) which included items related to physical/mental health, desire for future children, and interest in a fertility specialist consult. Cancer registry data included cancer characteristics (i.e., treatment, cancer type). Using backwards selection and criterion p<0.10, multinomial regression analysis examined factors associated with desire for future children. Binary logistic regression models examined factors associated with interest in fertility consults among those who wanted future children or were unsure about future children.

Results: AYA patients (n=2,819) were majority female (71%) and on average, 31-years-old. A portion of AYAs (39%) wanted children; of those, 36% also wanted fertility consults. In multinomial analysis, compared to AYAs who did not want future children (n=1,216), younger AYAs, females, and AYAs with children (p's<.001) were less likely to want children or less likely to be unsure of wanting children. AYAs receiving surgery or chemotherapy were more likely to desire children (p's<.05). In binomial analyses, among AYAs who want children (n=1,042) or were unsure (n=561), older patients, females (p's<.10), those with BC, lymphoma, receiving hormone therapy (p's<.05) or transfusions were more likely to desire consults (p<.10). AYAs with higher physical (p<.10) and mental (p<.01) health scores were less likely to desire consults. Among AYAs who want children, patients with borderline or metastatic cancer were less likely to be unsure about consults (p<.05), while those receiving surgery were more likely to be unsure about consults (p<.01).

Conclusion: Our results show that among AYAs receiving care at a large comprehensive cancer center, 39% desired future children and a subset (36%) also wanted a fertility consult. Findings suggest that there are key subgroups based on sociodemographic, clinical, and psychosocial factors that warrant additional study and future intervention to ensure their reproductive health needs are met

96-T

DXA-derived Visceral and Subcutaneous Adipose Tissue Association with Postmenopausal Breast Cancer Mortality

Decker D, Valencia C, Odegaard A, Roe D, Wactawski-Wende J, Ochs-Balcom H, Caan B, Chen Z, Pichardo M, Harris H, Bea JW

Purpose: Abdominal body composition assessed by computerized tomography (CT) scans at time of breast cancer diagnosis has been positively associated with breast cancer mortality. We sought to understand the association of abdominal body composition measured with dual-energy X-ray absorptiometry (DXA) scans in relation to risk of breast cancer mortality among healthy postmenopausal women in the prevention setting.

Methods: Women enrolled in the Women's Health Initiative (WHI) study with baseline whole body DXA (QDR2000, 2000+ or 4500W Hologic Inc.) scans were included in the study (N=9,767). Participant deaths were ascertained through mailed questionnaires, systematic searches of the National Death Index, medical record reviews, and proxy queries. The abdominal DXA region of interest (ROI) was assessed for visceral adipose (VAT) and subcutaneous adipose tissue (SAT) area (cm2). Competing risk models, with person-time from study enrollment, examined the independent associations between baseline VAT, SAT, and breast cancer specific death. Time varying analyses included DXA measurements at baseline and at the 3rd and 6th year clinic visits. Covariates included participant demographics (age, race/ethnicity, socioeconomic status), alcohol use, tobacco use, medications, physical activity, BMI and breast cancer stage. Missing data was amended with multiple imputation using chained equations.

Results: Among an analytical sample of 9,767 participants with 27-year follow up, there were 738 breast cancer cases, 87 deaths from breast cancer and 4,341 deaths from other causes (i.e. competing events). Baseline VAT (per 100 cm2) was associated with breast cancer mortality (adjusted Sub distribution Hazard Ratio (SHR)=1.50; 95% Confidence Interval (CI): 1.13, 1.98). Baseline SAT was positively associated with breast cancer deaths (SHR=1.40; 95% CI=1.20, 1.65). Time varying models showed similar results: VAT SHR=1.44 (95% CI: 1.10, 1.89), and SAT SHR=1.38 (95% CI: 1.15, 1.65).

Conclusion: Higher visceral and subcutaneous abdominal adipose tissue were both associated with breast cancer mortality in this group of postmenopausal women.

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Feasibility and Acceptability of Virtual Functional Performance Testing in Multi-site Adaptive Trial of a Technology-based EHR-Integrated Physical Activity Intervention in Breast & Endometrial Cancer Survivors (MyActivity) at Baseline

Alexander J, Beesch-Carden L, Freeman H, Solk P, Starikovisky J, Hickey B, Spring B, Barber E, Gradishar W, Agnew M, Schmidt C, Reading J, Hasanaj K, Wang S, Hodgson V.

Purpose: Functional performance is a key indicator of disability and mortality in cancer survivors. However, assessment requires in-person examination which can be burdensome. Developing, feasible, acceptable and accurate remote assessments could improve assessment reach for research and clinical practice.

Methods: Virtual functional performance testing (FPT; i.e. Short Physical Performance Battery, 6-minute walk test and 8-foot-up-and-go, 2-minute step test and arm curl test from Senior Fitness Test) feasibility and acceptability was examined in cancer survivors [n=323;Mage=57.4(SD=11.0);73.7% breast;25.4% endometrial). Participants were mailed FPT supplies and written instructions and emailed video set-up instructions. Two staff conducted the FPT via WebEx/Zoom using standardized slides and video recordings. Feasibility was assessed via test completion and staff-reported problems encountered rates and adverse event frequency. Participant acceptability questionnaires were completed post-FPT.

Results: All FPTs were completed [Mlength=75.53(SD=17.1) minutes]. Laptops (67.2%) were most frequently used. WebEx/Zoom was easy for most (84.6%) to use; only 2.8 % experienced problems. Staff internet connection issues were infrequent (4.2%) and secondary staff assumed the lead for all; 9.3% of participants experienced internet connection issues and 82.8% resolved within 5 minutes. No adverse events occurred. All participants could set-up all tests; of those 74.3% required no set-up assistance. Two-thirds (68.4%) watched set-up videos pre-FPT and 79.6% set-up tests pre-FPT. Most indicated test set-up (83.9%), moving device camera (76.6%) and following FPT slides/recordings (88.5%) was easy. Most were satisfied with written instructions (88.5%), pre-FPT instructions (88.4%), test reminders (87.9%), test slides/recordings (91.6%), instruction during FPT (95.8%), staff professionalism (96.7%) and FPT length (89.7%). FPT format preferences varied: virtual (36.7%), in-person (23.5%) and no preference (38.9%).

Conclusions: Virtual FPTs were feasible and acceptable among cancer survivors. Future work should examine feasibility, acceptability, accuracy and optimal implementation strategies in cancer survivors and other populations at risk for functional decline.

98-T

Feasibility of Dried Blood Spot Sample Collection in an mHealth Physical Activity Promotion Intervention for Breast Cancer Survivors

Hasanaj K, Reading JM, Wang S, Starikovsky J, Solk P, Spring B, Penedo FJ, Cella D, Siddique J, Ackermann RT, Funk WE, Courneya KS, Phillips SM

Purpose: This study explored the feasibility of self-collected dried blood spot (DBS) sample collection, a scalable biomarker collection method, among breast cancer survivors (BCS) participating in Fit2Thrive, a nationwide remotely-delivered physical activity intervention trial.

Methods: BCS who consented to Fit2Thrive were recruited to participate in optional DBS collection to examine inflammatory (i.e., interleukin-6 [IL-6], tumor necrosis factor-alpha [TNF-α], interleukin-10 [IL-10], c-reactive protein [CRP]) and cardiometabolic (i.e. glucose, triglycerides, total cholesterol, and high-density lipoproteins) biomarkers. Those who consented were mailed a kit with DBS supplies and instructions to complete self-collection and mail samples back at baseline, 12-, and 24-weeks. The proportion of samples returned with sufficient data and plausible values were assessed.

Results: Of the 280 participants who consented to enroll in Fit2Thrive, 264 (94%) expressed interest in participating in DBS collection, and 245 (92.8%) were eligible and consented to participate. At baseline, 215 (88%) DBS samples were returned, 190 (78%) were returned at 12-weeks, and 171 (70%) were returned at 24-weeks. Reasons for withdrawal from DBS collection at 24-weeks included: no longer interested in DBS collection (n=27); no longer interested in study participation (n=12); uncomfortable collecting DBS (n=1); death unrelated to the study (n=2); and injury (n=2). A total of 85% of the DBS collected had a sufficient sample for CRP analysis; 62% had a sufficient sample for ≥1 pro-inflammatory cytokine assay; and 74% had a sufficient sample for ≥1 cardiometabolic assay. The proportion of samples available with enough blood to sample and plasma equivalent concentrations with a plausible value ranged from 6% (total cholesterol) to 96% (CRP).

Conclusions: While many BCS were interested and willing to participate in DBS collection, adherence waned over time. There was a wide range of sufficient samples and plausible values for analysis likely due to inconsistencies and errors with self-collection, which influenced usable sample volume. This may limit the feasibility of DBS self-collection, particularly for multiple biomarkers. Future work should explore ways to improve DBS self-collection.

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Health Insurance among Patients and Survivors of Adolescent and Young Adult Cancers Before and During the COVID-19 Pandemic

Rogers K, Kaddas HK, Ramsay JM, Waters A, Vaca Lopez P, Van Thiel Berghuijs K, Linder L, Warner E, Gill D, Kirchhoff AC

Purpose: Young adults are more likely to be uninsured than any other age group. We identified factors associated with gaps in health insurance coverage before and during the COVID-19 pandemic among patients and adolescent and young adult (AYA) cancer survivors.

Methods: AYAs diagnosed with cancer 15-39 years of age were identified using cancer registry records from Utah and linked with electronic health records from a large academic medical center. The primary outcome was a gap in insurance, defined by having ≥1 encounters without insurance where insurance was listed in the preceding and subsequent encounters. To identify encounters with gaps, AYAs were required to have ≥3 healthcare visits in either the pre-pandemic (11/4/2017-3/6/2020) or pandemic period (3/1/2020-7/6/2022). Cox proportional hazards models predicted hazard ratios (HR) of insurance gap in the pre-pandemic (N=3,835) and pandemic (N=3,528) timeframes for race/ethnicity, sex, rurality, years since diagnosis, and age.

Results: The overall cohort was 38% male and 17% rural. Mean number of healthcare encounters did not differ across time periods (pre=23; pandemic=22), nor did insurance type: 14% vs. 12% gap, 60% vs. 62% continuous private, 12% vs. 13% continuous public, 3% vs. 3% continuously uninsured and 11% vs. 11% continuously insured with change in type. During the pre-pandemic period, AYAs aged 26-30 had a 56% higher rate of insurance gap (HR=1.56, 95% CI=1.07-2.26, ref=18-25 years). Those who were diagnosed with cancer 5-9 years previously had a 28% lower rate of insurance gap (HR=0.72, 95% CI=0.56-0.92, ref=<5 years). AYAs who were non-Hispanic-other race had a marginally increased rate of insurance gap (HR=1.37, 95% CI=0.99- 1.87, ref= Non-Hispanic White). During the pandemic, decreased rates of insurance gap were observed for older AYAs (31-40 years HR=0.62, 95% CI=0.43-0.89; 41-64 years HR=0.55, 95% CI=0.37-0.81, ref=18-25 years).

Conclusion: Predictors of insurance gap among AYA cancer survivors differed prior to and during the pandemic. Thus, research on the impact of long-term effects of the COVID-19 pandemic on insurance gaps among AYA cancers is needed.

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Mediating Effects of Mental and Physical Health on the Association between Chronic Disease Conditions and Colorectal Cancer Screening Utilization among Breast Cancer Survivors

Tsai MH, Vo JB, Moore JX, Ramin C Guha A, Dong Y

Purpose: Our study aimed to examine the mediating effects of mental and physical health on relationship between chronic disease conditions on guideline-concordant colorectal cancer (CRC) screening utilization among breast cancer survivors.

Methods: We performed a cross-sectional analysis among women with a history of breast cancer using data from the 2016, 2018, and 2020 Behavioral Risk Factor Surveillance System. The exposure was chronic diseases (yes or no) defined as prevalent diabetes, coronary heart disease/myocardial infarction, stroke, chronic obstructive pulmonary disease, emphysema/chronic bronchitis, arthritis, depressive disorders, or kidney diseases. The outcome was the receipt of guideline-concordant CRC screening. The mediators were self-rated mental/physical health in the past 30 days (14-30 vs. 0-13 days). We conducted multivariable logistic regression to examine the abovementioned association, and mediation analyses to determine the mediating effects of mental and physical health on the association between chronic diseases and guideline-concordant CRC screening.

Results: Among 1,885 women, 84.7% of survivors with chronic diseases received guideline-concordant CRC screening compared to those without any (78.9%) (p-value=0.002). Breast cancer survivors with chronic diseases were 1.7-fold more likely to have CRC screening compared to those without any conditions (OR, 1.68; 95% CI, 1.27-2.21), adjusted for sociodemographic characteristics, cancer-related factors, and quality of life. In mediation analysis, we found that breast cancer survivors with poor mental health negatively mediated the association between chronic disease conditions and CRC screening uptake (-4.4% mediated; p-value=0.035). We also observed a reduction of poor physical health, with a 10.5% reduction on CRC screening use (-10.5% mediated; p-value=0.008).

Conclusions: Breast cancer survivors with chronic diseases were positively associated with guideline-concordant CRC screening. Both poor mental and physical health negatively mediated the association, with a 4-10% reduction in CRC screening utilization. Effective implementation of integrated follow-up care in cancer survivorship care to address chronic disease management and mental/physical health is necessary.

101-T

Post-Cancer Diagnosis Cannabis Use and its Association with Health Status and Quality of Life

Kasiri N, Parada Jr. H, Strong D, Morales N, McDaniels-Davidson C

Purpose: To examine the associations between physical health, mental health, and overall quality of life (QoL) and cannabis use in cancer survivors.

Methods: Patients who received care at UC San Diego Health Moores Cancer Center (MCC) from 2018 to 2019 were eligible to complete an online survey between March and June of 2022. Of 5,901 invited patients, 954 provided responses and were weighted to represent the MCC patient population. We examined three self-rated exposures of interest: physical health, mental health, and overall QoL. Each exposure was assessed using a single survey item with response options ranging from poor to excellent and dichotomized to 'Above Average' (i.e., very good or excellent) and 'Average or Below Average' (good, fair, or poor [referent]). The outcome of interest, post-cancer diagnosis cannabis use, was defined as 'Yes' vs. 'No' (referent). To assess the associations between health status or QoL and post-cancer diagnosis cannabis use among survivors, we used survey-weighted logistic regression and estimated odds ratios (ORs) and 95% confidence intervals (CIs), adjusting for age, sex, race/ethnicity, cancer type, and stage at diagnosis. We examined these associations overall and by cancer stage (stages I/II or III/IV).

Results: The weighted population were mostly non-Hispanic white (67.1%), female, (58.5%), and 65 or older (51.8%); less than one-fifth (16.9%) identified as Hispanic or Latino/a. Nearly half or more of the population reported a very good or excellent status for mental health (67.2%), QoL (64.2%), and physical health (47.1%). Post-cancer diagnosis cannabis use was inversely associated with above average physical health (OR=0.73; 95%CI=0.48-1.12), mental health (OR=0.49; 95%CI=0.32-0.75), and QoL (OR=0.78; 95%CI=0.51-1.19). Estimates were similar after stratifying by cancer stage, except among survivors diagnosed at stages III/IV where an above average (vs. average or below average) physical health status was associated with a 10% higher odds (OR=1.10; 95%CI=0.55-2.22; Pinteraction=0.09) of post-diagnosis cannabis use.

Conclusion: Cancer survivors with above average health status or QoL had lower odds of cannabis use. These results may be important for understanding post-diagnosis lifestyles and behaviors.

102-T

Prospective Associations of Adiposity with Health-Related Quality of Life during Breast Cancer Survivorship among Black Women

Sánchez-Díaz CT, Qin B, Zeinomar N, Iyer HS, Perlstein, M, Demissie K, Hong CC, Bandera EV

Purpose: Black breast cancer (BC) survivors have a disproportionate burden of obesity, which could lead to worse health-related quality of life (QoL). To comprehensively understand how adiposity influences QoL among Black BC survivors, we evaluated the association of BMI, body fat distribution (waist circumference and waist-to-hip ratio) and body composition (percent body fat and fat mass index) with QoL in the Women's Circle of Health Follow-Up Study, a population-based cohort of Black BC survivors in New Jersey.

Methods: We prospectively evaluated associations in a cohort of 785 Black BC survivors aged 20 to 75 years, diagnosed from 2012-2019. Participants underwent home interviews within 12 months (visit 1) and 24 months (visit 2) following their cancer diagnosis. For this analysis, we used anthropometric measures (visit 1), and QoL (visit 2), assessed using the Functional Assessment of Cancer Therapy - Breast (FACT-B) including domains of physical, emotional, functional, and social well-being, and BC subscale. Low FACT-B total and subscales were dichotomized at the median. Adjusted risk ratios (RR) for low FACT-B were estimated using multivariable Poisson regression models with robust standard errors.

Results: Obesity and central obesity were prevalent (58% and 75%, respectively) in this population. Compared to women with normal BMI (18.5-24.9), those with BMI ≥40.0 had 54% higher risk of lower total FACT-B score (RR:1.54; 95% CI 1.19-2.00) (p trend <0.001). We also observed higher risk of low QoL in women with the highest quartile of waist circumference (RR:1.41; 95% CI 1.16-1.72), % body fat (RR:1.28; 95% CI 1.05-1.57) and fat mass index (RR:1.39; 95% CI 1.13-1.70), compared to those in the lowest quartile (p trend <0.001, for all). When evaluating FACT-B separate domains, associations with adiposity variables appeared to be limited to worse physical well-being and BC symptoms.

Conclusion: We found robust associations between different adiposity measures and lower QoL among Black BC survivors. Maintaining a healthy weight may enhance and sustain long-term physical well-being and overall QoL for Black women during BC survivorship.

103-T

Risk of Chronic Disease Outcomes among South Asian Cancer Survivors

Gowda K, Singam M, Lancki N, Hibler EA

Purpose: Due to the limited understanding of cancer survivorship among South Asian patients in the United States, we conducted a study examining the risk of chronic disease outcomes between South Asian cancer survivors versus traditional race categories.

Methods: We leveraged Northwestern Medicine electronic health records (EHR) to identify adult (≥18 years at diagnosis) cancer survivors diagnosed between 2005-2020. We identified South Asian cancer survivors by applying a validated name list algorithm to the EHRs. We used ICD codes to determine dates of diagnosis for cancer at any site and chronic disease outcomes (atrial fibrillation, coronary artery disease, diabetes mellitus, heart failure, hypertension, and myocardial infarction). Between South Asian versus survivors of other races, we used Cox regression models to examine the associations between race and time from cancer diagnosis to chronic disease diagnosis, taking into account the competing risk for mortality. We adjusted final models for age, gender, BMI at diagnosis, cancer type, and secondary cancer. We also examined effect modification by gender.

Results: The name list algorithm identified 1.2% South Asian cancer survivors among the 102,479 NM adult cancer survivor population. Of those, 49% self-identified as Asian, 18% as White, and 17% as Other race. Compared to Asian cancer survivors (n=2,627; 2.6%), South Asian survivors had a higher prevalence of leukemia, lymphoma, kidney, multiple myeloma, and head/neck cancer; and a slightly lower average age at cancer diagnosis compared to White cancer survivors. Asian and South Asian cancer survivors had greater hazard of developing diabetes mellitus after cancer diagnosis than White (n=75,173; 73.3%) survivors (HR 1.73 [95% CI 1.27-2.35], HR 1.82 [95% CI 1.21-2.75], respectively). There were no statistically significant associations for other chronic disease outcomes or effect modification by gender.

Conclusion: This study identified increased risk of diabetes among South Asian cancer survivors compared with survivors of traditional race categories. These findings suggest that further disaggregation of the traditional "Asian" race category is important in highlighting wider health disparities in cancer survivorship.

104-T

Role of a Post-Diagnostic Plant-Based Diet on Mortality Following a Breast Cancer Diagnosis

Yue Y, Wang T, Romanos-Nanclares A, Wang M, Giovannucci E, Chen W, Holmes M, Eliassen AH, Smith-Warner SA, Willett WC

Purpose: To assess the impact of post-diagnostic plant-based diets on mortality in women with breast cancer.

Methods: In a cohort of 8,085 women diagnosed with stage I-III breast cancer, dietary information was collected before and after breast cancer diagnosis using food frequency questionnaires. The Healthful Plant-Based Diet Index (hPDI) and Unhealthful Plant-Based Diet Index (uPDI) were calculated to evaluate adherence to a healthy plant-based diet. The indices were based on 18 food groups categorized into healthful plant foods (7 groups), unhealthful plant foods (5 groups), and animal foods (6 groups). Each group was ranked in quintiles, scored from 1 to 5, and summed to obtain indices ranging from 18 to 90. Cox proportional hazard models were employed to assess the relationship between post-diagnostic hPDI and uPDI scores and mortality following a breast cancer diagnosis. Models were stratified by cohort and time since breast cancer diagnosis and adjusted for risk factors related to breast cancer incidence and survival.

Results: Over a median 24-year follow-up, 2,957 deaths occurred (966 breast cancer, 474 cardiovascular disease [CVD]). The mean (SD) of post-diagnostic hPDI and uPDI were 55.1 (7.8) and 54.1 (8.5), respectively. Women with a higher post-diagnostic hPDI had a reduced risk of all-cause mortality (multivariable adjusted hazard ratio [HR] [95% confidence interval, CI] comparing the highest vs. lowest quintile: 0.81 [0.72, 0.92], p-trend <0.01), whereas those with a higher post-diagnostic uPDI had an elevated risk (HR=1.36 [1.19, 1.56], p-trend <0.01). Associations of similar magnitude were observed for CVD mortality. Weaker nonsignificant associations were found for breast cancer mortality; HRs (95% CI) comparing the highest vs. lowest quintile were 0.91(0.74-1.17) for hPDI and 1.07 (0.86-1.34) for uPDI. Compared to women with consistently low scores, women who shifted to a higher hPDI after diagnosis had 16-20% lower all-cause and CVD mortality, whereas those who transitioned to a diet with a higher uPDI after diagnosis had a 16-34% higher mortality.

Conclusion: Adopting a healthy plant-based diet after a breast cancer diagnosis is linked to a decreased risk of all-cause and CVD mortality but not breast cancer mortality.

105-T

The Gut Microbiome and Onset of Cachexia in Colorectal Cancer Patients

Ilozumba MN, Ose J, Lin T, Himbert C, Gigic B, Warby CA, Li CI, Siegel E, Toriola A, Figueiredo JC, Shibata D, Hardikar S, Round J, Stephens WZ, Holowatyj AN, Ulrich CM

Purpose: Cachexia accounts for about 20% of all cancer-related deaths and it is indicative of poor prognosis and progressive functional impairment. Imbalance of the gut microbiome may influence cancer cachexia through systemic inflammation and muscle wasting. However, the impact of the gut microbiome on the development of cancer cachexia in colorectal cancer (CRC) patients has not been established.

Methods: 103 patients with colorectal cancer (stages I-III) were included in the study. Pre-surgery stool samples were used to perform 16S rRNA gene sequencing (Illumina). Using Fearon criteria, cachexia was classified as >5% weight loss over the past 6 months and/or BMI of <20kg/m2. Cachexia was assessed at 6-, and 12-months post-surgery. Differences in alpha diversity and abundances of microbiota at the genus and phylum levels by cachectic and non-cachectic patients were tested using Wald-test adjusting for multiple comparisons. All analyses were adjusted for race, ethnicity, age, sex, body mass index, study site, tumor stage, tumor site, alcohol consumption, smoking status, antibiotic use, adjuvant treatment, and physical activity.

Results: At 6 months, cachectic patients had higher alpha diversity compared to non-cachectic patients (Shannon index, Simpson index, Observed species, p-values<0.05). At the genus level, cachectic patients compared to non-cachectic patients had higher abundances of Pyramidobacter, Haemophilus, Prevotella, Epulopiscium, Unclassified Peptostreptococcaceae and Unclassified Cerasicoccacease (p-values<0.05) at 6 months and had higher abundances of Prevotella and Unclassified Bacteroidales at 12 months. Decreased abundances of Fusobacterium, Klebsiella, Eggerthella, and Unclassifed Enterobacteriaceae (p-values<0.05) were observed at 6- and 12- months. Lower abundance of Fusobacterium was observed at the phylum level at 6- and 12-months (p-values<0.05).

Conclusions: Our results suggest that differences in gut microbial diversity and abundances are associated with onset of cachexia in CRC patients. This is the first study to explore a link between the gut microbiome and cachexia in CRC patients. The results provide novel insights into the biology of cachexia in patients with CRC and potential clinical application.

106-T

Transforming the Research Process through Bidirectional Engagement in Search of a Cure: Community Scientists as Brokers of Diversity and Patient-Driven Impact

Lopez G, Gascon S, Navarro M, Surani Z

Background: In cancer prevention and research initiatives, there is a significant lack of involvement of lay community members, cancer survivors, caregivers, and community-based health providers, especially with diverse racial, ethnic, sexual and gender minority background.

Methods: Community Outreach and Engagement (COE) at Cedars-Sinai Cancer Center (CSCC) trained and integrated lay community members as Community Scientists to improve bidirectional engagement and advocacy in cancer research relevant to catchment area needs in partnership with principal investigators, leaders, and staff. Participants (N=16) comprised of 56% with cancer diagnosis, 13% caregivers, 44% health professionals, and 44% community leaders. All were highly recommended and community vetted. Participants received basic training in community advocacy, scientific terminology, study design, clinical trials protocols, participant engagement, proposal and protocol reviews, and overview of COE, CSCC clinical research, and catchment area disparities. To measure impact, number of engagements in protocol reviews, research studies and community outreach support were tracked.

Results: COE-trained Community Scientists identify as Latinx, Black, Caucasian, and Asian (Koreans, Filipinos and Indians) and LGBTQ+, who represent our catchment area in Los Angeles County. After a 6-week training with 4 webinars, 44% (n=7) have joined 3 CSCC research study committees, 38% (n=6) reviewed protocols and provided feedback to 9 investigator-initiated clinical trials and Basic Science studies, and 19% (n=3) wrote 2 letters of support for grant funding opportunities. In partnership with researchers, they have helped to interpret data within the broader community context and served as a broker of findings to communities, including making policy and practice recommendations for patient-driven impact.

Conclusion: The implementation of an in-house Community Scientist Committee Project increases diversity in cancer prevention and research. This fosters a standardized, comprehensive, and continued learning opportunities to promote collaboration and bidirectional research. Community Scientists ensures relevance of research, provide advice on recruitment of BIPOC and LGBTQ+ communities, and advise on adherence to protocols.

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Trends in Patients Characteristics, Treatment, and Outcomes of Endometrial Cancer in the United States from 2005 to 2020

Adekanmbi V, Guo F, Hsu CD, Gao D, Polychronopoulou E, Sokale I, Kuo Y-F, Berenson AB

Purpose: The overarching aim of this study was to assess pattern of trends in the characteristics of patients, treatment, and outcomes of endometrial carcinoma over 16 years.

Methods: Dataset from the National Cancer Database (NCDB) for patients diagnosed with endometrial carcinoma from 2005 to 2020 was used in this retrospective, case series study. We examined trends in the treatment and outcomes of interest for endometrial carcinoma in the United States from 2005 to 2020. Four periods were studied: 2005-2008, 2009-2012, 2013-2016, and 2017-2020. The main outcomes and measures included patient and tumor characteristics, treatments, hospitalization, mortality, and overall survival.

Results: 569,817 patients who were diagnosed with endometrial carcinoma were included in this study. The mean (SD) age of the patients was 62.7 (11.6) years, but 66 184 patients (11.6%) were younger than 50 years. Of the patients studied, 37 079 (6.3%) were Hispanic, 52 801 (9.3%) were Non-Hispanic Black, 432 058 (75.8%) were Non-Hispanic White and Other Non-Hispanic, 48 879 (8.6%). Systemic chemotherapy use (14.1% vs 17.7% vs 20.4% vs 21.1%; P <.001) and immunotherapy (0.01% vs 0.01% vs 0.17% vs 1.10%; P <.001) were statistically significantly increased from period 1 to 4. Neoadjuvant systemic therapy use increased across the periods studied (0.48% in period 1 to 1.34% in period 4) as well as adjuvant systemic therapy use (10.2% in period 1 to 17.5% in period 4). The median (IQR) time from diagnosis to final surgery increased from 26 (10-41) days in period 1 to 32 (16-48) days in period 4. The use of open surgery decreased by about half (27.3% in period 2 to 13.7% in period 4), while the use of robotic surgery doubled (26.9% in period 2 to 52.7% in period 4). The median (IQR) hospital stay decreased from 3 (2-4) days to 1 (0-1) days. 30-day and 90-day mortality decreased from (0.6% in period 1 to 0.2% in period 4) and (1.4% in period 1 to 0.6% in period 4) respectively.

Conclusion: We found increased use of immunotherapy, chemotherapy, and minimally invasive surgery for management of individuals with endometrial cancer over the years. The improvements observed in the outcomes examined can probably be linked to the treatment trends observed.

108-T

Unmet Needs among Long Term Breast Cancer Survivors in the Carolina Breast Cancer Study

Yarosh RA, Nichols HB, Hirschey R, Kent EE, Mayer DK, Troester MA, Butler EB

Purpose: Breast cancer survivors experience a variety of unmet needs following diagnosis; compounding unmet needs may burden survivors long into the survivorship period. We aim to describe the burden of these needs among long term survivors.

Methods: The Carolina Breast Cancer Study 3 is a population-based study of breast cancer survivors diagnosed from 2008 to 2013 in North Carolina. Black and younger (<50 years at diagnosis) women were oversampled. The Cancer Survivors Unmet Needs Assessment (CaSun), a 35-item survey, was used to measure the number of unmet, met, and total needs of study participants (4 domains). We calculated the mean (SD) number of unmet, met, and total needs overall and by domain. We summarized the most reported unmet needs by frequency (n, %). We calculated the prevalence of ≥1 unmet need (%) and calculated prevalence differences (PD) and 95% confidence intervals (CI) of unmet needs by race and age.

Results: We included 1445 women who completed the CaSun survey at a mean of 11.2 (SD=0.6) years post diagnosis. 46.2% of participants were Black and 53.8% were White. The mean number of total needs in the sample was 9.0 (6.0). On average, survivors reported 4.9 (6.0) met and 4.0 (6.8) unmet needs. The most common unmet needs reported include "I need help to reduce stress in my life" by 23.6% of participants, "I need help to manage my concerns about the cancer coming back" by 20.7% of participants, and "I need to know that all my doctors talk to each other to coordinate my care" by 19.7% of participants. Overall, 49.1% of participants reported ≥1 unmet need. A higher prevalence of ≥1 unmet need was observed among Black women (55.7%) compared to white women (43.4%) (PD=11.9%; CI: 6.8, 17.0) overall, and across domains (information, quality of life, emotional/relationship issues, and life perspective). The prevalence of unmet needs was higher among younger (54.5%) compared to older (44.0%) survivors (PD=10.7%; CI 5.6,15.8).

Conclusions: Survivors have unmet needs more than 10 years post diagnosis. Black and younger women had a higher burden of unmet needs 10 years after breast cancer diagnosis. Identifying patient characteristics that predict long-term unmet needs may help to identify targeted interventions for long term survivors.

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Using Natural Language Processing and Machine Learning to Identify Clinical and Social Determinants of Survivorship Care Engagement for Childhood, Adolescent, and Young Adult Cancer Survivors

Mobley EM, Wang R, Crisp A, Paredes Pardo D, Hammarlund N, Guo S, Yu Z, Mailhot RB, Wolfson J, Beauchemin M, Friedman D, Fishe J, Parker AS, Bian J, Wu Y, Xu J

Purpose: Barriers to care for childhood, adolescent, and young adults (CAYAs) diagnosed with cancer <40 years are documented in free text notes in the electronic health record (EHR). Motivated by this, we used natural language processing (NLP) on unstructured notes and machine learning (ML) models to identify clinical and social determinant of health (SDH) factors associated with survivorship care engagement.

Methods: We leveraged data from UF Health to identify CAYAs diagnosed with cancer from 2012-2021, who were still alive 5 years post-diagnosis, and who were diagnosed, treated, and transitioned to survivorship at UF Health. We used an existing NLP pipeline to extract unstructured SDH data and combined that with structured data from the EHR during the observation window (<5 years post-diagnosis) using ML algorithms to build prediction models of survivorship care engagement ≥5 years post-diagnosis. Outcomes were 1) outpatient visit, 2) visit with a cancer provider, and 3) survivorship visit. Model performance was evaluated using area under the curve (AUC), precision, recall, and F1 score; SHAP values informed model interpretation.

Results: We identified 1,815 CAYAs who were included in our analysis. We observed that combining unstructured and structured data improved model performance (AUC: 0.69, 0.65, 0.82). The most important predictors of outpatient visit were adequate housing, adequate living supply (e.g., water, food), and sexual activity from unstructured data, and ages 0-19 years and normal blood pressure from structured data. In contrast, a visit with a cancer provider was associated with social cohesion, lack of physical activity, and no substance abuse from unstructured data, and other insurance, high blood pressure, and Black race from structured data. Survivorship visits were linked to ample living supply and no alcohol or substance abuse from unstructured data, and low pain scores treatment without chemotherapy from structured data.

Conclusions: Both unstructured and structured data were associated with distinct types of care engagement. Resources to engage CAYAs in care should be targeted to those who experience housing instability, inadequate living supply, social isolation, and substance use to maintain care engagement during survivorship.

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A Preliminary Evaluation of the Clinical Trial Referral Ambassadors Program to Promote Clinical Trial Referrals within Rural Community Hospitals

Stapleton JL, Carey D, Tolle C, Kim J, Mullett T, Occa A, |Ray AE

Purpose: Accrual rates to cancer clinical trials are particularly low in community hospitals which lack clinical trial infrastructure and support despite providing care to the majority of cancer patients. This study evaluates Clinical Trial Referral Ambassadors (CTRA), a training program designed to provide education and support to nurses and clinic staff in efforts to increase trial referrals.

Methods: Education and training staff at the Markey Cancer Center Affiliate Network (MCCAN) developed the 4-session CTRA to create clinical research referral champions among nurses and staff at affiliate sites who can speak confidently to physicians and patients about the referral process and encourage research participation. CTRA is grounded in best practices for community oncology training programs and includes didactic and interactive presentations, communication skills building, and self-assessment and discussions. The 2-phase evaluation included: 1) a post-training survey to assess feasibility and acceptability among recipients and 2) an implementation focus group held several months after the program's conclusion.

Results: Of the 25 CTRA participants, 16 completed the Phase 1 survey and 12 participated in Phase 2 focus groups. In response to survey questions about perceived organizational capacity for referrals, most participants felt their organizations were at least nearly ready with staffing, training resources, organizational leadership, established processes, and culture. Areas of improvement included training for office staff in supporting referrals and improving attitudes toward trials within the community. CTRA recipients reported high levels of confidence in their ability to refer patients, understanding of trials, and motivation to engage in efforts to increase referrals. Finally, the training was rated favorably on several acceptability measures. In focus groups, participants described various CTRA-informed strategies and improvements they implemented in their clinics.

Conclusions: The CTRA was well-received by recipients and may have improved clinic processes for referring patients to clinical research. The next step of our research is to further refine and test the impact of the CTRA on clinical trials referrals and uptake among patients.

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Cancer Patients' Use of the Internet and Social Media for Cancer Information and Perceived Exposure to Cancer Misinformation

Warner EL, Turner C, Tovar I, Johnson S, Guo JW, Sheng X, Hocutt C, Picco J, Kirchhoff AC, Kepka D, King A

Introduction: Cancer patients gain social support and information about cancer online. However, little is known about patient's experiences and concerns about online cancer misinformation. We explored cancer patients' perceived exposure to online cancer misinformation and their related cancer information worry.

Methods: We surveyed n=56 cancer patients aged 18 and older who spoke English from January-September 2023. Recruitment occurred in cancer clinics and online through ResearchMatch. We estimated bivariate statistics and logistic regressions to compare sociodemographics, cancer information sources, and both false and misleading cancer information worry by perceived exposure to online cancer misinformation in the last month (yes vs. no).

Results: Most cancer patients worried about false (75.0%) and misleading (71.4%) online cancer information. Yet, social media and the internet were the most common sources of cancer diagnosis information (27.6%). Less than 10% of patients reported receiving information about cancer, diagnosis, or treatment from healthcare providers. A higher proportion of highest and lowest earning patients reported being exposed to online cancer misinformation than those in middle-income categories (p<0.001). Significantly higher proportions of patients who perceived they had been exposed to online cancer misinformation in the last month were concerned about encountering false (84.8% vs. 60.9%, p=0.04) and misleading (81.8% vs. 56.5%, p=0.04) cancer treatment information online, compared to those who had not been exposed. When controlling for income, those who perceived exposure to online cancer treatment misinformation in the last month had 3.58 times the odds of worrying about false online cancer misinformation (95%CI 1.00-12.89, p=0.05) and 4.05 times the odds of worrying about misleading online cancer misinformation (95%CI 1.11-14.77, p=0.03).

Conclusion: Most cancer patients go online to find information about cancer, diagnosis, and treatment, yet the vast majority worry about this information being false and misleading. Perceived exposure to online cancer misinformation may contribute to cancer-related distress; whether this outweighs the benefits of online social support and information remains important for future research.

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Characteristics Associated with Acceptability of Self-Testing for Human Papillomavirus Testing among Low-Income Women

Biederman EB, Champio VL, Zimet GD

Background: Low-income women have increased incidence and mortality from cervical cancer as well as lower cervical cancer screening (CCS) rates compared to high-income women. The purpose of this study was to determine if CCS via mailed "self-collection" for human papillomavirus (HPV) testing was acceptable to low-income women and the characteristics associated with acceptability.

Methods: Low-income women (<$50K a year) were recruited from Dynata, a survey research company. In the survey, participants were provided written directions for self-collection and asked, "if self-sampling for HPV testing by a home vaginal sample were available today, and a kit was mailed to you, and you mailed it back, how willing would you be to complete the test?" with responses dichotomized into "willing" and "not willing". The acceptability variable was regressed on marital status, history of abnormal Papanicolaou [Pap] smear/positive HPV test [y/n], and theoretical concepts from the Health Belief Model and Diffusion of Innovations (trust in new technologies[y/n], advantages of self-collection over provider-based testing, self-efficacy to complete self-collection, and knowledge of HPV).

Results: The mean age of the 940 participants was 55 (range=30-65). Sixty-four percent of women found self-collection acceptable. In the multiple logistic regression model, women who were married (OR=1.72;95%CI=1.24,2.37); had a history of an abnormal Pap smear/HPV test (OR=2.00;95%CI=1.37,2.92); trusted in new technologies (OR=1.51;95%CI=1.06,2.16); and had higher scores on advantages (OR=1.07;95%CI=1.04,1.10), self-efficacy (OR=1.10;95%CI=1.04,1.17), and HPV knowledge (OR=1.05,95%CI=1.01,1.09) had greater willingness to complete self-collection.

Conclusions: Consistent with previous studies, over half of women found self-collection acceptable. Acceptability was associated with some potentially modifiable factors (e.g., beliefs, self-efficacy, and knowledge). A limitation of this study is that women did not complete a self-collection kit but were asked to imagine the procedure and may have overstated their intention to use self-collection. Future research should further examine modifiable predictors of completion of self-collection.

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Evaluation of the Community Health Worker-Delivered Salud En Mis Manos (SEMM) Intervention: Comparing In-Person and Telephone-Based Behavioral Education Participation on Increase in Breast and Cervical Cancer Screening and HPV Vaccination Among Medically Underserved Latinas

Savas LS, Huyan, Y, Figueroa-Solis E, Adlparvar E, Goetz M, Coan S

Purpose: To examine the effect of Salud en Mis Manos (SEMM), a community-based community health worker (CHW)-delivered behavioral intervention on breast and cervical (B&C) cancer screening, and HPV vaccination outcomes by mode of delivery, providing in-person behavioral education and telephone-based education, followed by optional navigation support calls.

Methods: From 2016 to 2019, CHWs completed B&C cancer screening and HPV vaccination needs assessments among medically underserved Latinas (21-74 years) and invited women overdue for a mammogram, cervical screening, and/or HPV vaccination to participate in the SEMM behavioral intervention to increase in mammogram, cervical screening, and HPV vaccination. At nine months follow-up, we assessed outcomes using a one-group pretest-post-test design. We also compared outcomes by mode of participation in the education (in-person or by telephone), as well as by preference for receiving telephone-delivered navigation support calls.

Results: CHWs identified and enrolled 1,439 women. After conducting baseline surveys 522 (36%) participated in SEMM in-person education and 81% engaged in at least one follow-up navigation call. Women who missed scheduled education sessions were invited to complete the program by telephone 602 (42%), and 88% of this group engaged in at least one navigation call. Among women receiving in-person versus telephone-based education, respectively, 42.8% and 33.2% completed a mammogram, 55.8%, and 46.2% completed a Pap screening, and 47.4% and 28.6% completed a needed HPV vaccine dose. Women who received in-person education (with and without navigation support) had higher screening rates compared with women receiving telephone-based education (with and without navigation).

Conclusions: Providing the telephone education option enabled women who declined or missed in-person education to complete the SEMM program, increasing the program's overall reach. While screening and vaccination rates were lower among those receiving the education by telephone, providing telephone-based education increased the overall program impact. Current research focuses on strengthening telephone-based education and navigation support to further increase program impact.

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Evaluation of the Implementation Studio on Cancer Screening in Hispanic Communities

Ko LK, Vu T, Masud, M, Bishop S, Duran, MC

Purpose: Rural community-based organizations (CBOs) serving immigrant communities are critical settings for implementing evidence-based interventions (EBIs) to reduce cancer inequities. The Implementation Studio is a training and consultation program to coach CBOs select, adapt, and implement cancer prevention and control EBIs. Thirteen community health educators (CHEs) from two CBOs serving rural Hispanics participated in the Implementation Studio; CHEs successfully selected, adapted, and executed implementation of breast or colorectal cancer (CRC) EBIs. Hispanic clients receiving the CHE-delivered EBIs reported increased knowledge and intention to screen for cancer immediately after the EBI. This study examined the long-term impact of the CHE-delivered EBIs on completion of cancer screening among Hispanic clients.

Methods: We conducted a phone survey to assess clients' completion of cancer screening 6-12 months post CHE-delivered EBI. Bilingual/bicultural data collectors contacted 71 Hispanic clients (22 from breast cancer EBI and 49 from CRC EBI). CHE-delivered EBIs were delivered virtually in small group settings. Data collection occurred between August-September 2023. Descriptive analyses were generated with frequencies and means and standard deviations.

Results: 37 of 71 clients responded to the call (52% response rate): 25 from the CRC EBI and 12 from breast cancer EBI. All eight clients who were due for CRC and breast cancer screening completed a screening test since attending the EBI session: 4 from the CRC EBI got screened for CRC, and 4 from the breast cancer EBI got screened for breast cancer. All 8 participants reported discussing cancer screening with their providers. Open-ended responses to what they remembered from the sessions included importance of regularly screening for cancer and discussing cancer screening with their healthcare provider. Participants in the CRC EBI also correctly remembered the age to start CRC screening, and use of healthy diets to reduce CRC risk.

Conclusion: EBIs tailored through the Implementation Studio have potential to increase cancer screening rates among rural Hispanics. Future study will explore the utility of the Implementation Studio to CBOs serving other immigrant communities.

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POSTER WITHDRAWN

116-T

Impact of Trust on Cancer Screening: Findings from the 2022 Health Information National Trends Survey (HINTS)

Rincon MA, Moser RP, Blake KD

Purpose: Increasing distrust in health information over the last few years has the potential to negatively impact patient adherence to disease prevention guidelines. Recent findings show that patient trust in cancer information varies drastically by source. Although government health agencies and scientists provide foundational knowledge toward the development of evidence-based guidelines for cancer prevention, data from the Health Information National Trends Survey (HINTS) suggests that trust in government agencies and scientists is low (28 and 57%, respectively). This study assessed the association between trust in cancer information by source on interest in cancer screening among US adults without a cancer history.

Methods: Data from HINTS 6 (2022), a probability-based, nationally representative survey of the US adult population (N=4,982; response rate=26%), were used. Those with a history of cancer (n=900) and up to date with their screening (n= 1,096) were excluded from analysis. Binary logistic regression was used to assess the association between trust from four information sources (doctors, family/friends, government health organizations and scientists) and interest in cancer screening within the next year (not at all v. somewhat/little/very). Weighted, adjusted, odds ratios and confidence intervals (p<0.05) were calculated to assess the association between predictors and outcome.

Results: Respondents were primarily non-Hispanic-White (52%), had at least some college education (74%) and were 50+ years of age (61%). Distrust in government health organizations [OR= 2.26 (1.75, 2.93); p<.001]) was associated with having no interest to screen for any cancer in the next year. Trust in cancer information from friends or family, doctors and scientists did not significantly predict interest in future screening.

Conclusions: Our findings show that distrust in cancer information from government health organizations predicts disinterest in cancer screening among US adults without a history of cancer. Early cancer detection through screening is a critical factor towards favorable cancer outcomes. Future research should explore interventions that address a growing distrust in organizations that provide guidelines towards cancer prevention and control.

117-T

Influence of Healthcare Provider Recommendations on HPV Vaccination Intentions and Identification of Barriers Among Young Adults in Missouri

Obionu IM, Anikamadu O

Purpose: This study aimed to explore the relationship between Health care provider recommendation and intention to receive the HPV vaccine as well as the barriers to HPV vaccine uptake in Missouri young adults.

Methods: This was a cross-sectional survey among young adults aged 18 to 26 years attending one of the major universities in Missouri. Data was collected in April 2023 using a semi-structured online questionnaire. 448 students participated in the survey. Data was analyzed with SPSS version 29.

Results: The majority of the respondents identified as female 59.4% and most were non-Hispanic White 80.2%. The mean age of participants was 24 years. 87.2% of the young adults had ever received one or more doses of the HPV vaccine while 12.8% had never gotten the vaccine. Less than half of those who had never received any dosage of the vaccine 42.9% had intentions to get vaccinated within the next 6 months, 30.6% had no such intentions, and 26.5% were not sure whether they wanted to or not. Nearly half (49.0%) of the participants reported that a Health Care Provider (HCP) had suggested the vaccine to them. Of those who had received advice from a HCP to get vaccinated, 52.4% intended to get vaccinated in the future, while 46.4% did not intend to get the vaccine at all. There was no statistically significant association between a recommendation from a HCP to get the HPV vaccine and intention to get the vaccine in the future (OR 1.238, 95%CI:0.409-3.943). Uncertainty regarding the vaccine's safety and effectiveness was the most often cited barrier to vaccination among participants 42.9%, followed by worry about potential adverse effects 34.7%, uncertainty about the vaccine's potential cost 34.7%, lack of time 24.5% and uncertainty about the potential benefits of the vaccine 30.6%.

Conclusions: These findings highlight the need to strengthen HPV-related information, communication, and education of young adults in Missouri. Addressing cost-related concerns, providing clear information on the vaccine's benefits, and possible side effects, and improving access may enhance vaccination rates in this population. Additionally, this study also highlights the need for healthcare providers to continue to reinforce the recommendation of the vaccine to young adults

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Interest in Cancer Prevention and Screening among Older Adults on Facebook: Digital Health Opportunities

Miller C, Guidry J, and Fuemmeler B

Purpose: The purpose of this study was to examine interest in reading about cancer prevention and screening and the relationship between interest and cancer screening status among older adult Facebook users.

Methods: Facebook users age 50-75 years old were recruited and administered an online survey via Qualtrics in Fall 2020. Participants were asked to indicate their interest in reading about a variety of health topics on Facebook, including cancer prevention and screening (CPS). Response options included: (1) "Not at all," (2) "A little bit," (3) "A moderate amount," (4) "A lot," and (5) "A great deal" and were dichotomized as (3-5) moderately interested (vs (1-2) little/no interest). Cancer screening statuses were categorized as up-to-date (UTD) (vs not UTD) according to screening guidelines. Two logistic regression models, controlling for demographics, were run to assess whether interest in reading about CPS differed by colorectal cancer (CRC) and breast cancer (BCA) screening status.

Results: Respondents (N=769; 50.1% female) were on average 62.4 (SD=6.9) years old and 50.1% were non-Hispanic White. N=239 (31.1%) reported moderate interest in reading about CPS on Facebook. Most were UTD with CRC (n=532, 69.3%) and BCA (n=277, 71.9%) screenings. In the first regression, individuals UTD on CRC screening were significantly more likely to be moderately interested in reading about CPS (p=.021) (vs not UTD). Similarly, in model two, women UTD with BCA screening were significantly more likely to be moderately interested in reading about CPS (p=.039) (vs not UTD). In both models, increasing age associated with low/no interest, while being NH Black/African American or Other race/ethnicity (vs NH White) was associated with moderate interest in reading about CPS (all p <.05).

Conclusions: Results indicate individuals engaged in routine cancer screenings are more interested in reading about CPS on Facebook. Nonetheless, it is interesting that roughly one-third of participants reported moderate interest during this assessment (Fall 2020), when COVID-19 was a major public health concern and cancer screenings were being postponed. Future research should further explore the relationship between health behaviors and health-related information seeking on social media.

119-T

Summer Research Activities and Student Trajectories into Cancer Prevention Careers

Jung J, O'Grady M, Chakraverty D, Lee HY, Anderson CB, Chang S

Background: Summer research programs use many activities to foster career interest, often without knowing how interest is stimulated. The MD Anderson Cancer Prevention Research Training Program provides experiences in mentored research, professional development, and career navigation to foster student interest in cancer prevention (CP). Methods: To improve interventions for career planning, we identified themes for self-efficacy in research and exploring careers by qualitatively analyzing progress reports from 70 students from 3 10-wk cohorts (2015-17). Coded by year, results were combined to form themes.

Results: From 27 college, 31 graduate, and 12 clinical students, the themes were agents of change (AOC), informative gained knowledge (IGK), and guided career development (GCD). AOC comprised people and activities that created opportunities for learning about careers; people were role models (e.g., mentors, scientists, clinicians) interviewed about their journeys by students, peers exemplifying stages of training for research and clinical care, and patients with whom students interacted, inspiring those considering clinical work. AOC activities were semi-structured sessions, like Career Conversation seminars, Parachute career exercises, and shadowing. IGK referred to information learned by students useful for career decisions: tailored advice, clarification of steps required for specific paths (e.g., gyn oncology), better understanding of diverse CP careers, and introduction to previously unknown but potentially attractive CP careers. IGK also were "soft" skills (e.g., networking) valuable for clinical and multidisciplinary research teamwork. GCD described personal insights from experiences clarifying career fit, such as realizing preference for skills used by PIs managing research after working with mentors to solve research challenges. Understanding what successful careers in CP research are and seeing professionals as human - fallible, facing obstacles, and experiencing rejection, inspired students to know they could achieve career goals with insight to form, confirm, and reject them. Conclusion: Student narratives revealed that exposure to CP careers, getting information to inform career interests, and facilitating insight enhances CP career interest.

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The Role of Family Support in Promoting HPV Vaccination among Parents of 11- to 12-Year-olds

Khalil GE, Fisher CL, Chi X, Hansen MD, Sanchez G, Gurka MJ, Staras SAS

Purpose: While various psychological and systemic factors inform parents' decision-making on immunization, less is known about the role of social factors, particularly family support, on parents' decisions regarding human papillomavirus (HPV) vaccination for their 11- to 12-year-old children.

Methods: Within a cluster randomized trial entitled Text & Talk during 2022 and 2023, 670 parents of 11- to 12-year-olds completed a survey after receiving a vaccine promotion text message. parents reported their intention to vaccinate their child, perceived social norms, and identified up to three relational partners (e.g., friend, family member) within their social network who inform their decision-making. They also scored the level of support they receive from each nominated person. Data analysis was conducted with SAS 9.4 and included Chi-squared tests, Cochran-Armitage test for trend, analyses of variance, and mediation analyses to examine associations.

Results: Results indicated that receiving support from nominated confidants, especially family members, positively correlated with parents' HPV vaccination intentions (p<0.001). Nominating the first confidant as a family member as opposed to a friend or other relation was related to a higher intention to vaccinate (p=0.03). With each additional family member nominated (0 to 3), parents reported a higher intention to vaccinate their children (p< 0.01). With support as the mediator, nominating family members was associated with higher support received, and higher support was related to HPV vaccination intention (p<0.001).

Conclusions: Possessing family member confidants for vaccination increased the intention of parents to have their 11-to-12-year-old child receive the HPV vaccine. Our findings support the integration of a focus on family social support within multilevel HPV vaccination promotion interventions. Further exploration of in-network family ties and their relation to HPV vaccination intent is warranted to consider additional avenues for increasing HPV vaccination rates.

121

Using Text Messaging to Ascertain Eligibility for Lung Cancer Screening: Unveiling the Limits of Single Channel of Communication

Fridman I, Neslund-Dudas C, Carter-Bawa L, Elston Lafata J

Purpose: The prevalence of communication via cell phones may offer opportunities for health systems to efficiently gather the smoking history needed to determine lung cancer screening (LCS) eligibility. Research on text messaging for such assessments is limited, especially among marginalized populations. We explored people's willingness to share tobacco use history via text among diverse sociodemographic groups.

Methods: In 2020, we conducted a survey with respondents randomly selected from a US-based online panel. The survey asked about cell phone usage, smoking habits, sociodemographic characteristics, and likelihood of responding to a text message from their doctor's office inquiring about tobacco use. Information identified LCS-eligible and dual users of tobacco and e-cigarettes. We report respondents' willingness to engage in text messages, segmented by current tobacco use and sociodemographic characteristics. Chi-square/ANOVA tests were used for comparisons.

Results: 745 respondents participated. Among them 90% used text messaging; 54% never smoked, 33% currently smoked and 13% formerly smoked. Six percent were LCS-eligible and 64% were dual users. Those who currently smoked were significantly younger, less likely to be female, and more likely to use text messaging. LCS-eligible respondents were significantly older and less likely to have a high income. Dual users were significantly younger, less likely to be female, less likely to live in rural areas, and more likely to have a college education and high income. 83% of respondents indicated they were "likely" or "very likely" to respond to text message inquiries regarding smoking status. Middle-aged respondents were significantly more likely to report smoking status than younger or older respondents (91% vs. 84% and 84%, respectively). Respondents with no college education (83% vs. 88%) or lower income (81% vs. 86% mid- and 88% high-income) were significantly less willing to report smoking status. There were no significant differences in willingness by gender, race, and residential urbanicity.

Conclusion: Text messaging for assessing smoking history shows promise in identifying LCS-eligible individuals, but multimodality approaches will be crucial for equitable LCS access.

Cancer Health Disparities

122-T

A CFIR Guided Qualitative Study to Identify Factors Influencing the Implementation of an Evidence-Based Breast and Cervical Cancer Prevention and Early Detection Behavioral Health Program

Costa C, Allicock MA, McKenzie AH, Loomba P, Chenier RS, English A, Shegog R, Alaniz A, Adlparvar E, Valero Y, Savas LS, Fernandez ME

Purpose: Using the Consolidated Framework for Implementation Research (CFIR), we sought to identify Inner Setting constructs that could influence implementation of Salud en Mis Manos (SEMM), an evidence-based breast and cervical cancer screening program for Latinas, previously used in community settings and with limited reach in clinical settings.

Methods: We developed theory-informed (e.g., CFIR, Social Cognitive Theory, Readiness) interview guides to elicit barriers and facilitators of SEMM clinic implementation. We conducted 12 semi-structured interviews with clinic staff such as leadership, outreach coordinators, and lay health workers from four Texas health centers serving low-income Latinas. Transcribed interviews were analyzed using qualitative thematic analysis.

Results: We identified 12 of the 14 Inner Setting CFIR constructs. Key facilitators included Networks and Communications (e.g., having strong interprofessional relationships), Implementation Climate (e.g., experience with similar programs), and Learning Climate (e.g., obtaining staff buy-in). Common barriers and facilitators included Available Resources, Access to Knowledge and Information, Culture, and Compatibility (e.g., SEMM was viewed as a "good fit" with clinics' core missions to promote health education but perceived as incompatible if clinics prioritized specific health topics [e.g., breast cancer screening but not HPV vaccination] and lacked resources [e.g., limited time]).

Conclusions: CFIR, a theory-based systematic approach, enabled key stakeholder-identified barriers and facilitators to implementation of SEMM in clinical settings. These are important for identifying implementation support strategies that may differ from those used in prior community-based implementation efforts. These findings (part of the initial steps of Implementation Mapping protocol for strategy development) informed the design of a multifaceted implementation strategy to support SEMM use and maintenance in clinics.

123-T

A Systematic Review on Tobacco Use among Indian Tribal Population

Francis DL, Saravanan SP, Chopra SS

Background: Tobacco use is primarily responsible for the global economic burden of death and disease, which is currently connected to around 8,000,000 deaths per year, with approximately 80% of these fatalities occurring in low- and middle-income economies. The goal of this study was to conduct a comprehensive assessment of current literature on tobacco use among Indian tribal populations in order to determine the prevalence, distribution, and factors influencing tobacco use. These data are required to develop and adapt control methods targeted at reducing tobacco use among this disadvantaged population and preventing long-term illnesses.

Methods: A systematic review of evidence on tobacco usage among Indian tribal populations was done. This study used relevant articles published between 2005 and 2023 in PubMed, Crossref, Google Scholar, and Web of Science. We considered studies that reported the prevalence of tobacco use among Indian tribes in our review using the PRISMA standards.

Results: A total of 14 studies were reviewed, with a total population of 28,572 people. Tobacco consumption rates ranged from 12% to 42.5%. In gender-specific research, female smoking tobacco use ranged from 1.2% to 12%, whereas male smoking tobacco use ranged from 15% to 52%. Smokeless tobacco consumption, on the other hand, was quite common among the indigenous community. Lack of information about oral health, deeply ingrained dental beliefs, and restricted access to health services were the most significant risk factors for tobacco use.

Conclusion: In order to combat the tobacco use, further research into better methods and research-based regulations and workable quitting strategies must be prioritized. Campaigns promoting tobacco cessation and abstinence are advised in this review as a definite way to lessen the negative effects of cigarette smoking and tobacco misuse.

124

A Tailored Flyer "Only" May Not Increase the Colorectal Cancer Screening among Rural Residents? Lessons Learned and Cost Implications From a Pilot Randomized Clinical Trial

Kim J, Beseler C, Leypoldt M, Subramanian R, Funkenbusch K, Foster J, Harris S, Yoder A, Hymel E, Watanabe-Galloway, S

Stool-based tests, such as fecal immunochemical test (FIT), have been widely used for increasing colorectal cancer (CRC) screening among rural residents. But, limited studies have examined whether an educational flyer tailored to rural agricultural operators can increase FIT return rate and reduce incremental costs. In this randomized study, FIT kits were mailed to high-risk rural Nebraskans aged 45-74 that were not up to date on CRC screening. Half of the participants also received a one-page educational flyer tailored toward rural residents. Logistic regression was used to determine predictors of returning the FIT kit and Wilcoxon approximations to the two-sample t-test. We also analyzed the cost and cost effectiveness of the intervention. A total of 1,230 FIT kits were sent out and 192 were returned, of which 14.1% had an abnormal, positive result. We found no difference in return rate by the flyer vs. no flyer group (add statistics). Those that received the flyer returned the FIT kit earlier than those that did not receive the flyer (16 vs. 21 days), however this difference was not statistically significant. The incremental cost-effectiveness ratio for the mailed FIT kit with the flyer was $1,340 per additional person screened. The cost-effectiveness could be improved with a hypothetical return rate of 20% or higher. A tailored educational flyer should be used with other evidence-based implementation strategies to maximize the benefit.

125-T

Addressing Gastric Cancer Disparity in American Indian People: Associations between Diet Patterns and Helicobacter Pylori Infection in Navajo Adults

Phipps AI, Salama NR, Lampe JW, Wu MC

Helicobacter pylori (H. pylori) is a gram-negative bacterium that colonizes the stomach and is a strong risk factor for stomach cancer. A diet high in sodium and processed meats has been associated with H. pylori infection and may influence the course of H. pylori infection and associated disease. In this study, we examined dietary patterns associated with H. pylori infection in adults from the Navajo Nation, a tribal population experiencing a disproportionate burden of H. pylori infection (58% prevalence) and stomach cancer.

The Navajo ABID study was a cross-sectional community-based study conducted in the Navajo Nation. Diet information was collected from 104 adults using a food frequency questionnaire and a tribal food questionnaire. Stool samples were collected for assessment of H. pylori infection status using droplet digital PCR. Principal component analysis was used to identify dietary patterns, and logistic regression models assessed the association of dietary patterns with H. pylori infection.

Three dietary patterns were identified: 1) Western, 2) Soups and Mixed dishes, and 3) Fruits and Vegetables. After adjusting for confounders (age and sex), we found that a Soups and Mixed dishes diet pattern was positively associated with H. pylori. Navajo adults in the highest tertile of the Soups and Mixed dishes pattern scores had higher odds for H. pylori (OR=4.44, 95% CI, 1.22-17.8) than those in the lowest tertile. No significant associations with H. pylori infection were observed for the Western or the Fruits and Vegetable diet patterns.

The positive association between the Soups and Mixed dishes pattern and H. pylori infection may be attributed to sodium content and/or environmental exposures and could be intervened upon to prevent H. pylori infection. The Soups and Mixed dishes pattern contains meat/chili/Navajo stews, ramen, spaghetti, pasta, Asian noodles, burritos, and enchiladas, which may be consumed in the restaurant or purchased from local food vendors and are processed and prepared with high sodium. It is also possible that environmental transmission of H. pylori may occur in local food vendor settings through inadequate refrigeration of foods or consuming foods prepared in contaminated environments.

126-T

Association of Neighborhood Deprivation and Lung Cancer in African and European American Men in the NCI-Maryland Lung Cancer Case-Control Study

Pichardo CM, Cawley H, Pichardo MS, Ezeani A, Dorsey T, Wooten W, Zingone A, Agurs-Collins T, Nebeling L, Stefan A, Harris CC, Ryan BM

Importance: African American men (AA) have a higher risk of developing lung cancer than European American men (EA). Studies revealed mixed associations between neighborhood deprivation and lung cancer risk; but data is sparse for AA men.

Objective: To examine the association between neighborhood deprivation and lung cancer risk.

Setting and Participants: An age and race- matched case-control study of 2,044 AA and 3,249 EA from The NCI-University of Maryland recruited between 1998-2003.

Exposure: 2000 Census-tract standardized neighborhood deprivation index as continuous and quintiles (Q). Covariates included age, family history of cancer, body mass index, race, smoking, COPD, gender, and education.

Outcome: Lung cancer status.

Results: In risk adjusted logistic regression models (OR, 95% Confidence Interval (CI)), residing in neighborhoods with higher neighborhood deprivation was associated with increased disease odds (Q2: 1.30, 1.04-1.61; Q3: 1.39, 1.12-1.71; Q4: 1.48, 1.20-1.84; Q5: 2.57, 2.05-3.19) compared to neighborhoods with low deprivation (Q1). In sex and race-stratified analysis, the magnitude of the relationship was stronger among AA (Q3: 3.07, 1.82-5.16 versus Q1), particularly among men (Q3: 1.32, 1.00-1.73; Q4: 1.59, 1.22-2.07; Q5: 2.46, 1.91-3.15 v. Q1) than EA men (Q1: 1.30, 1.04-1.62; Q2: 1.37, 1.10-1.70; Q4: 1.38, 1.11-1.72; Q5: 1.86, 1.49-2.32). European American women residing in neighborhoods with very high deprivation had greater disease odds (Q2: 1.38, 1.10-1.72; Q3: 1.43, 1.14-1.78; Q4: 1.42, 1.13-1.73, Q5: 1.99, 1.58-2.50 v. Q1) compared to AA women (AA Q5: 1.71, 1.33-2.25 v. Q1).

Conclusion: Residing in neighborhoods with high deprivation may adversely influence lung cancer risk, with greater risk observed among AA men. Findings suggest that changing neighborhood environments may have important implications for lung cancer disparities. Tailoring neighborhood interventions to address cancer risk for AA men living in neighborhoods with greater socioeconomic deprivation is of importance.

127-T

Associations of Area-Level Socioeconomic Measures with Advanced Stage at Diagnosis of Anal Cancer among Adults with and without HIV in the US: An Analysis of the NCDB

Commaroto SA, Camacho-Rivera M, Guo Y, Giuliano Y, Islam JY

Purpose: People living with HIV (PLWH) are at higher risk for anal cancer compared to those without HIV, and this risk also varies by sex. Our objective was to evaluate associations of area-level social determinants of health (SDoH) with advanced stage-at-diagnosis (stage 3+) of anal cancer among people with and without HIV.

Methods: We used the US National Cancer Database (2004-2020), which captures 70% of US cancer cases, including patients aged 18-89 years with invasive anal cancer (ICD-O-3:C210/C211/C212/C218). Our main outcome was advanced stage-at-diagnosis, defined as stage 3 or 4. People living with HIV were identified using ICD9 (04200 to 04499, 07953, and V08) and ICD10 (B20 to B24, R75, Z21, B97.35). Our main exposures included area-level SDoH, specifically percentage of adults without a high school degree by patient's zip code and median income quartiles within patient's zip codes. We used hierarchical multivariable Poisson regression models clustered by facility ID to estimate adjusted Prevalence ratios with 95% confidence intervals.

Results: We included 53,326 adults diagnosed with anal cancer, including 61% women and 39% men. Our sample included PLWH (8%) and people without HIV (92%). Men were more likely to live in a lower income quartile and lower educational attainment among PLWH (31% vs 44%, p<0.001) and without HIV (21% vs 19%, p<0.001). Women were more likely to be diagnosed with advanced stage compared to men among PLWH (35% vs 26%, p<0.001) and people without HIV (33% vs 27%, p<0.001). After adjustment for age, sex, calendar year, and Charlson-comorbidity score, lower area-level education among PLWH (aPR:1.10;95 CI:0.93-1.29) and those without HIV (aPR:1.12;95 CI:1.07-1.16), and lower area-level median income for PLWH (aPR:1.20;95 CI:1.03-1.41) and those without HIV (aPR:1.10;95 CI:1.06-1.15), were associated with advanced stage anal cancer.

Conclusions: Our findings suggest that people with and without HIV living in socially deprived geographical areas may experience barriers to anal cancer screening. With the upcoming release of anal cancer screening guidelines, SDoH and associated barriers to screening should be considered to ensure widespread use of available technologies.

128

Barriers and Facilitators to Cervical Cancer Screening Uptake for Latina Women: A Systematic Review

Ortega S, Mobley EM, Vasquez T, Morikawa NS, Perez J, Barrow SB, Bylund CL

Background: Cervical cancer incidence is highest among Hispanic/Latina women, yet women in this population group have significantly lower cervical cancer screening uptake compared to non-Hispanic white and black women. Previous studies have identified barriers specific to cervical cancer screening adherence for Hispanic/Latina women, but there has not been a review that synthesizes these factors for Latina women specifically. Instead, current literature combines minority groups within analyses, ignoring the important information that can be learned through accurately analyzing their differences.

Objective: The current review aimed to identify barriers and facilitators to cervical cancer screening uptake for Latina women, either through self-reported data from Latina women themselves or perceived data from health care providers of Latina women.

Methods: Using systematic review methods, four databases were searched for articles published from January 1, 1997 through June 1, 2023. Included studies were those that reported barriers and/or facilitators to cervical cancer screening uptake for Latina women specifically.

Results: 31 studies were selected for inclusion. These studies identified barriers and/or facilitators to screening for women from 17 different Latin American countries. Studies were separated and analyzed based on three distinct groups: studies that focused on self-collection; studies that focused on provider performed Pap for initial screening; and studies that focused on abnormal Pap/follow-up care. The most common barriers reported were lack of knowledge, cost, time/responsibilities, fear, and provider mistrust. The most common facilitators reported were increasing social support and leveraging woman empowerment to increase feelings of self-love.

129-T

Behavioral Profile and Programming Needs of Female Adolescent and Young Cancer Survivors: Results from the Horizon Survey

Woods Barr AL, Wasser H, Nichols HB, Deal AM, Kushi LH, Chao CR, Valle CG

Purpose: Lifestyle interventions designed to meet unique needs of adolescent and young adult (AYA; diagnosed ages 15-39 years) cancer survivors are limited. This study aimed to identify information needs and intervention preferences (i.e., behavioral intervention content, timing, and modality) of female AYA survivors.

Methods: The AYA Horizon Study examined birth outcomes among female AYAs diagnosed with lymphoma, breast, melanoma, thyroid, and gynecologic cancers from three study sites. This study surveyed female AYA survivors to better understand fertility needs, reproductive experiences, and behavioral intervention preferences (N=1,679). Analyses examined associations between participant demographics and preferences for intervention content, timing (before, during, or after treatment) and modality (e.g., written material, mobile app).

Results: Participants (mean: 39.9 years at time of survey, 32.5 years at diagnosis, 7.2 years since diagnosis) were mostly White (80%) and survivors of breast cancer (39.9%). Over 50% received no information on physical activity, nutrition and diet, or weight management, and 90% received no information on smoking. Interest in receiving information was high overall but varied across behaviors: 44.8% physical activity, 51.8% nutrition, 43.7% weight management, and 11% smoking. Preferred intervention timing varied - participants were either "somewhat/very" interested in receiving physical activity, nutrition, and smoking information before treatment, and weight management information after treatment. Preferred modalities were interactive websites, personalized emails, and mobile apps, while the least popular was online videoconferencing. Preferred timing and modality varied by participant age, race, ethnicity, cancer type, and treatment.

Conclusion:. Most AYAs received no information on cancer-related behaviors despite high interest in receiving this information. This mismatch underscores the low priority placed on such information by cancer providers, and points to the need for clear information on the roles behavioral factors can play in AYA cancer survivorship. Specific intervention timing and modality preferences identified through this survey can help guide the design and prioritization of future interventions and referrals.

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Bridging the Gap in HPV Screening: A Qualitative Look at the Acceptability of Self-Collected HPV Testing in Black and Latinx Communities

Glass EA, Bauman K, Craemer KA, Holt H, Geller S

Purpose: Black and Latinx communities are less likely to be screened and more likely to be diagnosed and die from cervical cancer, especially in Chicago . Self-collected human papillomavirus (HPV) testing could improve screening adherence in these communities The objectives of this study were to identify barriers to screening and investigate the acceptability of self-collected HPV testing among the Black and Latinx communities.

Methods: Seventeen Black and/or Latinx community members meeting eligibility requirements that they be 18 years or older, have a cervix, and live in Chicago, completed qualitative interviews about their cervical cancer screening experiences and their acceptability of self-collected HPV testing, Thematic analysis using inductive and deductive coding was utilized.

Results: Interviewees identified as Black (n=9), Latinx (n=7) and other race (n=1). The median age was 39 (range: 25-63). The most common barriers to prior screening were transportation, scheduling difficulties, and lack of local providers that accept Medicaid insurance. Participants repeatedly cited their previous traumatic experiences, both within and outside of the clinical setting, that induced anxiety and caused resistance to regular screening. While participants were supportive of self-screening at home using mail-in kits or at a provider's location, many were still hesitant to seek screening due to potential issues with affordability. Participants understood that a positive or abnormal self-screening result would necessitate an in-person follow up and indicated their willingness to do so quickly. Overall, community members said they would use self-collected HPV test if it was available and several mentioned that this would address barriers they currently face.

Conclusions: Self-collected HPV testing could address barriers to traditional cervical cancer screening and increase cervical cancer screening rates, especially in Black and Latinx communities in Chicago.

131-T

Building Community Capacity to Decrease the Financial Burden of Cancer Care for Uninsured Individuals in Pima County, Arizona

Smith JA, Lara H, Armin JS, Johnson NJ, Klymko I, Radke T, Yubeta A, Hamann HA

Purpose: The goal of the current study was to engage stakeholders in addressing cancer care burden among uninsured cancer patients in Pima County, Arizona, a U.S./Mexico border county with a high rate of uninsured individuals (12%) and no dedicated cancer care safety net system.

Methods: Utilizing a community-engaged framework, 4 focus groups were conducted with identified county stakeholders, including community health workers (CHWs)/educators, primary care clinicians, health care service administrators, and health policy officials. In addition, 4 uninsured cancer patients participated in individual, semi-structured interviews. Data were transcribed, coded, and assessed for themes.

Results: Primary interview themes included the following, a) Delayed, incomplete, and inefficient care: Financial barriers affected continuity of patient care, including gaps in treatment and follow-up; b) "Patchwork" safety net: workarounds, informal community networks, and patient support networks to obtain treatment and resources for uninsured cancer patients; c) Infrastructure fragility: lack of centralized referral system and instability of resources, including philanthropic funds and discounted care rates; d) Importance of a Federally Qualified Health Care (FQHC) primary care system for coordination: care coordination navigation resources associated with El Rio Health, the largest FQHC in the county.

Conclusions: Results suggest the need for multilevel interventions to improve cancer care for uninsured individuals in Pima County. Continued engagement with many types of communities is crucial to support patient-level interventions (e.g., community-focused navigation), as well as system-, community-, and state-level efforts (e.g., charity care programs, care coordination programs, expanded coverage policies).

132-T

Cancer Mortality among Hispanic Groups in the US, by Birthplace (2003-2017)

He Y, Tripathi O, Nguyen H, Palaniappan LP, Srinivasan M, Pinheiro PS, Thompson CA

Purpose: To understand variations in cancer mortality burden attributed to countries of birth among Hispanic population, the second largest racial/ethnic group in the US, we aimed to study differences in cancer mortality rates and trends among Hispanic decedents disaggregated by specific ethnicity and stratified by nativity (foreign-born vs. US-born) over a 15-year time period.

Methods: 304,912 Hispanic decedents (classified as Mexican, Puerto Rican, Cuban, and Central or South American) with cancer-related deaths from US death certificates (2003-2017) were analyzed. 12 cancers that contribute significantly to Hispanic cancer mortality were selected and categorized by predominant etiology: tobacco-related, screen-detected, diet/obesity-related, alcohol-related and infection-related. We estimated 5-year age-adjusted mortality rates [AAMR (95% CI); per 100,000] and standardized mortality ratios [SMR (95% CI)] using foreign-born as the reference group. Joinpoint regression analysis was used to model cancer-related mortality trends for the highest burden cancers by sex, for males: cancers of the lung and bronchus, colon and rectum, liver, prostate, and pancreas; and for females: cancers of the lung and bronchus, liver, pancreas, colon and rectum, breast, and ovary.

Results: In general, we observed higher cancer mortality rates among foreign-born Hispanic males and females than their US-born counterparts, with the exception of Mexicans. Foreign-born Puerto Ricans, foreign-born Cubans, and US-born Mexicans had the highest AAMRs across all groups. Over the study period, US-born and foreign-born Hispanic groups experienced decreasing cancer deaths by cancer sites over the years, with some exceptions from liver cancer mainly experienced by Mexican Americans. We also noticed that the SMRs comparing US-born to foreign-born counterparts showing observed excess relative risks attenuated, but the protective SMRs grew more pronounced for Central or South Americans over time.

Conclusions: There is notable heterogeneity in mortality rates across Hispanic groups by nativity. Understanding the disaggregated patterns and trends can motivate deeper discussion around behavioral health and prevention strategies, which may improve the health of Hispanics across the US.

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Changes in Allostatic Load Following a Randomized Lifestyle Intervention among African American Breast Cancer Survivors

Awoyinka IA, Sheean PM, Visotcky AM, Banerjee A, Sharp LK, Stolley MR

Purpose: Racial disparities in breast cancer survivorship persist despite clinical advancements. Chronic stress is implicated as a contributor to these disparities, with allostatic load (AL) considered a measure of this stress. Associations between AL and overall health and cancer outcomes are documented, yet less is known about factors influencing these relationships. Additionally, few studies have explored mechanisms for improving AL. This study examines the impact of Moving Forward, a 6-month lifestyle intervention for African American breast cancer survivors (AABCS) on AL.

Methods: 246 AABCS were randomized to the 6-month interventionist-guided (IG) or self-guided (SG) program. The IG program, in partnership with Chicago Park District, was held in 8 predominately AA neighborhoods and included 2x-weekly classes focused on improved diet, increased physical activity and weight loss. SG received similar information but no personal contact. AL scores were calculated using 11-criterion based on existing literature and study availability and included: systolic and diastolic blood pressure, resting heart rate, total cholesterol, high-density lipoproteins, triglycerides, hemoglobin A1c, body mass index, waist circumference, C-reactive protein, and medication use to control hypertension, diabetes, or cholesterol. Each criterion, measured at baseline, 6- and 12-mos, was assigned a score of 0 or 1, with 1 point given if the criterion was in the high-risk range for the indicator. Maximum score for the AL index was 11. A linear mixed effects model was used for statistical analysis, with significance in outcomes between IG and SG determined using the p-value of the appropriate interaction term in the linear model.

Results: At 6-months AL was significantly different between IG and SG (P=0.027). Within the IG group, women demonstrated a 5.6% reduction from baseline to 6-mos (p=0.034), with significant improvements seen in 5 of the 11 criterion. SG group showed no significant changes. At 12-mos, between nor within group differences were observed.

Conclusion: AL may be amenable to change in response to a lifestyle intervention. Understanding how changes in AL impact cancer recurrence risk and outcomes may inform its usability as a potential marker of intervention impact.

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Community Health Educator (CHE) Led Educational Intervention to Increase CRC Screening Awareness among Rural Communities in Northern Wisconsin

Carroll C, Smith A, Dahlke A, Traynor A, Bailey H, Ward E

Purpose: Northern Wisconsin is predominantly rural with several counties presenting high Area Deprivation Index (ADI) scores and below state-average Colorectal Cancer (CRC) screening rates. We conducted an educational intervention among Northern WI rural communities to disseminate evidence-based information on CRC screening, increase awareness of CRC prevention, and evaluate knowledge change post intervention.

Methods: The initiative was developed by the National Cancer Institute (NCI) National Outreach Network (NON). It comprised of an educational intervention designed for unrepresented populations delivered by a Community Health Educator (CHE). The study was exempt by the Institutional Review Board. Inclusion criteria were age 45 - 75 years and residence in rural Northern WI. Baseline pre- and post-intervention assessments were conducted with 14-question/18-item questionnaires about CRC risk factors and screening and a 5-question intentions assessment. Follow-up assessments 3- and 6-months post intervention are in progress and were not included in this report. Descriptive analysis was conducted. Knowledge change was examined as a percentage of correct answers gained or lost (post-intervention score - pre-intervention score/18). Median was utilized to divide participants into 2 groups: little/no knowledge change vs knowledge change.

Results: Between November 2022 and September 2023, 109 participants completed the baseline assessment. Participants' mean age was 59.4 years (ffl8.59), 65% were female; 13.8% self-identified as American Indian/Alaska Native (AI/AN), and 83.5% as White, consistent with the Northern WI population race distribution. Nearly 67% of participants were college-educated, 83.3% had CRC screening, 41.3% had insurance through employer. Questions about starting age for stool test and Lynch Syndrome had the lowest percentage of correct answers pre-intervention (59.6 % and 62.4%, respectively). The median percentage of knowledge change was 0.11 (range: 0 - 0.44), and 41.3% of participants had knowledge change above 11%. Change in intentions was not observed.

Conclusion: The intervention increased knowledge among study participants. We look forward to evaluating knowledge retention and intent to screen with the 3-month follow-up assessment.

135-T

Epidemiologic Predictors of Hormone Receptor Staining Levels in African American Women with HR+/HER2- Breast Cancer

Fielder A, Kyko J, Nair M, Ruterbusch J, Simon M, Hamel L, Schwartz A, Purrington K

Purpose: Utilize data within the Detroit Research on Cancer Survivors (ROCS) cohort to characterize the predictors of estrogen receptor staining levels among African American women with hormone receptor positive (HR+) breast cancer

Methods: Data from 748 female HR+ breast cancer survivors enrolled in Detroit Research on Cancer Survivors (ROCS) were analyzed. Risk factors of interest included self-reported demographics, socioeconomic characteristics, and health behaviors. Individual and combined ER and PR percent staining levels were obtained from medical record review and categorized into three groups: low (1-10%), medium (11-50%), and high (>50%). Associations between risk factors and combined ER/PR staining levels were evaluated using chisquared tests, and univariable and multivariable linear regression. An alpha value of 0.05 was set to determine statistical significance.

Results: In our cohort, a majority of patients (86.6%), had tumors that were characterized as high HR staining. A small percentage of tumors were found to be in the low (6.6%) or medium (6.8%) staining categories. When looking at each variable individually, demographic and medical history variables are associated with low staining levels, including, age at diagnosis (beta=0.038,p= 1.05 xe-4) and diabetes (beta=0.052,p= 0.03), high blood pressure (beta=0.060,p=0.0037) and high cholesterol (beta=0.0519,p= 0.028). When stratified by HER2 status, these associations held up only among HER2- patients. In a multivariable model, low HR staining was associated with high blood pressure (beta=0.0457,p=0.0081), breast cancer subtype (beta=-0.0712,p=0.0014), education (beta=0.0195,p=0.0060) and smoking (beta=0.0345,p= 0.0308). When stratified by HER2 status, age at diagnosis (beta=0.0028, p= 0.0097), was an association only among HER2- patients.

Conclusions: Our findings identify multiple risk factors that are associated with weakly positive ER tumors. As AAW die more frequently from ER+/HER2- weak breast cancers, these findings have potential application in improving future screenings and providing optimal therapeutics, resulting in a better prognosis among this cohort.

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Evaluation of Factors Influencing the Implementation of Evidence-Based Strategies for the Prevention of Infection-Related Cancers in Asian American Communities

Lee M, Kranick J, Kwon S, Foster V, Chebli P, Yusuf Y, Trinh-Shevrin C

Purpose: Asian Americans experience disproportionately more infection-related cancers than other racial and ethnic groups. Evidence-based interventions (EBIs) aimed at reducing infection-related cancers may leverage strategies, such as electronic health record (EHR)-based clinical decision support, community health worker (CHW)-delivered counseling, and patient navigation, to improve EBI uptake; however, quality of program implementation can demonstrably influence their success. This study evaluated the implementation of three community-clinical programs addressing infection-related cancers to identify and contextualize 'best practice' recommendations for optimizing implementation of EBIs among Asian American communities in New York City.

Methods: The Consolidated Framework for Implementation Research (CFIR) was applied to evaluate multi-level factors affecting EBI implementation among Asian American communities across three cancer prevention programs targeting specific cancers, including human papillomavirus (HPV)-induced cervical cancer, hepatitis B virus (HBV)-induced liver cancer, and helicobacter pylori (H. pylori)-associated stomach cancer. Semi-structured key informant interviews (n=16) were conducted with program leadership, staff, and CHWs from each program.

Results: Framework-driven thematic analysis suggests the importance of: 1) capturing the perspectives of multiple partners (e.g., clinical providers, community based organizations, faith based organizations) and sustaining their engagement and buy-in; 2) fostering program flexibility to accommodate a variety of implementation environments and meet dynamic and shifting community resources and priorities; 3) prioritizing not only recipient-centeredness, but also deliverer-centeredness; and 4) understanding and preparing for interoperability between the program and inner setting to effectively implement these initiatives.

Conclusions: This study outlines several best practices for the implementation of EBIs for preventable cancers among Asian American communities. Successful implementation can maximize an intervention reach, equity, and impact to help eliminate cancer disparities.

137-T

Examining Rural/Urban and Socioeconomic Gaps in Gene Expression Profiling Uptake among Early-Stage Breast Cancer Patients Who Received Neoadjuvant Systemic Therapy

Freeman JQ, Omoleye OJ, Hara JH

Purpose: To assess rural/urban and socioeconomic disparities in the uptake of gene expression profiling (GEP) in patients (pts) with stage I-III, HR+/HER- breast cancer who received neoadjuvant chemotherapy (NACT) and/or endocrine therapy (NET).

Methods: Data were from the 2010-2020 National Cancer Database (NCDB). Rural/urban residence, defined by US Department of Agriculture Economic Research Service Rural-Urban Continuum Codes, was categorized as "rural/urban/metro." GEP uptake (i.e., the 21- or 70-gene assay) was dichotomized as "yes/no." Multivariable logistic regression was used to calculate adjusted odds ratios (AOR) and 95% confidence intervals (CI).

Results: Of 29,394 pts (mean age 54 years [SD=12]), 87.6%, 10.9%, and 1.4% resided in metro, urban, and rural areas, respectively. The median distance to care was 11.7 miles (IQR=5.3-32.0). Most pts (76.5%) received NACT only, followed by 13.1% both NACT and NET and 10.5% NET only. Overall, 19.5% had GEP testing. A higher proportion of pts in metro areas had GEP testing than pts in urban or rural areas (19.8%, 18.3% vs. 14.0%; p=.002). Community cancer programs reported a slightly lower percentage (18.0%) of GEP uptake than comprehensive community (19.6%), integrated network (19.8%), or academic/research (20.8%) programs (p=.043). Pts in rural areas were less likely than pts in metro areas to receive GEP (AOR=0.66; 95% CI=0.45-0.97); no difference was observed between urban and metro areas (AOR=0.94; 95% CI=0.82-1.08). Black pts were less likely to receive GEP than their white counterparts (AOR=0.86; 95% CI=0.76-0.99). Compared to privately insured pts, uninsured pts (AOR=0.71; 95% CI=0.54-0.93), pts on Medicaid (AOR=0.85; 95% CI=0.73-0.98) or Medicare (AOR=0.85; 95% CI=0.75-0.97) were less likely to had GEP testing. Pts with a median household income of $40,227-50,353 (AOR=1.18; 95% CI=1.02-1.37), $50,354-63,332 (AOR=1.21; 95% CI=1.04-1.42), or ≥$63,333 (AOR=1.34; 95% CI=1.13-1.57) were more likely than pts with <$40,227 to receive GEP.

Conclusions: In the NCDB cohort of breast cancer pts, our findings highlight rural/urban and socioeconomic disparities in GEP uptake and suggest the need for equity-focused cancer programs to improve the access to GEP testing for rural or socioeconomically disadvantage.

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Experiences of Healthcare Racial/Ethnic Discrimination, Trust in Healthcare Providers and Systems, and Report of Material Hardship

Camacho-Rivera M, Ortiz K, Islam J, Bailey Z

Purpose: The objective of this study is to examine associations between experiences of racial/ethnic discrimination within healthcare settings, trust in healthcare providers and healthcare systems, and experiences of material hardship.

Methods: We used data from the nationally representative Health Information National Trends Survey Cycle 6. Primary outcomes include self-report of experiences of food insecurity, forced housing displacement in the last 12 months. Primary predictors include level of trust in healthcare providers, level of trust in healthcare systems, and experiences of racial/ethnic based discrimination in healthcare settings. Covariates include age, sex assigned at birth, race/ethnicity, income, insurance status, education, primary language spoken, and personal cancer history. For each primary outcome, we ran a series of ordered logistic regression models with jackknife replication weights to account for the complex survey design.

Results: In multivariable models of food insecurity, adults who experienced racial/ethnic based discrimination in healthcare settings were 80% less likely to report food insecurity (aOR 0.17, 95% CI 0.08 - 0.38). We observed a statistically significant interaction between race/ethnicity and discrimination, whereby non-Hispanic Black adults who experienced healthcare discrimination were 5 times more likely to report food insecurity (aOR 5.07, 95% CI 1.90 - 13.55). In multivariable models of experiences of forced displacement, adults with less trust in healthcare providers were significantly more likely to report forced housing displacement compared to those who trusted doctors (aOR 1.81, 95% CI 1.15 - 2.84). Latinx adults who didn't trust healthcare providers were 50% less likely to report forced housing displacement (aOR 0.47, 95% CI 0.22 - 0.99). Cancer survivors were twice as likely to report forced housing displacement than participants without a history of cancer (aOR 2.17, 95% CI 1.18 - 3.99).

Conclusions: Given the increased attention to screening for social needs within healthcare encounters, interventions to increase trustworthiness and mitigate discrimination in healthcare settings are needed to sustain relationships between healthcare providers, systems, and individuals from minoritized communities.

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Exploring Early Initiation of HPV Vaccination in a Rural, Midwestern State

Askelson NM, Ryan G, Kahl A, Callaghan D

Purpose: To use immunization registry data to explore patterns in early initiation of HPV vaccination.

Methods: We analyzed data from the Iowa Immunization Registry to compare sociodemographic characteristics between three groups: (1) early initiators (ages 9 or 10), (2) on-time initiators (ages 11 or 12) or late initiators (ages 12+). Our dataset contained information for individuals (n=460,320) born between 2004 and 2013 along with gender, race/ethnicity, zip code, county, and a record of insurance type that paid for vaccines. We used zip code to calculate rurality using the Rural-Urban Commuting Area codes. We calculated frequencies and descriptive statistics for all variables and used Chi square tests to make comparisons between the three groups.

Results: Over half (55.6%) of adolescents had at least one dose of the HPV vaccine series. Of those, 3.3% were early initiations, 67.9% were on-time initiators, and the remaining 28.8% were late initiators. Males were more likely to be late initiators (52.8%, whereas females were more likely to initiate early (55.8%) or on-time (50.78%) (p<.0001). Non-white adolescents were more likely to be early initiators; 66.3% of early initiators were white, compared to 80.3% and 80.8% of on-time and late initiators, respectively (p<.0001). Rural adolescents were less likely to initiate early; only 18.7% lived in small rural areas, compared to 22.9% of on-time initiators, and 30.4% of late initiators (p<.0001). Finally, among early initiators, almost half of vaccines were paid for by private insurance (49.8%), whereas among on-time and late initiators, that percent was much lower (36.7% and 34.9%), respectively (p<.0001).

Conclusions: Given the data that early initiation leads to on-time completion, it is now essential to better understand what populations are initiating the series early and where there is opportunity for improvement. Our data, from a robust statewide registry, reveals that non-white adolescents, as well as those in urban areas with private insurance are more likely to initiate the series early. Using registry data can support targeted state-wide campaigns and inform local public health efforts to promote early initiation.

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Faith in Action! The Development of a Church-Based Navigation Model to Increase Breast Cancer Screening in Korean Women

Kim DH, Gresham GK, Sung MJ, Jeon CY, Finster LJ, Fine M, Herrmann AK, Lee JY, Haile RW, Surani Z

Purpose: Korean American women have disproportionately low breast cancer (BCa) screening rates and there is a need for culturally tailored interventions to increase BCa screening adherence in Korean women, a majority of whom are affiliated with local churches. To address this need, we developed a culturally tailored, Church-based navigation model and educational intervention: Faith in Action!

Methods: A community research collaboration was established between the Cedars-Sinai Cancer Research Center for Health Equity, facilitated by Community Outreach and Engagement, and the Los Angeles (LA) Onnuri Church to develop the intervention, taking the following steps: (1) Engage key partners: A Community Advisory Board (CAB) was assembled, including Korean faith leaders, BCa survivors, clinicians, representatives from Federally Qualified Health Centers, the State's Every Woman Counts Program, and nonprofit organizations; (2) Develop intervention and culturally adapt the Cancer 101 curriculum, originally created by Fred Hutch Cancer Center: With input from the CAB, the curriculum was translated and adapted to meet the needs of the Korean Community. Components included BCa risk reduction, early detection, diagnosis, treatment, survivorship and navigation; (3) Recruit and train peer navigators: A train-the-trainer approach was used to educate lay health navigators to deliver the intervention. Focus groups and key informant interviews were conducted to obtain feedback on the intervention.

Results: Feedback from stakeholder interviews and focus groups, including use of culturally appropriate images and text, and ensuring proper translations of the meaning and context into Korean, was incorporated into the finalized curriculum. The intervention was then presented at a community engagement event with all study stakeholders to gather additional feedback. Suggestions, such as emphasis on navigation and condensing of oncology content, were incorporated into the final intervention for further testing and dissemination.

Conclusions: Faith in Action! was deemed acceptable as a tailored approach to enhance knowledge and BCa screening awareness among Korean American Women. A cluster randomized trial (NCT05298605) is currently underway to test the efficacy of Faith in Action!

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Food Insecurity Among Cancer Survivors in New York State: Lessons from the COVID-19 Pandemic

Camacho-Rivera M, Hailie K, Pareek E, D' Angelo D, Gany F, Maglione F, Jack K, Cather A, Phillips E

Purpose: To examine the determinants of food insecurity among cancer survivors compared to those without cancer across New York State before and during the COVID-19 pandemic.

Methods: We computed unweighted and survey-weighted descriptive statistics to summarize the demographic and clinical characteristics of respondents to the New York Behavioral Risk Factor Surveillance System for 2019 and 2021. Multivariable survey-weighted logistic regression models were applied to identify factors associated with food insecurity among respondents with a history of cancer vs. those without.

Results: Pre-pandemic the proportion of food-insecure cancer survivors vs. those without cancer did not differ (17.78% vs 19.5%; p=0.3716). During the pandemic, this gap widened (20.36% vs 25.12%; p=0.0061) due to food insecurity rates among those without cancer (19.5 % vs 25.12%; p=<0.0001). Predictors of food insecurity pre-pandemic included non-White race (OR 2.28; 95% CI 1.15, 4.53; p= 0.018), household income <$15,000 (OR 23.04; 95% CI 6.43, 82.53), household income $15,000 to less than <$25,000 (OR 23.13; 95% CI 6.86, 78.06, p=0.002), and more chronic health conditions (OR 1.46; 95% CI 1.13, 1.88 p=0.004). During the pandemic, lower household income (<$15,000 OR 16.05; 95% CI 5.64, 45.68 p=0.002 and $15,000 to less than <$25,000 OR 12.07; 95% CI 4.92, 29.61 p=0.005) and non-White race (OR 1.83; 95% CI 1.02, 3.28 p=0.042) remained significant, however the magnitude of the odds decreased. Additionally, cancer survivors who were out of work for less than 1 year had higher odds of food insecurity (OR 6.92; 95% CI 1.90, 25.19 p<0.001).

Conclusion: Closing the gap in existing disparities in food insecurity among cancer survivors and those without cancer across NYS may have been secondary to the expansion of food policy reforms that gained prominence during the COVID pandemic. While most COVID-19 food policies were incremental, more than 300 food policies were advanced by New York City and State legislators and administrators, the totality of which provides key insights into opportunities to promote longer-term equity in food access for vulnerable populations post-pandemic.

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Formative Research to Support Development of Digital Tools to Increase Referral and Enrollment to Therapeutic Clinical Trials among Black/African American and Hispanic Patients at an NCI Designated Comprehensive Cancer Center

Vadaparampil ST, Amorrortu R, Fuzzell LN, Garcia M, Tapia-Kwan E, Zhao Y, Geiss C, Blackwell R, Eschrich S, Rollison DE

Purpose: To address underrepresentation of diverse populations in clinical trials (CT), we conducted formative interviews with key clinical stakeholders to identify preferences for features of digital tools developed to address multilevel barriers to referral and enrollment of Black and Hispanic patients on therapeutic cancer CTs.

Methods: We conducted qualitative interviews with cancer center (CC) physicians (CCPs), clinical research coordinators (CRCs), and community physicians (CPs) from June-October 2023. Data were analyzed with rapid analysis procedures to systematically identify actionable feedback in a short timeframe.

Results: Findings from 20 completed interviews indicate CCPs, CPs, and CRCs were receptive to a digital tool to facilitate connection among one other, particularly with features like the ability to search open trials and communicate with and refer patients directly to the CCP and/or CTs. CCPs and CRCs also supported development of a dashboard to monitor enrollment rates and compare sociodemographics of the CC patient population to those enrolled in CTs. CCPs were also enthusiastic about internally facing digital tools designed for CCPs and CRCs to assess the eligibility criteria that may disproportionately exclude minorities from CTs. They also shared positive feedback for a tool to profile the CT portfolio by displaying number of open trials and current patients by department and suggested adding trial specific information (e.g., trial phase, patient slot availability). Finally, CCPs responded positively to a tool to help pinpoint geographic areas in the catchment with highest potential to reach minority populations through CT-related patient outreach/education. All stakeholders expressed concerns about incorporating new digital tools into their workflow.

Conclusions: Findings support development of digital tools to enable communication, information sharing, and referral between CCPs, CRCs, and CPs. CC-based stakeholders were open to tools to monitor CT enrollment in real-time and align the trial portfolio and eligibility to respond to the cancer burden of the patient population. Findings highlight value in seeking user input to design digital tools to meet their needs, increasing potential for adoption.

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Geospatial Accessibility to Radiation Oncologists and the Prognosis among Women with Ductal Carcinoma in Situ of the Breast

Nabi O, Liu Y, Struthers J, Shrestha P, Lian M

Purpose: To evaluate the role of geospatial accessibility to radiation oncologists in treatment and outcomes of ductal carcinoma in situ (DCIS).

Methods: Identified from the Surveillance, Epidemiology, and End Results dataset, eligible cases included adult women diagnosed with unilateral DCIS between January 1990 and December 2015 and followed through December 2016. Using the National Plan and Provider Enumeration System dataset, we developed a county-level index of geospatial accessibility to radiation oncologists that was then linked with the DCIS cohort. Multilevel logistic regression and Cox proportional hazards regression were used to estimate odds ratios (ORs) of local treatment patterns and hazard ratios (HRs) of subsequent invasive breast cancer (IBC) and mortality, respectively.

Results: Of 127,127 participants, 70.0% underwent breast-conserving surgery (BCS) and 27.3% had mastectomy. Among patients with BCS, 61.6% received radiotherapy. Compared with women in neighborhoods with the highest geospatial accessibility to radiation oncologists, women in neighborhoods with the lowest geospatial accessibility to radiation oncologists had higher odds of undergoing mastectomy (vs. BCS), (OR=1.27, 95% CI 1.13-1.42; Ptrend<.0001), lower odds of receiving radiotherapy post-BCS (OR=0.78, 95% CI 0.64-0.94; Ptrend<0.001), and higher hazards of ipsilateral IBC (HR=1.24, 95% CI 1.08-1.42; Ptrend=0.049) and breast cancer-specific mortality (HR=1.13, 95% CI 0.99-1.29, Ptrend=0.03). Moreover, the associations between accessibility to radiation oncologists and treatment were more obvious in women age 65 and older vs those under age 65 and in more vs less racially and economically segregated counties (Pinteraction<0.05). There was no significant association of geospatial accessibility to radiation oncologists with subsequent IBC, contralateral IBC, or overall mortality.

Conclusion: Geospatial access to radiation oncologists had an impact on local treatment for DCIS, especially among older patients and patients living in the low-income black concentrated counties, as well as prognosis of DCIS. Interventions addressing geographic barriers to radiation oncologists may improve DCIS treatment and prognosis.

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Go Fund Yourself: A Content Analysis of LGBTQ+ Cancer Crowdfunding

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Purpose: Cancer survivors may turn to cost-coping behaviors like crowdfunding to afford their care. LGBTQ+ (lesbian, gay, bisexual, transgender, queer, plus) cancer survivors are particularly susceptible to experience economic instability. The crowdfunding experiences of LGBTQ+ populations with cancer are unknown. We analyzed the campaign descriptions of LGBTQ+ cancer crowdfunding campaigns.

Methods: We integrated community-engaged and technology-based methods to create a dataset of LGBTQ+ crowdfunding campaigns collected from GoFundMe in November 2022, which included campaign titles, descriptions, and metadata. To center the LGBTQ+ community, our LGBTQ+ advisory board met four times between 8/2022 and 4/2023 to refine the crowdfunding dataset and develop a qualitative codebook for content analysis of LGBTQ+ cancer campaigns. Two cycles of inductive qualitative coding were performed by the study team and advisory board members,. We report on the two most common categories: 1) Justifying funding requests and 2) Humanizing crowdfunding.

Results: A total of N=401 LGBTQ+ cancer campaigns were included. Justifying funding requests (category 1) summarized primary reasons for starting the campaign (e.g., inability to work due to cancer or lack of insurance) as well as intended use of funds (e.g., cancer treatment, cost of living, caregiver support). Humanizing crowdfunding (category 2) included rhetorical strategies employed by the campaign writer, such as personal storytelling, emphasizing moral characteristics, and population-level cancer facts. A common thread influencing these interpretations were campaign characteristics specific to LGBTQ+ populations, including emphasis on chosen family, connections to community organizations, and shared experiences of non-acceptance to promote fundraising.

Conclusions: This study highlights how crowdfunding is uniquely used by LGBTQ+ cancer survivors, a population at risk of financial burden and social stigma. We found that campaigns creators use a variety of strategies to justify their funding requests and humanize the campaign recipient. Future research is needed to quantify potential inequities in crowdfunding success among LGBTQ+ cancer survivors.

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Hmong Promoting Vaccines: A Pilot to Evaluate Dissemination and Implementation Strategies for a Culturally-Tailored Website

Xiong S, Khang T, Torres MB, Vue B, Pergament S, Culhane-Pera K, Desai J, Wilhelm A

Human papillomavirus (HPV) vaccination rates among Hmong-American adolescents are below national averages, despite higher rates of cervical cancer in this population. To address this issue, our community-based participatory research team developed a culturally-tailored website called Hmong Promoting Vaccines, featuring educational modules on HPV and HPV vaccines in both Hmong and English. The website successfully improved knowledge and self-efficacy among parents and adolescents to obtain HPV vaccines. In this pilot project, we conducted an implementation study in six user organizations (2 primary care clinics, 2 school-based health clinics, and 2 school health education classrooms) and collaborated with eight community-based organizations to determine effective dissemination strategies. We conducted pre- and post-implementation interviews with all organizations to gather feedback on the website's content and dissemination strategies. Google Analytics was used to evaluate the implementation over an eight-week period. Through these efforts, we promoted the website to approximately 419 individuals, resulting in 300 new users who spent an average of nearly 12 minutes on the website. The most successful dissemination occurred in a health education class, where the website was integrated into the curriculum, reaching 117 individuals. Post-implementation interviews revealed that poster and handout distribution integrated well into clinic workflows, and discussing HPV vaccines during adolescent preventive health visits were found to be most effective. However, time constraints and lower receptivity to vaccine conversations during non-preventive health visits were identified as implementation barriers. Adolescents also preferred alternative formats to paper handouts. Feedback from community-based organizations also indicated a strong interest in scaling up the website's reach within both Hmong and non-Hmong populations. This pilot study demonstrated the feasibility of disseminating and implementing a culturally-tailored educational website in primary care clinics, school-based health clinics, and school health education classrooms. Health education curricula in culturally-specific schools were particularly effective in reaching the target audience.

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Identifying and Understanding the Prevalence of Social Risk Factors in an Urban Oncology Setting

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Purpose: The prevalence and type of social risk factors among cancer patients and survivors is not well understood.

Methods: We offered social risk factor screening to all people with a history of breast or prostate cancer at an urban hospital in Washington DC as part of standard of care. Patients were eligible for screening if they had completed curative treatment (stage I-III), were more than six months from diagnosis (stage IV) or were assigned to active surveillance. Community health workers contacted eligible patients by phone. We used an 8-item screener embedded in the electronic health record covering domains of financial strain, food insecurity, transportation, utilities, employment, and housing instability. We used descriptive statistics to understand prevalence of social risk factors by selected patient demographic characteristics.

Results: From May 2022-September 2023, we screened 227/284 eligible patients (80%), suggesting most patients were willing to answer questions about social risk factors. Of the individuals screened, the average age was 65 years and 83% were non-Hispanic Black patients, whereas among those not screened average age was 66 years and 75% were non-Hispanic Black. Of those who were not screened, 11 declined, 37 were unable to be reached, and 9 patients had missing records due to technical issues. 64/227 (28%) of those who completed screening reported social risks. Among those who reported social risks, the most prevalent were related to financial strain (n=48), food insecurity (n=29), transportation (n=24), housing instability (n=12), employment (n=5), and paying for utilities (n=4). We found no differences in prevalence of citing any social risk factors by age <65 vs 65+, but a higher prevalence among Black (28%) and other race (47%) patients compared to White patients (14%) and among Hispanic/Latino patients (67%) compared to non-Hispanic/Latino patients (27%).

Conclusions: In an urban cancer center in Washington DC most patients were willing to answer questions about social risk factors and 28% cited a risk factor included on the screener. Additional studies are warranted to determine how to best support cancer patients and survivors in addressing identified social risks, particularly among populations with the highest burden.

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Impact of County-Level Income and Urbanicity on Cancer Mortality for Asian American and Pacific Islander individuals in the US

Shing JZ, Mitra PR, Freedman ND, Shiels M, Taparra K, Vo JB

Purpose: To compare cancer mortality rates (MRs) by county-level income and urbanicity for Asian American (AA) and Pacific Islander (PI) individuals in the US.

Methods: Using 2018-2020 US National Center for Health Statistics death certificates, we included all cancer deaths among non-Hispanic AA (n=52,987) and PI (n=2,221) individuals aged ≥20 years. We obtained county-level median household income from the 2017-2021 American Community Survey and urbanicity from 2013 Rural-Urban Continuum Codes. Across quintiles of income and urbanicity, we calculated age-standardized cancer MRs per 100,000 person-years and MR ratios (MRRs) comparing PI to AA individuals, stratified by sex and age group.

Results: For both sexes, PI individuals had higher cancer MRs compared with AA individuals for all county-level quintiles of median income and urbanicity across most age groups. Differences in cancer MRs between PI and AA individuals persisted across county-level quintiles of income and urbanicity. Among male individuals in the lowest median income counties, the cancer MR for PI individuals was 42% (95%CI=21%-66%) higher than AA individuals (MR-PI=191.3; MR-AA=134.4), and in the highest income counties, cancer MR for PI individuals was 41% (95%CI=15%-71%) higher than AA individuals (MR-PI=204.4; MR-AA=145.0). For female individuals in the lowest median income counties, cancer MR for PI individuals was 70% (95%CI=48%-95%) higher than AA individuals (MR-PI=195.1; MR-AA=114.8), and in the highest income counties, cancer MR for PI individuals was 91% (95%CI=59%-127%) higher than AA individuals (MR-PI=200.4; MR-AA=105.0). This pattern was consistent by age group. For urbanicity, among female individuals in the most rural counties, the cancer MR for PI individuals was 70% (95%CI=8%-156%) higher than AA individuals (MR-PI=176.0; MR-AA=103.5), and in the most urban counties, cancer MR for PI individuals was 94% (95%CI=78%-111%) higher than AA individuals (MR-PI=215.5; MR-AA=111.0). Elevated risks were also observed for male PI individuals and by age group for both sexes.

Conclusions: PI individuals had greater cancer MRs across county-level attributes compared with AA individuals. Disparities persisted even in more affluent and urban counties.

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Incongruencies in a National Rural Urban Categorization Scheme and Implications for Cancer Health Outcomes and NCI Cancer Centers

Hall JM, Cho HD, Mkuu R, Woodard JN, Guo Y, Salloum RG

Purpose: The Rural Urban Continuum Codes (RUCC) have been used in many studies to understand cancer disparities. The RUCC methodology relies on the commuting flows of a small percentage of the working population, and are not representative of the larger county population. RUCC has been used to evaluate rural cancer disparities nationally but can be problematic when used for smaller regions. NCI-Designated Cancer Centers are required to describe their catchment areas and characterize the rural counties and rural-urban health disparities. These catchment areas often have counties that are incongruent with their categorization. We aim to identify counties within in each cancer center catchment that are incongruent with their RUCC categorization and evaluate the most common type of incongruence.

Methods: The RUCC codes were used to categorize the 3108 counties of the 48 US conterminous states following the NCI recommended method: rural (RUCC 1-3) or non-rural (RUCC 4-10). Counties were then identified as being the upper or lower quintile of 2019 poverty, US Census % population living rural 2010, and 2021 County Health Outcome Ranking.

Results: We identified 399 incongruent counties, belonging to 43 NCI Cancer Center Catchments. One hundred and eighty-one counties categorized as rural incongruent include: 1) remote exclusive wealthy vacation destinations, 2) healthy small town rural, and 3) low population wealthy resource extraction. While 218 counties categorized as urban incongruent include: 1) %100 rural counties misclassified, 2) %100 rural healthy counties misclassified, 3) mostly rural populations with health burdens, 4) remote exclusive wealthy vacation destinations, 5) urban core deprivation. Parametric and non-parametric tests reveal statistically different health burdens (obesity, cancer mortality, life expectancy, unemployment, uninsured) between incongruent groups and congruent counties within rural and urban categories.

Conclusions: National county categorization systems may require expert modification when used to describe smaller regions, like cancer center catchment areas. Researchers should exercise caution when using these systems, and take care to describe the burdens in their regions as they are experienced by residents.

149-T

Integration of Cultural Wisdom and Knowledge into Obesity and Cancer Prevention Interventions for Diverse Latina Women

Guzman J, Rosas CE, Rodas I, Gonzales Ortiz M, Sanchez-Johnsen L

Introduction: Innovative obesity and cancer risk reduction interventions are needed to address cancer health disparities. Among Latina women, rates of obesity are 42.6%, with cancer rates differing across background and types of cancers. To address the high rates of obesity, culture-based interventions are needed. Dichos, or Spanish sayings/proverbs, embody indigenous wisdom deeply rooted in Latino/a culture. Dichos, which often elicit cognitive and affective responses, may be used to increase recruitment, strengthen health messages, and improve the effectiveness of culturally tailored obesity and cancer prevention interventions.

Purpose: We examined the prevalence and content of dichos among Mexican (MX) and Puerto Rican (PR) women and their preferences for integrating dichos into a diet, physical activity, and body image intervention.

Methods: A total of 199 women (MX [n = 104]; PR [n = 95]; Age M = 41.3; SD = 12.7) completed staff-administered questionnaires. Participants were asked whether they heard dichos in the past or currently and about their content. In addition, participants were asked if they would be interested in participating in healthy eating, physical activity, and body image intervention that included dichos.

Results: Overall, 86.4% of participants reported hearing dichos (80.0% PR vs 92.3% MX, $\chi2(1) = 6.41$, p = .011). Within those that had heard of dichos, 57.6% reported hearing dichos related to food or eating (53.9% PR vs 60.4% MX, $\chi2(1) = 0.72$, p = .394); 40.1% heard dichos related to exercise, physical activity or dancing (42.1% PR vs 38.5% MX, $\chi2(1) = 0.224$, p = .636); 46.5% heard dichos related to their body (46.1% PR vs 46.9% MX, $\chi2(1) = 0.01$, p = .914); and 50.6% heard dichos related to health (18.6% PR vs 32.0% MX, $\chi2(1) = 3.91$, p = .048). Exposure to dichos varied slightly by age but non-significantly (Ps > .05). More younger women (18-34 years; 91.0%) heard of dichos than middle-aged (35-49 years; 84.3%) and older women (≥50 years; 83.9%). Finally, 72.9% of participants were moderately to extremely interested in an intervention that included dichos.

Conclusions: Dichos are prevalent among Latinas, particularly among MX and young women. Findings have implications for culture-based obesity and cancer prevention interventions.

150-T

Investigating Multilevel Factors Influencing Cancer Screening Among Refugee Populations in the United States: A Systematic Review.

Shah S, Knight Wilt JY, Thomson MD

Introduction: 25,519 refugees resettled in the United States in 2022. Despite lower screening rates for foreign-born compared to US-born citizens, refugee experiences and access are not documented. Inconsistent data collection on refugee status renders it challenging to assess their distinct cancer burden. Numerous studies conflate immigrants and refugees, ignoring the unique pre- and post-migration experiences and resource availability for refugees compared to those who immigrate through alternative channels. This systematic review aims to address these gaps by synthesizing individual, interpersonal, institutional, and community-level social-ecological model (SEM) factors affecting refugee cancer screening participation in the US.

Methods: Systematic MESH searches of PubMed, CINAHL, PsycINFO, and Sociological Abstracts were conducted. Inclusion criteria were English-speaking, US-based, outcome of cancer screening, and two or more levels of influence (i.e., individual, interpersonal, institutional, community) with no date restrictions. Exclusion criteria were: non-peer-reviewed, did not use primary data, and did not differentiate refugees and immigrants. The Critical Appraisal Skills Program (CASP) and NHILB quality assessment instruments were utilized for quality evaluation.

Results: Of the 146 articles identified n=15 met inclusion criteria. Study designs included qualitative (n=7), quantitative (n=6), and mixed methods (n=2). All studies recruited only female participants from Central and Southeast Asia and Africa. Screenings addressed were cervical (n=10), breast (n=4), and colorectal (n=3). The levels of influence defined by SEM addressed individual, interpersonal, and institutional impact. Unique themes identified: mental health issues, cultural/religious insensitivity, and structural barriers (wait periods, transportation, and government relocation support). Institutional problems cited were lack of interpreters and poor community outreach.

Conclusions: Our findings suggest that refugees in the United States underutilize cancer screening services. Healthcare practitioners and policymakers need to understand the numerous cultural and socioeconomic factors that impact health-related attitudes and care-seeking decisions among refugee populations.

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Lung Cancer Risk Reduction and Screening among Appalachian Women: A Community-Engaged Mixed Method Study

Thompson JR, Schoenberg NE, Hull PC

Purpose: Risk, diagnosis, and prognosis of lung cancer varies by gender identity and declines in incidence continue to lag among women compared to men in the US, including alarming increases among women in Appalachian Kentucky (KY). We utilized concept mapping, a community-engaged mixed method, to: 1) uncover the range of perceived barriers and facilitators to lung cancer risk reduction and screening and 2) identify community-specific interventions for Appalachian KY women.

Methods: We recruited 71 Appalachian KY women to participate in concept mapping, including a series of online brainstorming, sorting, and rating activities along with qualitative group discussions. We used multidimensional scaling to create a point map representing perceived similarities and hierarchical cluster analysis to create a cluster map illustrating thematic categories. We also generated comparisons of average cluster ratings through bivariate comparisons across importance and feasibility. In the qualitative discussions, we shared the generated maps and comparisons with participants to obtain insights on potential lung cancer risk reduction and screening interventions.

Results: Participants listed 70 perceived barriers and facilitators across individual, interpersonal, community, and environmental levels, which grouped into 8 thematic areas, including: 1) Community Programs & Resources; 2) Availability & Access to Healthcare; 3) Barriers to Seeking Healthcare; 4) Health Conditions & Genetics; 5) Community Influences & Social Norms; 6) Smoking & Tobacco Use; 7) Physical Environment; and 8) Environmental Concerns & Pollutions. Participants indicated potential intervention areas include: community-level education tailored toward youth and women; healthcare access, particularly related to lung cancer screening; local cultural and behavioral norms around tobacco use and healthcare seeking behaviors; and county or community-level smoke-free policies.

Conclusions: Overall, this research contributes novel understanding of local barriers, gender-specific risk factors, and community-driven intervention ideas among Appalachian KY women and provides a platform for future studies on lung cancer risk reduction and screening throughout the Appalachian region.

152-T

Motherhood and Receipt of Treatment: A Population-Based Study of Young Women with Breast Cancer

Booker QS, Murphy CC, Messiah SE, Atem FD, Balasubramanian BA

Purpose: Breast cancer is the most common cancer in reproductive-aged women with increasing incidence of aggressive and distant-stage cases; yet little is known about the influence of motherhood on treatment patterns.

Methods: Young women (ages 18-39 years) diagnosed with breast cancer between 2013 and 2016 were identified using the Texas Cancer Registry. Motherhood status was determined by linking these women to live-birth certificates from 1995 to 2016. Women who had given birth at least once before their breast cancer diagnosis date were categorized as mothers; otherwise, they were categorized as women without children. Logistic regression examined the association between motherhood status and receipt of treatment, and whether this association was modified by stage at diagnosis, race, and ethnicity by calculating adjusted odds ratios (aOR) and 95% confidence intervals (CIs).

Results: We identified 1,368 mothers (median age, 35.0; IQR: 21.0, 39.0) and 785 women without children (median age, 35.0; IQR: 20.0, 39.0). Significant differences in social determinants of health were observed among mothers, including a higher prevalence of Medicaid use, rural residency, and lower socioeconomic status. Mothers also showed a higher prevalence of distant-stage diagnoses, partial mastectomy, and lower receipt of radiation therapy. Motherhood was not associated with receipt of chemotherapy (aOR, 0.94; 95% CI: 0.762, 1.160) or first course of treatment (aOR, 1.19; 95% CI: 0.934, 1.514). Race and ethnicity modified the relationship between motherhood status and receipt of chemotherapy, both on the additive scale among non-Hispanic Black [NHB] women (aOR, 0.57; 95% CI: 0.369, 0.888) and non-Hispanic White [NHW] mothers (aOR, 0.71; 95% CI: 0.530, 0.951), as well as on the multiplicative scale among NHB (aOR, 1.56; 95% CI: 0.932, 2.616) and NHW (aOR, 0.69; 95% CI: 0.513, 0.928) mothers.

Conclusion: Our study revealed potential competing demands, health inequities, and racial disparities in this population. These findings highlight the need for culturally appropriate family-centered support services and will inform targeted prevention interventions for mothers with breast cancer.

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Persistent Poverty and Access to Cancer-Related Healthcare: Novel Census Tract-Level Evidence

Moss JL, Geyer NR, Lengerich EJ

Purpose: To examine the relationships among census tract-level persistent poverty (i.e., areas that have had ≥20% of the population living below the federal poverty line for at least 30 years), geographic/sociodemographic context, and cancer-related potential and realized healthcare access indicators.

Methods: We gathered publicly-available data on persistent poverty, rurality, and sociodemographic variables (i.e., racial/ethnic composition, age composition, and socioeconomic status) across 3,217 census tracts in Pennsylvania. We also gathered indicators of potential access to healthcare (i.e., prevalence of health insurance, last-year check-up) and realized access to healthcare (i.e., prevalence of screening for cervical, breast, and colorectal cancers). The primary analysis included multivariable linear regression models assessing the relationships between persistent poverty, rurality, and sociodemographic variables with each healthcare access indicator.

Results: Overall, 316 (9.8%) census tracts were classified as experiencing persistent poverty. In multivariable analysis, persistent poverty tracts had lower prevalence of health insurance (estimate=-2.94, 95% confidence interval [CI]: -3.21, -2.66) and screening for cervical cancer (estimate=-4.51, 95% CI: -4.89, -4.14) and colorectal cancer (estimate=-3.53, 95% CI: -3.95, -3.11), compared to non-persistent poverty tracts (all p<.05). However, persistent poverty tracts had higher prevalence of last-year check-up (estimate=0.31, 95% CI: 0.16, 0.47) and screening for breast cancer (estimate=0.74, 95% CI: 0.50, 0.99), compared to non-persistent poverty tracts.

Conclusions: Relationships between persistent poverty and cancer-related healthcare access outcomes differed in direction and magnitude. Future studies should extend and confirm these analyses in the context of other states and outcomes to inform research on geographic cancer disparities.

154-T

Population-Based Precision Lung Cancer Prevention for Health Equity Promotion: Identifying Population Segments with Lung Cancer Disparities to Increase Screening Recruitment

Lee MS, Levitt AP, Jani C, Lopes G, Balise RR, Kobetz EN

Purpose: This study extends the conventional scope of precision cancer prevention from molecular-based to population-based approaches that use population-level data to identify neighborhood locations and population segments with lung cancer disparities (i.e., high incidences and low socioeconomic resources) for increased lung cancer screening with low dose computer tomography (LDCT) at the facilities of an NCI-designated comprehensive cancer center.

Methods: The study is conducted for the catchment area of Sylvester Comprehensive Cancer Center in South Florida, including three urbanized counties in Miami-Dade, Broward, and Palm Beach, and one rural county in Monroe. To identify population segments with high risk for lung cancer, we used geospatial hot spot analysis to identify statistically significant clusters of census tracts with high age-adjusted incidences (i.e., calculated with 2011-2020 Florida cancer registry data) for lung cancer. We analyzed the income level, health insurance access, and smoking rates within these hot spots to identify target census tracts for increased lung cancer screening recruitment via community outreach and engagement (COE) approaches.

Results: The results show that lung cancer hot spots by age-adjusted incidence in the study area are mostly located in areas with low-income, low insurance access, and high smoking rates. There are more lung cancer hot spot clusters and active smokers in Broward and Palm Beach than in Miami-Dade. Most census tracts in the rural county of Monroe have high lung cancer incidence and medium-to-low income; however, there is no hospital for LDCT services in Monroe. Information from these analyses helped the Sylvester COE team identify communities in Monroe as well as Broward and Palm Beach Counties to increase efforts for recruiting patients for lung cancer screening.

Conclusions: The study demonstrates the utilities of population-based approaches for promoting equity in cancer prevention with existing screening modalities. Because both genetic disposition and the environment contribute to cancer risk, we argue that including social determinants of health and behavioral risk factors in precision prevention intervention is necessary for achieving cancer health equity.

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Project SCREEN (Strengthening Community Reach and Equity through Engaging Neighborhoods): Development of a Neighborhood Health Ambassador Network to Address Cancer Health Disparities in the National Capital Region

Pratt-Chapman ML, Scarlett S, Beale J, Safron H, Muwwakkil B

Purpose: There was a steep decline in cancer screening during the COVID-19 pandemic to restrict the spread of the virus. To promote a return to breast cancer screening following the pandemic while expanding access to digital healthcare in the Washington, DC region, the GW Cancer Center aimed to develop a Neighborhood Health Ambassador (NHA) network comprised of representatives from four priority populations (African immigrant, African American, Latina, and queer communities) in our catchment area.

Methods: NHAs were told they would need to complete a 100-hour Community Health Worker Curriculum and a 44-hour practicum overseen by training center Access to Wholistic and Productive Living. NHAs were informed that they would be paid a stipend ($1500) for completing the 100 hours of training and thereafter be paid hourly ($23-25/hour) for ongoing community outreach activities, including practicum hours.

Results: GW Cancer Center received 75 applications and 38 NHAs were provisionally accepted. 26 NHAs enrolled in training after understanding the time commitment, and 25 students completed the training. Multidisciplinary subject matter experts instructed classes on public health, infectious and chronic disease management, best practices in behavior modification, and health advocacy. The training program equipped the NHAs with the skills to increase cancer awareness, prevention, and early detection in their communities by acting as stewards for accessing cancer screenings and helping their neighbors to navigate the digital healthcare landscape. NHAs are currently completing practicum and outreach hours. Since July 2023, NHAs have logged 50+ hours across 6 events, reaching 183 community members. NHAs have been operationally sustained as a network for future outreach and engagement.

Conclusion: Project SCREEN pilots a novel community-based network to advance catchment goals for outreach and engagement. Equipping community members from priority populations as NHAs holds promise for building long-term community capacity in cancer prevention and screening knowledge. Investing in existing community talent, amplifying the voices of cancer survivors, and empowering new community champions may be one strategy to bend the curve toward health equity.

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Promoting HPV Vaccination Among Rural Families: Parents' Receptivity to HPV Messaging

Fisher CL, Mullis MD, McFarlane M, Hansen M, Bylund CL, Wiggins L, Corbitt H, Vilaro M, & Staras SAS

Purpose: Human papillomavirus (HPV) vaccination rates in Florida are well below the national average with even lower rates in rural counties. To inform a multilevel intervention to promote vaccine uptake among adolescents living in rural counties, we explored parents' receptivity to HPV vaccination messaging and mobile delivery of vaccination.

Methods: Parents of 9- to 12-year-olds (n=28) who had not received the vaccine gave feedback in focus groups (n=5) or interviews (n=2) on message content, channels (text message, postcard, phone call), and a mobile clinic (MC) for vaccine delivery. We thematically analyzed transcripts to identify parents' receptivity to/preferences for content, channels, and the MC.

Results: Parents were from 5 rural counties, 54% had college education or more, and identified as White (46%), Black (36%), or Hispanic (18%). Parents' preferred message features included: 1) visibility of a credible source (trusted clinician/clinic); 2) logistical information (scheduling, dosage timing) with access to more information (link/QR code); and 3) personalization. Parents were most receptive to a text message appointment reminder that included their child's name and had relevant information that enhanced feasibility. Parents were receptive to a postcard, but characterized it as easily ignored without a credible and evident source. Parents perceived a phone call from their pediatrician's office to schedule a vaccination appointment as personalized but pushy, preferring information and a call-back option. Parents perceived vaccination at an MC as convenient yet unfamiliar. They advised that MC messaging provide detailed logistical information, the MC be at a location they trust, vaccination be offered during weekend/evening hours, and staffed with clinicians employed by trusted entities.

Conclusions: Rural parents prefer HPV vaccination messaging that promote feasibility of vaccination for their adolescents, provide educational materials to inform decision making, and are from trusted sources. MCs may be acceptable means of increasing rural families' access to HPV vaccination when promotional messages highlight the credibility of the source and staff in the clinic, offer it at trustworthy locations, and outside of business hours.

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Race Differences in Symptom Burden among Women with Breast Cancer on Adjuvant Endocrine Therapy: A Post Hoc Analysis of a Randomized Control Trial

Hu X, Krukowski RA, Stepanski ES, Schwartzberg LS, Vidal GA, Graetz I

Purpose: We examined racial differences in symptom burden changes among women with early-stage breast cancer after starting adjuvant endocrine therapy (AET).

Methods: We conducted a post hoc analysis by race of women with breast cancer starting AET who were randomized in THRIVE Study (NCT03592771) to investigate usual care control arm vs. mobile health symptom monitoring intervention arm from 11/2018 to 06/2021. Participants completed surveys at baseline, 6- and 12-month. Outcomes were composite score (range=0-76) and individual symptom scores (range=0-4) from the FACT-Endocrine Subscale. We estimated symptom differences by race using linear regression with and without adjusting for baseline characteristics (study arm, age, education, health literacy, income, marital status, rurality, prior chemotherapy and radiation, AET medication, baseline symptoms, and stage at diagnosis).

Results: Among 102 (34%) Black and 194 (66%) White women who were randomized, retention was 88% at 12-month. Compared to White participants, Black participants were younger (55 vs. 60 years, p<.01), more likely to live in poverty (10.8% vs. 4.1%, p<.01), and had lower health literacy (18.9% vs. 13.4%, p<.01). Symptom burden did not differ by study arm. Comparison by race showed worse composite scores among Black than White participants at baseline (60.8 vs. 64.5, p=.002). This gap became smaller at 6-month (59.7 vs. 61.2, p=.30), but diverged again at 12-month (61.8 vs. 56.9, p<0.01). Differences at 12-month diminished after controlling for baseline characteristics (-1.6, 95%CI=-4.4 to 1.2). Notably, living in poverty and younger age were associated with higher composite scores. Among individual symptoms at 12-month, Black women reported higher severity in hot flashes (3.2 vs. 2.4), cold sweats (2.0 vs. 1.4), night sweats (2.7 vs. 2.1), and vaginal discharge (1.7 vs. 1.3) than White women (p<.01). Moreover, Black women experienced 0.6 (95%CI=0.3 to 0.9) larger increases in cold sweats at 12-month, even controlling for baseline characteristics.

Conclusion: Our results add to increasing evidence that Black women experience significantly greater symptoms during AET than White women. They highlight the need for more equitable symptom monitoring and management approaches between Black and White

158-T

Racial and Ethnic Differences in Lung Cancer Incidence Among Those Who Quit Smoking: the Multiethnic Cohort Study

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Purpose: Prior studies observed racial and ethnic differences in smoking-related lung cancer risk even after controlling for known risk factors. Currently in the US, more than half the newly diagnosed lung cancer cases are among those who no longer smoke. Here we evaluated whether racial and ethnic differences in lung cancer risk persist after smoking cessation.

Methods: Among 70,817 African American, Native Hawaiian, Latino, Japanese American, and White Multiethnic Cohort participants who no longer smoked at cohort entry, after an average of 19.7 years of follow-up, 2,617 participants developed incident lung cancer. We assessed the racial and ethnic differences in lung cancer risk using the excess relative risk (ERR) model. Models were adjusted for age, pack-years, years-quit, and education.

Results: Our findings are consistent with previous results that indicated race and ethnic differences which were especially notable at lower dose of cigarettes per day (CPD). The estimated ERR for lung cancer accumulation of 20 pack-years at 20 CPD before quitting at age 40 ranged from 11 for Latinos to 21 for African Americans (Phet <0.001). Using the ERR model, we found that the ERR due to smoking decreased on average by 3.6 percent per year of smoking cessation. The effect of quitting smoking on lung cancer risk differed by racial and ethnic group (Phet =0.02), ranging from 1.8 percent decline in the ERR per year in Native Hawaiians to 4.7 percent decline in the ERR per year in African Americans. We computed the number of years quitting that would be required to reduce the ERR to a doubling of risk compared to those that never smoked. This ranged from 33 years for Latinos to 92 years for Native Hawaiians.

Conclusion: The excess relative lung cancer risk differs across racial and ethnic groups after smoking cessation. Currently, the US Prevention Services Task Force lung cancer screening criteria recommends screening by low-dose CT scan for those who quit within 15 years. Our findings suggest that this recommendation would not equitably address differences in lung cancer risk across different racial and ethnic groups, especially among those who remain at higher risk even after 15 years of cessation.

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Racial and Ethnic Differences in the Adoption of Opportunistic Salpingectomy for Ovarian Cancer Prevention in NYC

Kim J, Gemson E, Mount L, Kensler K, Genkinger J, Bea V, Howard D, Tamimi R

Purpose: This study aimed to evaluate racial and ethnic differences in the adoption of opportunistic salpingectomy (OS) for ovarian cancer prevention among a diverse population in New York City (NYC), particularly after the American College of Obstetricians and Gynecologists (ACOG) recommended OS in 2014.

Methods: A sample of 19,595 women aged 18+ undergoing hysterectomy with ovarian conservation or surgical sterilization from 2011 to 2021 was identified using the INSIGHT-Clinical Research Network (CRN). The association between race and ethnicity and OS was examined using multivariable-adjusted mixed-effects log-binomial regression models accounting for age, visit type (inpatient/outpatient), and health system.

Results: From 2011 to 2021, 3,514 women underwent hysterectomy+OS (non-Hispanic White (NHW), 37%; non-Hispanic Black (NHB), 46%; Asian, 11%, Hispanic, 3.4%; non-Hispanic other race, 1.9%) and 8,452 women underwent OS for sterilization (NHW, 56%; NHB, 23% Hispanic, 5.1%; other race, 0.9%). Both the proportion of hysterectomy with OS procedures (13.0% to 52.9%) and sterilization procedures with OS (56.9% to 76.4%) increased between the 2011-2013 and 2014-2019 periods, reflecting the positive impact of the ACOG guidelines. Prior to the 2014 guidelines, Asian (multivariate OR[ORMV]= 1.05, 95 % CI 0.64-1.74), NHB (ORMV= 1.20, 95 % CI 0.88-1.63), and other race women (ORMV=1.49, 95% CI, 0.57-3.90)had similar odds of having hysterectomy only relative to hysterectomy+OS, compared to NHW women. However, post-2014, Asian (ORMV= 1.33, 95 % CI 1.09-1.61), NHB (ORMV= 1.32, 95 % CI 1.15-1.51), and other race women (ORMV= 2.29, 95% CI, 1.37-3.81) were more likely to have only hysterectomy than hysterectomy+OS, compared to NHW women.

Conclusion: While OS adoption has increased since 2011, our findings suggest that its adoption has not been equitable across racial and ethnic groups. In NYC, more NHW women underwent hysterectomy+OS than hysterectomy only, compared to NHB, Asian, and other race women. These differences emerged after national guidelines recommending OS were released, demonstrating the need for more research to make ovarian cancer prevention more equitable.

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Racial/Ethnic Differences in Unmet Social Needs, Trust & Discrimination

Ortiz KS, Camacho-Rivera M, Bailey Z

Purpose: The objective of this study is to examine racial/ethnic differences in unmet social needs and the role of trust and discrimination in shaping racial/ethnic heterogeneity.

Methods: Data used are from the 2021 nationally representative Health Information National Trends Survey Cycle 6. Primary outcomes include experiencing food insecurity (difficulties paying for food and skipped meals) and housing insecurity (forced moves) in the past 12 months. Primary predictors include level of trust in healthcare providers, level of trust in healthcare systems, and experiences of racial/ethnic based discrimination in healthcare settings. Covariates include age, sex assigned at birth, race/ethnicity, income, insurance status, education, primary language spoken, and personal cancer history. For each primary outcome, we ran a series of ordered logistic regression models with jackknife replication weights to account for the complex survey design.

Results: In multivariable models of food insecurity, Asian American adult respondents reporting racial/ethnic discrimination were 11% less likely to report food insecurity (aOR 0.089, 95% CI 0.012 - 0.649). Additionally, we observed Asian Americans reporting racial/ethnic discrimination exhibited a decreased odds of sharing transportation issues with their primary healthcare provider (aOR 0.23, 95% CI 0.068- 0.777), compared to their non-Hispanic white adult peers. Asian Americans who experienced racial/ethnic discrimination in healthcare systems were 15% less likely to report housing issues with their healthcare provider (aOR 0.085, 95% CI 0.011- 0.638) compared to their non-Hispanic white adult peers.

Conclusions: Decreasing cancer-related health inequities requires improvement in prevention efforts that consider the role of social needs in shaping effective communication with healthcare providers.

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Rural Racial Disparities and Barriers in Mammography Utilization among Medicare Beneficiaries: A Longitudinal Study

Liu Z, Shan Y, Kuo YF, Giordano SH

Purpose: To examine the interaction of race/ethnicity and rural-urban factors in long-term mammography screening disparities among Medicare beneficiaries.

Methods: We conducted a retrospective longitudinal study using Medicare claims data from 2010-2019 to examine mammography utilization among female Medicare beneficiaries aged 65-74 who enrolled in Medicare between 2010 and 2013. Mammography utilization was assessed biennially from enrollment until the endpoint, considering outcomes like death, breast cancer diagnosis, urban-rural residential changes, or study conclusion (December 31, 2019). Regular users adhered to biennial screening guidelines. We performed descriptive, stratification, and multinomial logistic regression analyses using SAS/STAT.

Results: Of the 114,939 eligible women, 21.2% of Hispanics, 33.3% of non-Hispanic Blacks (NHB), and 38.4% non-Hispanic Whites (NHW) in rural areas were regular users of mammography at the endpoint follow-up, compared to 33.5%, 44.9%, and 45.3% of their counterparts in urban areas, respectively. Stratification analyses showed rural Hispanics and NHB were 33% (95% CI, 25% - 40%) and 22% (95% CI, 6% - 36%) less likely to be regular users of mammography compared to their urban counterparts. Medicare beneficiaries who had established primary care providers (PCP) care were 3.31 (95% CI, 3.2-3.42) times more likely to undergo regular screening mammography compared to those without a PCP. Beneficiaries who were hospitalized more than twice a year or had a Charlson's Comorbidity Index (CCI) score ≥3 were 45% (95% CI, 38%-51%) and 50% (95% CI, 46%-54%) less likely to use screening mammography regularly compared to those who were not hospitalized or had a CCI score of zero, respectively.

Conclusion: Our study revealed significant racial/ethnic disparities in routine mammography screening among rural Hispanic and NHB women. Major barriers to routine mammography screening included the lack of a primary care provider, frequent hospitalization, and comorbidity. The findings of this study highlight the importance of addressing rural racial disparities in mammography utilization to ensure equitable screening practices for all populations.

162-T

Sociodemographic Factors Associated with Fertility Experiences among Diverse Adolescent and Young Adult Cancer Survivors: A Population-Based Study

Stal J, Miller KA, Freyer DR, Quinn M, Kim SE, Ceasar RC, Milam JE

Purpose: To examine, on a population-basis, sociodemographic factors associated with fertility experiences among diverse adolescent and young adult (AYA) cancer survivors.

Methods: Project Milestones is an ongoing, cancer registry-derived, cohort study recruiting AYAs (with cancers prototypical for this population, diagnosed 21-39 years from 2009-2015 in Los Angeles [LA] County, 3-10 years post-diagnosis, off treatment at survey) through the LA Cancer Surveillance Program, part of NCI SEER, to complete a self-report survey.

Results: Early responders were 1,442 AYAs (female [69.8%], Hispanic [43.1%], White [62.6%], diagnosed with leukemia/lymphoma [27.5%] or reproductive cancers [26.5%], on average 31.0 [SD=5.2] years at diagnosis and 39.5 [SD=5.8] years at survey). Discussion: In total, 50.3% reported discussing fertility with their provider. Hispanics (53.4% vs. 48.0%; p=.04) and females (52.3% vs. 45.8%; p=.03) were more likely to report a discussion. Preservation: Overall, 12.3% reported preserving fertility. Hispanics (7.8% vs 15.7%) and females (7.5% vs. 23.3%) were less likely to preserve (both p<.01). Reasons included: not needing/wanting to (54.7%); not knowing it was an option (13.5%); unable to afford it (13.1%); treatment would not allow it (5.4%); or another reason (13.4%). Family planning: Most reported no change to family planning due to cancer (55.6%). Hispanics were less likely to report no change (52.1% vs. 58.2%; p=.02) and more likely to report highly positive change (17.5% vs. 10.2%; p<.01). Females were more likely to report highly negative change (17.2% vs. 7.5%; p<.01) and less likely to report somewhat positive change (6.2% vs. 11.7%; p<.01). Reproductive concerns after cancer (RCAC): An average score of 13.7 (SD=4.2; higher scores represent greater concern [5-25]) was reported. Hispanics were more likely to report caution having children (25.2% vs. 17.6%; p<.01) and females were more likely to report worry telling their partner that they may be unable to have children (18.7% vs. 13.2%; p=.01).

Conclusion: This population-based research captures the fertility experiences of underrepresented AYAs and identifies modifiable areas for intervention in which this at-risk population is receiving suboptimal fertility-related care.

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Sociodemographic Inequities in Overall Survival among Younger and Older Women with Cervical Cancer

Holt HK, Calip GS, Peterson CE, MacLaughlan-David S, Guadamuz JS

Purpose: To investigate the associations between race, ethnicity, area-level socioeconomic status (SES), rurality, and persistent poverty with overall survival in women with cervical cancer in the US.

Methods: A retrospective, cross-sectional population-based study using data from the Surveillance, Epidemiology, and End Results program (SEER) on women aged ≥21 years who received a cervical cancer diagnosis between 2006 to 2018 with follow up through 2020. Stratified Cox proportional hazards models adjusted for clinical factors (age, diagnosis year, and histology) were used to examine sociodemographic differences in overall survival among younger (21-64 years) and older women (≥65 years).

Results: This study included 39,000 women, of whom, 82.8% were <65 years and 17.2% were ≥65 years. Compared to younger women, older women were more likely to be non-Latinx Black (16.0% vs 12.9%) and to be diagnosed with late-stage cancer (regional or distant SEER summary stage) (67.9% vs 47.5%). Younger and older women had similar proportions living in rural areas (85.5% vs 85.9%) and areas of persistent poverty (83.8% vs 82.8%). Adjusted models suggest that sociodemographic survival inequities among younger women were smaller or not present among older women. For example, while younger Black women had a higher risk of death than their White counterparts (HR 1.45 [95%CI: 1.37-1.54]), this association was not found among older Black women (HR 1.06 [95% CI: 0.96-1.16]). Similarly, younger women in the lowest SES areas had a higher risk of death compared to women in the highest SES areas (HR 1.82 [95%CI: 1.69-1.96]). This association was attenuated in older women living in the lowest SES area (HR 1.27 [95%CI: 1.15-1.42]). Finally, although younger women living in areas of persistent poverty had a higher risk of death compared to those who did not (HR 1.40 [95%CI: 1.32-1.48]), this association was not found in older women (HR 1.10 [95%CI: 0.99-1.21]).

Conclusion: Although Black race, lower SES, and living in areas of persistent poverty were associated with an increased risk of death among younger women diagnosed with cervical cancer, this was not the case with older women. Receipt of benefits such as Social Security and Medicare after the age of 65 may mitigate these effects.

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The Association between Local Flavor Restrictions and Tobacco and E-cigarette Use among California Adolescents Ages 12-17

Usidame B

Significance: This study investigates the association between local flavor restrictions and socioeconomic differences in youth cigarette and e-cigarette use in California.

Methods: Data from the California Health Interview Survey (CHIS) and the American Lung Association (ALA) for 2016 to 2021 were pooled. For 540 localities, ALA city/unincorporated county grades were designated as having at least one flavor restriction (1) or none (0). The CHIS data specified exclusive ever use (any lifetime use) of cigarettes, e-cigarettes, and dual use. Multilevel multinomial logistic regression models tested the relationship between the presence of a flavor ban and three outcomes among adolescents ages 12-17, nested by localities. In a separate model, we examined the potential for effect modification of the relationship by family income relative to the federal poverty level (FPL). All models controlled for strength of local smoke-free and tobacco retail licensing laws, as designated by ALA.

Results: 82 localities had at least one flavor restriction and among sample participants across all years (n=3,250), 1.6%, 10.4%, and 3.2% had ever used cigarettes, e-cigarettes, or dual use, respectively. In the unadjusted models, adolescents in cities with flavor restrictions reported lower odds of ever cigarette use (OR= 0.20, 95% CI: 0.05-0.79) compared to adolescents in cities with the weak grade, but the association was not statistically significant when controlled for other variables. However, we found a statistically significant association between flavor restrictions and poverty level, with cigarette use in the interaction model. Compared to cities without flavor restrictions, participants with lower family income (0-299% FPL) living in cities with flavor restrictions had lower odds of ever using cigarettes, relative to those at higher incomes (300% FPL and above). There was no association between flavor restrictions and e-cigarette or dual use overall or by poverty level.

Conclusion: Local flavor restrictions might be associated with reduced cigarette use among individuals in lower-income households compared to higher-income households, but these results need to be confirmed in larger studies and with longitudinal data.

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The Hidden Costs of Colonoscopy: Rural Barriers to Preventative Care in Southern Illinois

Ginjupalli R, Humble S, Maki J, Beache S, MD, McCray N, Koric A (presenter), James A

Background: Colorectal cancer (CRC) is the second leading cause of cancer death in the US. Better understanding of cost-related barriers to CRC screening is needed in rural populations as in Southern Illinois, a predominantly rural setting with increasing CRC mortality.

Objective: To describe colonoscopy-related incurred costs in rural populations.

Methods: A cross-sectional study of 1,185 participants identified in the Southern Illinois health system and invited to participate. Between March of 2019 and January of 2020, the participants completed a questionnaire that included demographic information and six broad colonoscopy related cost measures. Rurality of residence was classified based on the Rural-Urban Commuting Area (RUCA) codes from the 2010 decennial census. Eligible participants were at least 50 years of age, who had received a colonoscopy at least 24 months prior March of 2019. Descriptive analysis and non-parametric Wilcoxon rank sum or Kruskal-Wallis tests (where appropriate) were used to compare colonoscopy-related cost by sociodemographic self-reported characteristics at $\alpha < 0.05$.

Results: 303 out of 361 consented participants were included in the final analysis. The majority of participants were Non-Hispanic White (90.8%), rural residents (70.9%), 50 to 65 years of age (60.4%), female (56.4%), and earning >$2.5K (56.7%) in monthly household income. Of the total, 257 (84.8%) reported at least one incurred colonoscopy-related cost with 68.1% of rural and 31.9% urban residents. The highest to lowest median dollar was observed for: elderly/childcare (median = 350, range unavailable), colonoscopy procedures (125, $2.5 to $6000.0), in office pre-procedure visit (30, $1.0 to $255.0), and medications (20, $1.50 to $500.0). The median cost by sociodemographic characteristics differed statistically between the age groups ($p = 0.005$), education attainment levels ($p = 0.025$), monthly household income ($p < 0.001$), and insurance status ($p = < 0.001$).

Conclusion: Colonoscopy-related self-reported hidden costs ranged from zero to thousands of dollars in this cohort of rural residents. Better understanding the burden of cost associated with CRC is necessary to reduce barriers to and increase uptake of CRC screening with colonoscopy in underserved population.

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Towards the Elimination of Cancer Health Disparities in Mexico: Leveraging Implementation Science to Optimize Strategies for Cancer Control

Fernandez M, Unger K, Lajous M, Balasubramanian B, Potter M, Millett T, Torres-Ibarra L, Rodriguez C, Hashmi A

Purpose: Coordinated efforts to bridge cancer control research and practice in Latin America are desperately needed to advance global cancer control equity. Although implementation science applied to this issue is growing in low- and middle- income countries (LMICs), major gaps remain. The purpose of the effort described below was to establish the Leveraging Implementation Science to Optimize Strategies (LISTOS) for Cancer Control Center to advance equitable uptake, use, and sustainment of effective cancer control interventions in Mexico and Latin America by strengthening implementation research and capacity.

Methods: A transdisciplinary team of investigators in Mexico and the U.S. engaged researchers, and community and stakeholder partners to identify priorities for advancing cancer control through implementation science in Latin America. Supported by the National Cancer Institute's Global Implementation Science for Equitable Cancer Control initiative, LISTOS was established. The goal is to bridge critical gaps in cancer control by enhancing implementation research capacity and conducting impactful research to promote equitable uptake, utilization, and sustainability of effective cancer control interventions. Rooted in the concept of readiness ("listos" in Spanish), the center focuses on preparing organizations and research teams to optimize the implementation of evidence-based cancer control interventions.

Results: LISTOS encompasses two subthemes: 1) adapting EBIs and implementation strategies to align with diverse populations and settings, and, 2) developing strategies to enhance and expedite the adoption, integration, scale-up, and sustainability of EBIs. The team planned two initial studies to tackle implementation challenges related to adaptation and implementation of colorectal cancer screening in primary care and implementation of integrated care for timely diagnosis of breast cancer. Breast cancer and colorectal cancer are among the most burdensome cancers in Mexico, and preventive and early detection interventions that can greatly improve their control.

Conclusion: LISTOS endeavors to drive significant advancements in cancer control implementation science that lead to improved cancer outcomes and reduced disparities in the region.

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Utilizing Peer Educators to Increase Black Males' Intentions to Seek Genetic Testing for Prostate Cancer: Results of a Randomized Controlled Trial

Giri VN, Blanding Godbolt J, Crumpler N, Gross L, Hartman R, Keith S, Leader AE

Background: Black males have some of the highest rates of prostate cancer (PCa) incidence and mortality in the U.S. Genetic testing is revolutionizing our understanding of PCa risk, diagnosis, and treatment options. The low participation of Black males in genetic testing for PCa, for a myriad of reasons including lack of awareness and lack of trust, precludes them from benefitting from advances in precision medicine and threatens to widen, not reduce, PCa disparities.

Methods: Black males, ages 35 to 69, with or without a family or personal history of PCA were recruited using community-based approaches. Men were randomized to either: participate in a group-based discussion led by a peer educator who explained PCA and the risks and benefits of genetic testing (intervention arm) or standard informational materials in the mail with no interaction with a peer educator (control arm). All men completed a baseline and endpoint survey, were connected to PCA genetic testing if interested, and were compensated for their time. Primary outcome measures were knowledge of PCA and genetic testing, decisional conflict, and intentions to seek PCA genetic testing.

Results: 130 Black males enrolled in the study (mean age = 57.2 years, 66% with a high school diploma or some college; 19% married; 8% previously diagnosed with prostate cancer). There were non-significant increases in knowledge (9.5% increase, intervention arm; 8.1% increase, control arm; p=0.98) and decreases in decisional conflict (-0.4 change, intervention arm; -0.4 change, control arm; p=0.95) in both study arms. However, participants in the intervention arm had significantly greater changes in intention to seek PCA genetic testing than participants in the control arm (0.7 vs -0.4, p=0.012). Also, men in the intervention arm had significantly greater decreases in confusion about how to prevent cancer (-0.3 vs 0.6, p=0.0058).

Conclusion: Men who underwent peer-based education had greater intentions to seek genetic testing than those who received mailed educational materials. While educational materials may be sufficient to impart knowledge about PCA, more complex decisions such as genetic testing from the support of someone with similar lived experiences.

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"I know that I get treated differently:" The Future of Screening for Early Onset Breast Cancer in Black Women

Houghton LC, Nobida A, Levinson E, Walker D, Tehranifar P, McDonald JA

Introduction: Early-onset breast cancer incidence for women <40 is rising rapidly and incidence is higher in Black women. However, there is no population-based screening among this age group. Also, young Black women have not equitably benefited from advancements in breast cancer treatments; therefore, we are simultaneously developing a biomarker-based screening for early onset cancer as well as asking young black women how they perceive breast cancer screening and biomarkers to inform equitable screening for early onset cancer. This abstract focuses on the qualitative component.

Methods: We recruited 16 self-identified Black women between the ages of 25-40 years without a breast cancer diagnosis to participate in one of three semi-structured focus groups, which began with a structured questionnaire and educational session. At separate visits, a genetic counselor facilitated a one-to-one risk counseling session which included calculation of the Tyrer-Cuzick lifetime breast cancer risk score. We calculated summary statistics of the survey and thematically coded transcripts of the focus groups and counseling sessions.

Results: Preliminary themes include awareness, acceptability, accessibility and barriers and facilitators to screening at the individual, family, healthcare system levels. Most participants had no known family history of breast cancer and the lifetime risk scores ranged from 6.1-25%, with one participant clinically categorized as moderate breast cancer risk. Biomarker testing was acceptable and viewed as another "blood test", however some participants expressed medical mistrust of the overall healthcare system: "I don't know that I'm gonna get treated that well"so I don't know if in taking that preventative stuff of doing mammograms, it's like, well, what does that mean when the outcome is not positive for me?"

Conclusion: We found that despite high acceptability of blood-based biomarker screening for breast cancer, young Black women reported healthcare access and bias as barriers. We will integrate these qualitative data with quantitative data from a case-control study of the steroid metabolome and breast cancer risk to guide the development of screening for early-onset breast cancer which address healthcare access and bias in addition to accura

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Breast Density Notification Laws: Impact on Supplemental Breast Cancer Screening

Foster VM, Trentham-Dietz A, Stout NK, Lee CI, Ichikawa LE, Eavey J, Henderson L, Miglioretti DL, Tosteson ANA, Bowles EA, Kerlikowske K, Sprague BL

Purpose: No clinical practice guidelines exist for supplemental breast cancer screening for average-risk women with dense breasts after negative mammography. Awareness of breast density and its relation to breast cancer risk and detection among women undergoing screening is limited but growing. In advance of federal breast density legislation going into effect September 2024, we examined whether state-level density notification laws were related to the use of supplemental screening among women with dense breasts.

Methods: Data included clinical information on 676,546 negative mammograms for 304,125 women aged 40-74 with heterogeneously or extremely dense breasts, without a personal history of breast cancer, who were screened during 2011-2019 at 61 facilities within four registries in the Breast Cancer Surveillance Consortium (BCSC). We calculated descriptive statistics for supplemental screening by ultrasound or MRI within 12 months of each mammogram. Logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for having supplemental screening after vs before state density notification legislation, adjusting for breast cancer risk factors and socioeconomic covariates.

Results: Almost half of the mammograms occurred after (47%) state-level density notification laws went into effect. Overall, 1.1% of mammograms were accompanied by supplemental screening (0.8% with ultrasound, 0.4% with MRI, 0.01% with both), increasing from 0.6% before to 1.7% after density laws. Supplemental screening was more likely to take place after vs before density laws (OR=3.56, 95%CI 3.30-3.84 ultrasound and OR=1.79, 95%CI 1.60-2.00 MRI).

Conclusion: Despite an increase in supplemental screening after state-level breast density notification laws were enacted, the vast majority of women still did not obtain supplemental breast cancer screening after negative mammography. Given the low uptake of supplemental screening at facilities within the BCSC, which reflects breast imaging in community practice, the future impact of federal density notification legislation is uncertain without the development of evidence-based clinical guidelines.

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Characteristics and Patterns of Genomic Testing among Cancer Patients: Analysis of HINTS-SEER

Hong YR, Wang R, Khan M, Vadaparampil S, Ricks-Santi L, Bian J, George T, Braithwaite D

Purpose: Genomic tests (including germline and tumor testing) can inform clinical decision-making in cancer treatment and for potential preventive care of families of cancer patients. We sought to evaluate the characteristics and patterns of genomic testing among cancer patients.

Methods: In this population-based study, we analyzed NCI's 2021 HINTS-SEER linked database, which included three cancer registries: Iowa, New Mexico, and California. Individuals aged 18 or older with a cancer diagnosis were included. Patient sociodemographic (e.g., age, sex, income, education) and clinical characteristics (e.g., cancer site, stage) were compared by the use of genomic testing using bivariate analysis. Predicted probability of genomic testing was calculated by adjusting for age, sex, insurance type, year of diagnosis, and cancer stage.

Results: The weighted study sample included 415,979 cancer patients (mean age, 70.5 years; 54.7 women; 76.4% non-Hispanic White). Overall, 21.7% of patients had undergone germline testing, 13.2% had undergone tumor testing, and 5.0% had undergone both. Younger patients (under 65 years) and females were more likely to undergo genomic testing than their counterparts. Race, income, education level (i.e., socioeconomic status), or family history were not associated with the testing use. Patients with private insurance had a 9% higher probability of undergoing genomic testing than those with public insurance. Patients with breast, female reproductive, and respiratory cancers were found to have 20%-30% higher genomic testing rates than other cancer types.

Conclusion: In this study of cancer patients in Iowa, New Mexico, and California, only 1 in 5 patients underwent genomic testing. Findings showed that germline testing was higher for young and female cancer patients and BRCA1/2-associated (breast and female reproductive) cancer types. However, tumor testing rates did not differ by cancer type or stage. More research with the larger database is needed for optimizing genomic testing across diverse cancer patients.

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Effectiveness of a Multicomponent Intervention to Increase Colorectal Cancer Screening Completion among 45-49-Year-Olds: An Interrupted Time Series Analysis

McClellan SP, Patel S, Uy-Smith E, Gregory B, Neuhaus JM, Potter MB, Somsouk M

Purpose: Colorectal cancer (CRC) screening is recommended starting at age 45, but there has been little research on strategies to promote screening among patients younger than 50.

Methods: We performed a controlled interrupted times series analysis to examine trends in CRC screening from October 2021 to May 2023 and used segmented regression to assess for changes associated with the October 2022 rollout of the intervention. The study sample consisted of patients aged 45-49 with a primary care visit in the last two years within a safety net health system in San Francisco. Patients aged 51-55 were included as a comparison group. The intervention consisted of outreach to patients aged 45-49 via mailed fecal immunochemical test (FIT) (sent to 46% of patients) and text (all patients) and the extension to this age group of an existing standing order protocol allowing primary care nurses and medical assistants to order FIT.

Results: The percentage of patients aged 45-49 up-to-date with CRC screening increased an average of 0.4% (95% CI 0.3, 0.6) every 30 days prior to intervention rollout and 2.8% (95% CI 2.5, 3.1) after (unadjusted slope difference 2.3% [95% CI 2.0, 2.7]). This difference persisted after adjusting for small changes in the outcome observed in the comparison group (adjusted slope difference in 45-49 age group 1.7% [95% CI 1.2, 2.2]) and after excluding patients who were mailed FIT (adjusted slope difference 0.3% [95% CI 0.0, 0.7]).

Conclusions: These results suggest that the intervention increased CRC screening completion among patients 45-49. Among patients who were not mailed FIT, the standing order protocol and electronic outreach were still effective.

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Evaluating the Impact of Mailed Fecal Immunochemical Test Outreach in Practice with a Target Trial Framework

Demb J, Rice K, Harris V, Agnihotri P, Tai-Seale M, Liu L, Martinez ME, Gupta S

Purpose: Randomized trials of mailed FIT outreach show effectiveness for increasing colorectal cancer (CRC) screening, but the extent to which trial results reflect usual care practice is uncertain. We estimated effect of mailed fecal immunochemical test (FIT) outreach compared to usual care on CRC screening completion using a target trial framework.

Methods: We conducted a matched cohort study of insured patients ages 45-75 receiving care at University of California San Diego Health System (UCSDHS). Eligible patients included those not up to date for average risk CRC screening at the start of follow-up (2021-2023). Patients with history of inflammatory bowel disease, CRC, colorectal polyps, or colectomy were excluded. We matched (1:2) patients that received a mailed FIT to patients receiving usual care (opportunistic screening) by birth year, sex, race/ethnicity, and insurance type. The outcome was time to any CRC screening completion, identified via Current Procedural Terminology codes. We used survival analyses to estimate 3-month and 1-year screening completion proportions and risk differences (RD) and corresponding 95% confidence intervals (95% CI).

Results: There were 5,511 patients ages 45-75 in the matched cohort; 1,837 received mailed FIT outreach. In the mailed FIT outreach group, CRC screening completion was 22% (95% CI: 20%-24%) at 3 months and 44% (95% CI: 41%-47%) at 1 year. In the usual care group, CRC screening completion was 9% (95% CI: 8%-9%) at 3 months and 28% (95% CI: 26%-29%) at 1 year. RDs were 13% (95% CI: 12%-15%) at 3 months and 16% (95% CI: 15%-18%) at 1 year. Among screening completers, the most frequent modality used was FIT (75%) in the mailed FIT outreach group and colonoscopy (77%) in the usual care group. The effect of mailed FIT outreach differed by age, with adults ages 50-54 (RD: 23%, 95% CI: 20%-25%) and ages 55-59 (RD: 25%, 95% CI: 21%-29%) showing greater benefit at 1 year. Patients with private insurance showed greater benefit of mailed FIT outreach (private vs. public RD: 21% vs. 3%).

Conclusions: Mailed FIT outreach increased CRC screening completion rates compared to usual care. Application of target trial framework to analyze observational data yielded estimates similar to published randomized controlled trials.

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Geospatial Analytics of Supply-Demand Gaps to Increase Utilization of Lung Cancer Screening

Lee MS, Levitt AP, Ramey A, Jones J, Milan J, Pagan L, Jani C, Lopes G, Balise RR, Kobetz EN

Purpose: This study aims to increase lung cancer screening utilization at the facilities of an NCI-designated comprehensive cancer center in South Florida by targeting census tracts with high demand and low utilization of lung cancer screening services for patient recruitment via community outreach and engagement.

Methods: The study area is the catchment area of Sylvester Comprehensive Cancer Center in South Florida, consisting of four counties in Miami-Dade, Broward, Palm Beach, and Monroe with an estimated total population of 6 million. To identify locations with high demand for lung cancer screening, we used geospatial hot spot analysis to identify statistically significant clusters of census tracts with high age-adjusted incidences (i.e., calculated with 2011-2020 Florida cancer registry data) for lung cancer. We also identified census tracts with at least 20% (i.e., 75th percentile value in the study area) of population who are active smokers based on the Places data released by the Center for Disease Control and Prevention. A census tract with high demand for lung cancer screening was defined as one that is either a lung cancer hot spot or has at least 20% active smokers. For supplies of lung cancer screening, we retrieved electronic patient records for lung cancer screening services provided at Sylvester facilities from 2021 to 2023. These patient records were geocoded and aggregated by patients' zip codes of residence.

Results: By analyzing the demands and supplies of lung cancer screening for all census tracts on the same map, we found that most screening services were offered to patients in Miami-Dade County. By comparison, there are higher demands (i.e., larger lung cancer hot spot clusters and more active smokers) in Broward, Palm Beach, and Monroe Counties; however, only a small fraction of all screened patients resided in these three counties, pointing to the needs for increased patient recruitment.

Conclusions: The study results demonstrate the utilities of geospatial data analyses for identifying population segments for which increased efforts for cancer prevention are needed. Targeting census tracts with significant gaps in demand over supply for lung cancer screening can help a COE team reach more at-risk populations with limited resources.

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How Often (and for whom) Is Cancer Diagnosed as an Emergency?

Thompson CA, Peacock SH, Rohde R, Metwally EM, Soppe SE, Halula JC, Mullins MA, Barclay M, Kurian AW, Dillon EC, Pettit NR, Thompson M, Pruitt SL, Lyratzopoulos G

Purpose: Data from other high-income countries suggest that cancers are often diagnosed after visiting the emergency department (ED), contributing to poor outcomes including shorter survival. Comparable evidence from United States (U.S.) populations is limited, though emergency diagnosis is frequently defined as any ED use in the 30 days prior to diagnosis, which may overestimate true cancer diagnosis emergencies. We investigated emergency cancer diagnosis, focusing on patients whose cancers were initially diagnosed during an emergency hospital admission.

Methods: We studied 961,143 Medicare beneficiaries with first incident cancers diagnosed between 2009-2018, identifying emergency diagnoses as patients whose initial cancer was diagnosed during an inpatient stay following ED presentation. We compared prevalence of emergency diagnosis by tumor type, patient demographics, and area characteristics.

Results: Overall, 14% of cancer patients were diagnosed as emergencies, with variation by tumor type (highest to lowest: colon-29%, pancreas-28%, stomach-25%, ovary-24%, liver-22%, leukemia-20%, myeloma-20%, rectum-18%, esophagus-17%, lymphoma-17%, kidney-13%, bladder-8%, uterus-5%, female breast-3%, and prostate-2%); tumor stage at diagnosis (distant-28%, regional-15%, localized-6%); patient age at diagnosis (31% for 95+ year old vs. 10% for 66-69 year olds); patient sex (female-16% vs. male-13%); marital/partner status (unpartnered-19% vs. partnered-11%); race/ethnicity (highest to lowest: Southeast Asian-21%, Black-20%, Hispanic-18%, Native Hawaiian/Pacific Islander-17%, East Asian-17%, White-14%, South Asian-14%, Native American-13%); Medicaid eligibility (full-24%, partial-19%, none-13%); county urbanicity (metropolitan-15%, larger urban-12%, small urban/rural-10%), and census tract SES (Yost quintiles: lowest-18% vs. highest-13%).

Conclusions: A substantial proportion of U.S. cancer patients are diagnosed as emergencies with prevalences varying by tumor type and stage. We observed differences by patient demographics and area characteristics which could point to potentially avoidable emergencies originating from issues of healthcare access or discrimination. Future research will evaluate the impact of emergency diagnosis on cancer mortality and treatment.

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Modified Mammographic Density Measures for Breast Cancer Risk Assessment in an Intermediate-Risk Population

Watt GP, Keshavamurthy KN, Nguyen TL, Lobbes MBI, Jochelson MS, Sung JS, Moskowitz CS, Patel P, Liang X, Woods M, Hopper JL, Pike MP, Bernstein JL

Purpose: For women with higher-than-average breast cancer risk or dense breasts, contrast-enhanced mammogram (CEM) is increasingly used to improve screening performance. We evaluated whether conventional and modified measures of mammographic density (MD) were associated with breast cancer for an intermediate-risk population of women receiving CEM.

Methods: In a cohort of 959 women with no prior history of breast cancer who received CEMs from 2010-2020, we used CUMULUS software to measure conventional Cumulus MD, "Altocumulus" MD, and "Cirrocumulus" MD, capturing the "white or bright", "brighter" and "brightest" areas, respectively, on the low-energy CEM images. Low-energy CEMs are equivalent to standard full-field digital mammograms. From this cohort, we developed a nested case-control study of 66 case women with newly diagnosed unilateral breast cancer, frequency-matched on age to 133 cancer-free controls. Using the low-energy CEMs not selected for the case-control study (n=760), we trained a deep learning model (nnU-net) on conventional Cumulus to measure MD. The accuracy of the nnU-net measure was tested on the case-control images (n=199). The four MD measures (Cumulus, Altocumulus, Cirrocumulus, and nnU-net) were expressed as mammographic dense area (MDA) and mammographic percent density (MPD=MDA/total breast area). Using multivariable logistic regression, we estimated the associations of breast cancer with each MD measure, expressed as odds per age- and breast-fat-adjusted standard deviation (OPERA).

Results: The intraclass correlation coefficient for the agreement of Cumulus MDA with nnU-net MDA was 0.95 (95% 0.92-0.95). In multivariable regression, the highest-intensity MPD measure, Cirrocumulus, had the strongest association with breast cancer (OPERA=1.40, 95% CI 1.04-1.89) and the best model fit. Altocumulus MPD and conventional Cumulus MPD did not have statistically significant associations with breast cancer (OPERA 1.19, 95% CI 0.87-1.64 and 0.99, 95% CI 0.70-1.40). The results were similar when using MDA instead of MPD.

Conclusions: The modified, high-intensity measure of MD, Cirrocumulus, may refine breast cancer risk assessment for intermediate-risk women or those with dense breasts.

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Proximity to Lung Cancer Screening Services and Lung Cancer Diagnosis

Tipre M, Demanelis K, Baskin ML

Purpose: To evaluate whether distance to screening centers of excellence (SCOEs) from the residence is associated with increased risk of late-stage lung cancer (LSLC) diagnosis (vs. early-stage), in our catchment area (CA) population.

Methods: Data for all adult incident LC cases within the CA of 29 counties in Western Pennsylvania (PA), between 2013-2017 were obtained from PA state cancer registry. Information included demographics, residential address, and details about cancer diagnosis. Early and late-stage LC cases were identified using SEER 2000 summary staging manual. Locations of all SCOE within the PA were obtained from GO2 foundation. Drive-time in minutes from the LC cases' residences to their nearest SCOE were computed using ArcGIS network data analysis. Multivariable logistic regression was used to evaluate whether distance to SCOE was associated with LSLC (vs. early-stage LC) diagnosis, adjusting for age, race, sex, neighborhood deprivation index (NDI), and urbanicity.

Results: A total of 9275 people with early (21.5%) or late-stage (78.5%) LC diagnosis between 2013-2017 years were included. Mean age was 70 (ffl11) years, 51% males, and 94% were Whites. Cases resided within 16 (ffl12) minutes or 16 (ffl16) kilometers from the nearest SCOE (n=49); minor difference was noted for drive-time: early-stage LC cases: 15.7 (ffl12) vs. LSLC: 16.4 (ffl13); p= 0.01. Results of the logistic regression found a weak association between drive-time and LSLC in the unadjusted model (OR, 1.01; 95%CI, 1.00-1.01) which did not persist in the adjusted model (OR, 0.99; 95%CI, 0.99-1.00). Male sex (OR, 1.34; 95%CI 1.21-1.80) and, increasing NDI quintiles (quintile 4 vs. 1, OR, 1.27; 95%CI, 1.05-1.55; quintile 5 vs.1: OR, 1.41; 95%CI, 1.15-1.17) were associated with increased odds of LSLC.

Conclusion: Most LC cases included in the analyses were within 15 to 30 minutes drive-time from their nearest SCOEs. Proximity to SCOE was not associated with stage of LC diagnosis suggesting that distance to SCOE may not be a barrier to utilization of screening services in our CA population. Other individual and community factors such as neighborhood deprivation, lack of awareness, lack of insurance may explain underutilization of LC screening services and the higher burden of LSLC in our CA.

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Risk Analysis of Patients with documented BMI with or without Opioid Dependence for the Outcomes of Primary and Metastatic Brain and Spinal Cord/Cranial Nerve Tumors: A Retrospective Cohort Study

Hong J, Hallan D, Rizk E

Use of opioids and its disorders have always been a controversial topic despite of its benefits in managing pain especially in patients with comorbidities. Opioids are thought to possibly cause an increase in risk of developing cancer due to their angiogenetic and immunosuppressive effects. This retrospective cohort study aimed to investigate the risk associated with patients who have opioid dependence with documented BMI in relation to the outcomes of brain and spinal cord/cranial nerve tumors. We conducted a retrospective analysis of patient records from the database TriNetX, a large healthcare database with deidentified patient data. Patients were stratified into two cohorts based on the presence and absence of opioid dependence diagnosis with documented BMI: Cohort 1 (Documented BMI with opioid dependence) and cohort 2 (Documented BMI without opioid dependence). Propensity score was matched for age, BMI categories (ICD-10 codes Z68.1-4), and diagnoses of diabetes, metabolic syndrome, and stress. Outcome of interest were primary and metastatic brain tumors (ICD-10 code C71 and C79.31) and spinal cord/cranial nerve tumors (ICD-10 code C72) limited for 5 years. For primary and metastatic brain tumor analysis, cohort 1 (with opioid dependence) and cohort 2 (without opioid dependence) had 667 and 575 patients who developed primary and metastatic brain tumors, respectively (OR [95% CI], 1.162 [1.039-1.299]). For spinal cord/cranial nerve tumor analysis, cohort 1 (with opioid dependence) and cohort 2 (without opioid dependence) had 59 and 34 patients who developed spinal cord/cranial nerve tumors, respectively (1.736 [1.138-2.648]). Both brain and spinal cord/cranial nerve tumor analyses revealed stronger association to the development of tumors in patients with opioid use dependence diagnosis. This study indicates the association between opioid dependence as a basis diagnosis and possible development of CNS tumors. These findings suggest that there is a need to manage opioid dependent patients with a preventive neuro-oncological plan for possible risk of developing cancer. Further research is warranted to dictate specific relationships between opioid dependence and development of cancer to create patient-based prevention and management strategies.

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Video Intervention Improves Patient Knowledge on Timeliness to Return for Annual Lung Cancer Screening

Wernli KJ, Anderson ML, Luce C, Gao H, Su YR, Palazzo L, Ralston JD, Rogers K, Bezman N, Carter-Bawa L, Triplette M, Vasavada A, Green BB

Purpose: Annual rates to repeat lung cancer screening are low nationally, and patients report a knowledge gap about when to return for their next scan. We tested a video-based intervention to improve patient knowledge about timeliness to return.

Methods: We conducted a pragmatic randomized trial of Kaiser Permanente Washington members aged 50-78 years who completed a screening low-dose CT (LDCT) with normal results. Participants were assigned to an educational video or usual care. Randomization was balanced by lung cancer screening and tobacco history. Patients in the video group received a web link via patient portal message 3 weeks after LDCT. The video's objectives were to normalize routine screening; remind patients when due; and encourage connecting with family/friends about their health. About 8 weeks after LDCT, participants were asked to complete a online or telephone survey about lung cancer screening knowledge, self-efficacy; and tobacco-related stigma (secondary outcomes). We descriptively compared survey responses among those who received video versus usual care.

Results: Survey participation rate was 40% with 352 respondents (N=186 video, N=166 usual care). Respondents were on average age 67.4 years (SD 6.1), predominantly white , female, and college educated. Overall knowledge of lung cancer screening (>80% of 11 questions correct) was low but similar between the two groups (28% in video vs 27% in usual care). 79% in both groups answered correctly that "They needed to return for lung cancer screening even with a series of normal scans". Video respondents were more likely to report that their next care step as "Return to screening in one year" (87% vs 72% usual care). Video respondents were also more likely to report that "Their health care provided recommended that they get additional lung cancer screening test" (44% vs 34% usual care). Overall, respondents reported high levels of tobacco-related stigma and screening self-efficacy. No differences in tobacco-related stigma or screening self-efficacy were observed video vs usual care.

Discussion: Video-based educational interventions beyond shared-decision making improve short-term knowledge of timeliness to return for lung cancer screening, which may increase return for annual screening.

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What Do Cancer Genetic Healthcare Providers Want Us to Know about Variant Reclassification and Recontact that We Are Not Asking? A Thematic Analysis of Open-Ended Survey Responses

Brown K, Davidson E, Shete S

Up to 10% of all cancers are attributable to genetic mutations. Accurate variant classification and relaying the information to patients is critical for cancer prevention, early detection, and treatment. Over a 5-10-year period, 6-15% of variants undergo reclassification which is key to adapting to the dynamic knowledge generated in genomics. As the frequency of reclassifications increases, the issue of whether, how, and when providers should recontact patients becomes important. Understanding provider practices around reclassification and recontact is urgently needed to shape cancer genetics practice. We use deductive thematic analysis to analyze the content of comments offered by oncologists and genetic counselors (GCs) from a large national survey on practices and opinions around variant reclassification and recontact. Of the 634 oncologists and cancer GCs, 126 (20%) offered substantive free text comments. Three thematic areas emerged: recontact responsibility, how the responsibility is fulfilled, and the need for standardization. Ambiguity over the role and responsibilities for patient recontact was evident. Some oncologists felt that laboratories, not them, are responsible for recontact; others believed that ordering providers/GCs were responsible; GCs readily acknowledged their own responsibility in recontact but added caveats. Besides lack of up-to-date patient contact information, providers raised unique challenges with recontact: financial instability of some commercial laboratories, lack of clinical resources, and accumulating burden of reclassifications. Contacting family members, as exemplified and popularized by Chris Evert, needed further clarification. There were calls for developing practice guidelines on prioritizing variants for recontact and how duty for recontact may be fulfilled - simply by updating the patients' medical records, making phone calls, sending letters etc. While consensus exists about the importance of variant reclassification and recontact, the field of cancer genetics is ablaze with debates over the nature and extent of provider responsibilities. Oncologists and GCs strongly believe that a clarifying their responsibilities through a consensus framework for reclassification and recontact will better serve all constituencies.

Global Cancer Research

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Building Partnerships in Uganda to Improve Cervical Cancer Prevention

Kepka DL, Penney D, Gubler SG, Slagle RP, Christini KA, Thomas MS, Clarke Nanyonga R, Mbeiza A, Matovu S

Background/Objectives: Cervical cancer is the most common cancer among Ugandan women with a high incidence rate of 56.2 per 100,000 women and a high mortality rate of 41.4 per 100,000 women in 2020. Uganda ranks sixth in the world for cervical cancer mortality. HPV vaccination is the most effective strategy for reducing the burden of cervical cancer in Uganda yet HPV vaccination rates in Uganda are suboptimal at 66.2% for HPV vaccine completion among women.

Methods: An HPV vaccination and HPV-cancer prevention bootcamp was held with healthcare students, nurses, midwives, faculty, and staff at Clarke International University in Kampala, Uganda that included about 65 participants. The workshop was conducted in partnership with faculty from the University of Utah and Huntsman Cancer Institute in the U.S. The training included a pre-test, a one-hour lecture, facilitated focus group discussions, and a post-test. The pre- and post-tests surveyed participants' demographics, HPV-related knowledge, and HPV vaccination receipt (N = 50). It asked open-ended questions about HPV, the HPV vaccine, and cervical cancer prevention. The focus groups allowed participants to further engage with information from the lecture by discussing what they learned and reflecting on cervical cancer prevention. Qualitative data were assessed using thematic content analysis procedures.

Results: Respondents were primarily female (71.1%) and students (70.5%). Their ages spanned from 20 to 46 years with a median age of 25. About 1 in 5 respondents had a daughter aged 11-17 years. Among these daughters, 22% had NOT received an HPV vaccine. All respondents found the training relevant and nearly all identified cervical cancer's association with HPV. However, respondents could not recall many other cancers associated with HPV such as oropharyngeal cancer and other ano-genital cancers that occur in both women and men. Focus group thematic analyses revealed large amounts of HPV and HPV vaccination misinformation, high levels of anxiety surrounding HPV-related cancers, and a lack of resources for HPV education. Cultural considerations for HPV vaccination were also explored.

Conclusions: Further training and education about cervical cancer prevention and HPV vaccination is needed in Uganda.

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Developing and Implementing a Cancer Awareness Campaign in Rural Botswana

Kohler RE, Manyake K, Mitarotondo A, Tapela N, Mmalane M, Dryden-Peterson S

Purpose: To describe the development of the Potlako+ (meaning hurry in Setswana) awareness campaign as part of an Orbit IIb trial of a multi-level intervention to improve detection and treatment initiation of common cancers (Kaposi Sarcoma, breast, cervix, vagina, vulva, anus, penis, head and neck) in Botswana.

Methods: Stakeholder engagement involved: 1) resources and needs assessment, 2) iterative material development, and 3) tailoring events to community preferences. We conducted and analyzed site visit field notes, inventories, key informant interviews, focus group discussions, attendance sheets, and meeting minutes.

Results: We conducted 2-3 planning meetings in each of the 20 communities. Overall 924 (range: 15-87) clinic, hospital, and district management staff, chiefs, village and religious leaders, and traditional healers attended. Brainstorming and ranking exercises identified the most acceptable activities (walks, health fairs), venues (kgotla, church, clinic, school), and partners (NGOs, businesses, government offices). Multiple rounds of interviews and focus groups with patients and community members identified knowledge gaps, elicited feedback on campaign branding and content designs, and pre-tested materials. For 10 intervention communities, we created small billboards, transportation advertisements, narrative flipcharts for group education, posters, and postcards for each cancer type and cancer generally. Routine education was delivered in clinic waiting areas; postcards were distributed at outpatient visits. We held at least one large annual event per community. Continuous engagement with some communities resulted in multiple, smaller events, throughout the year with various populations (working adults, pensioners, sex-specific) as desired. When feasible, partners provided survivor testimonies, breast and cervix screening, male consultations, HIV/STI testing, diabetes and hypertension monitoring, and dental exams.

Conclusions: Formative research with target audience members and stakeholders helped align messaging and events with community and clinic readiness, leveraged existing supports, and reinforced local, district, and regional health efforts. Co-creating outreach strategies with communities enhanced uptake and may improve sustainability.

182-T

Feasibility of Using a Mobile Health App for Cervical Cancer Screening in the Democratic Republic of the Congo

Ndeke JM, Meanwell EV, Rosenberg MS, Luo J, Mbutuku AM, Landsittel D

Purpose: To assess the feasibility of using a mobile health (MH) app for cervical cancer screening in the Democratic Republic of Congo (DRC).

Methods: A 3-day training was held at two DRC hospitals to demonstrate features of the Wema MH app to the hospital-designated gynecology providers and their outpatient clients randomly selected on a 1:1 basis. A pre-training and an 18-item post-training validated questionnaire for standalone apps were administered to all participants, and providers rated 21 additional items. The questionnaires used a Likert scale with response options from 1 (strongly agree) to 7 (strongly disagree). Audio-recorded focus groups were held to collect qualitative feedback from all participants. For questionnaires, we conducted a descriptive analysis and assessment of reliability using Cronbach's Alpha. We generated focus-group transcripts, which two coders independently reviewed to identify thematic codes.

Results: Of the 31 participants with a mean age (SD) of 38.2 (10.2) yrs, 21 (67.7%) were female, 17 (54.8%) providers, 16 (51.6%) came from a rural hospital, 28 (90.3%) held a post-secondary degree, and 23 (74.2%) had no prior experience with an MH app. After training, participants gave a mean score of 1.45 (IQR: 1, 2) for the item "I would use this app again", 1.55 (IQR: 1, 2) to "overall, I am satisfied with this app", and to "this MH app provided an acceptable way to receive [1.21 (IQR: 1, 1.25)] or to deliver [2.06 (IQR: 2, 3)] healthcare services". The mean total scale score was 1.57 (IQR: 1, 2). Overall, focus groups saw using this app as feasible and liked its ease of use, quick screening and results, ability to make screening accessible in rural/underserved areas, and provision of better data security. They also identified potential areas to improve for increased utility, including offline access and language support.

Conclusion: In this first reported study of its kind in the DRC, most participants strongly agreed/agreed that it is feasible to use an MH app like Wema, and their ratings were reliable and consistent across categories and focus group themes. Our findings are consistent with those observed in the neighboring countries and suggest promise in future field testing of this app for cervical cancer screening in the DRC.

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Navigating Cervical Cancer Treatment: Experiences of Women Living in Rural Kenya

Mkuu R, Makokha F, Chungu C, Mweni S, Kithaka B, Hall J

Purpose: Our study examined the experiences of women who are undergoing cervical cancer treatment in Machakos County in Kenya.

Methods: We recruited 30 women living in rural areas who are currently undergoing cervical cancer treatment at a county hospital in Kenya. Qualitative interviews were guided by the Health Belief Model, conducted in Kiswahili and English and later de-identified and transcribed in English. The main themes generated were identified through thematic coding.

Results: Barriers to treatment: Participants report delays in cancer treatment initiation due to referrals to geographically distal urban areas for diagnosis confirmation. Low income and lack of finances result in testing, treatment delays, and limited transportation access to appointments. Negative experiences with providers and stigma were barriers to care. Most participants reported farming as their primary source of income. The side effects of cancer limited their ability to engage in physical labor, limiting their ability to finance their treatment.

Facilitators to treatment: Family support is a significant facilitator in paying for treatment and navigating financial challenges. Patients registered with the National Health Insurance Fund reported less financial-related barriers to treatment.

Discussion: Lack of access to proximal facilities and finances is a significant barrier to initiating cervical cancer treatment. There is a need for facilities that can support the entire continuum of care, from screening to treatment in rural areas. Limiting the need for referrals will improve the timing of care treatment initiation, lessen the financial burden of traveling to distant facilities, and reduce the added costs of multiple diagnostic tests for women with limited financial means.

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Validation of a Tool for Measuring Breast Cancer Awareness Among Brazilian Women

Souza AB, Martins DBDF, Goncalves LMMG, Morais LHT, Martin MMC, Resende MR, Caroll C, Pujatti PB.

Purpose. Validated tools to access the lay public's cancer-related knowledge are scarce in Brazil. There is a knowledge gap regarding what individuals seen in the public health system know about cancer prevention. Cancer Awareness Measure (CAM) is a validated tool developed by Cancer Research UK (CRUK). We sought to translate, culturally adapt, and validate the CAM questionnaires, starting with the Breast Module.

Methods. The protocol was approved by the institutional ethics committee and the CRUK granted permission to conduct the study. In phase I, the CAM Breast Module was translated from English into Portuguese by 2 independent translators. A third translator summarized, culturally adapting the independent translations. The summarized version was evaluated by 10 healthcare providers who made edits to improve comprehension. In phase II, the questionnaire was pilot tested with 30 individuals, ≥ 18 years, recruited and interviewed in a Basic Health Unit (BHU). The participants rated the degree of understanding of the questions on a scale of 0 to 5, and those with scores lower than 4.0 were changed according to recommendations. Content validity was evaluated by 5 experts in oncology. In phase III, the survey was applied to 100 BHU patients, and internal consistency was calculated by Cronbach`s Alpha. Informed consent was provided and signed in all phases.

Results. Between phases I and II, the healthcare providers made nearly 30 edits to improve clarity. Women in phase II had a mean age of 38.5 years (ffl15.0), 56.25% completed secondary education (high school equivalent), and 60.62% had an income of 1-3 Brazilian minimum wage. They had an average understanding of 4.88 (ffl0.1) and no modifications was made to the pilot questionnaire. Content validity showed that the questionnaire demonstrated high clarity and relevance, with a final clarity score of 0.93 and a relevance score of 0.94. Three questions with CVC < 0.8 were adjusted, as recommended by specialists. The calculated Cronbach's alpha of responses internal consistency in Phase III was 0.77.

Conclusions. We validated a tool to access breast cancer awareness in Brazil. This is an initial step towards identifying the lay public's educational unmet needs on cancer prevention.

Lifestyles Behavior, Energy Balance & Chemoprevention

185-T

Alcohol Intake and Renal Cell Cancer Risk: A Pooled Analysis of 27 Cohort Studies

Dong J, Ferrari P, and Smith-Warner SA on behalf of investigators from participating cohorts in the Pooling Project of Prospective Studies of Diet and Cancer

Purpose: We examined associations between alcohol use and renal cell cancer (RCC) risk in 27 prospective cohorts, given the inconsistent findings on this relationship overall and by sex and smoking habits.

Methods: This pooled analysis included 2,143,677 participants (1,281,140 women and 862,537 men) with study-specific mean ages ranging from 40-66 years. Median follow-up times ranged from 8-28 years across cohorts. Alcohol use was collected via validated food frequency questionnaires, supplementary questionnaires, or interviews. RCC cases were identified through cancer registries and/or self-report with medical record review. Study-specific multivariable hazard ratios (HRs) and 95% confidence intervals (CI) were calculated using Cox proportional hazards models and combined using random-effects models. We also investigated whether alcohol intake and RCC relationships differed by sex, smoking status, and geographic region.

Results: A total of 8,193 incident RCC cases (3,260 women and 4,933 men) were identified. Among current alcohol drinkers (32%-92% of participants across studies), median alcohol intakes ranged 2-36 g/d. Significant non-linear inverse associations were observed overall and in women and men (p-nonlinearity < 0.05). Compared to alcohol intake of 0.1-4.9 g/d, the pooled HRs (95%CI) were 1.01 (0.92-1.10) for non-drinkers, 0.80 (0.75-0.85) for intakes of 5.0-14.9 g/d, 0.74 (0.68-0.81) for 15.0-29.9 g/d, and 0.74 (0.65-0.84) for ≥30 g/d (p-trend < 0.001). The HRs for alcohol consumption of ≥30 g/d compared to 0.1-4.9 g/d were 0.82 (95%CI: 0.61-1.11; p-trend < 0.001) in women and 0.72 (95%CI: 0.64-0.81; p-trend < 0.001) in men. Associations were similar for never (HR=0.74, 95%CI: 0.65-0.85), past (0.74, 0.66-0.82), and current smokers (0.74, 0.64-0.86) comparing alcohol intakes of ≥15 g/d vs 0.1-4.9 g/d. Associations also did not appear to differ by region, with HRs for the same comparison = 0.88, 95%CI: 0.49-1.60 in Asian, 0.75 (0.63-0.90) in European/Australian, and 0.72 (0.66-0.78) in North American cohorts. Future analyses will evaluate specific alcoholic beverages.

Conclusion: Alcohol intake was associated with a statistically significant lower risk of RCC in both women and men and in never, former, and current smokers.

186-T

Associations of Weekday and Weekend Sleep Duration with Cancer Risk among US Adults in the Cancer Prevention Study-3 Cohort

Donzella SM, VoPham T, Patel AV, Phipps AI, Zhong C

Purpose: Our objective was to investigate the associations of sleep duration and sleep duration misalignment with cancer risk among US adults in the Cancer Prevention Study-3 (CPS-3).

Methods: CPS-3 is a prospective cohort of approximately 250,000 US adults aged 30-65 years. At baseline (2006-2013), participants were asked to report their average sleep duration over the past 2 years for weekdays and weekends separately. Using the midpoint of each sleep duration category, a 5:2 weekday:weekend weighted average was created for the overall weekly average. Sleep duration misalignment was calculated using the difference of weekend and weekday sleep duration category midpoints and positive misalignment values were categorized as a difference of 0, 2, and 4 hours. Cancer incidence was determined via linkage to state registries; follow-up time ended at the time of cancer diagnosis, time of death, or end of follow-up (12/31/2018). We excluded participants if they were missing information on age, sex, or sleep duration, reported a sleep duration of <5 hours or ≥11 hours, had prevalent cancer at baseline, or reported night shift work for ≥2 years. We used multivariable Cox proportional hazard models to estimate adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) for the associations of sleep duration and duration misalignment with overall cancer risk adjusted for sex, age, race/ethnicity, body mass index, marital status, education, smoking status, alcohol use, physical activity, and prevalent comorbidities.

Results: A total of 6,423 incident cancer cases were reported among the 154,201 participants included in the study, of which 34% reported 5-6 hours, 62% reported 7-8 hours, and 4% reported 9-10 hours of sleep per weekday. More participants (18%) reported 9-10 hours of sleep on weekends. Most participants (64%) had a sleep duration misalignment of 0 hours. Compared to participants who reported 7-8 hours of sleep on the weekend, participants who reported 9-10 hours had an increased risk of cancer (adjusted HR=1.06, 95% CI 1.00, 1.14). No other associations were found.

Conclusion: Long weekend sleep duration was associated with a modest increased risk for cancer. Sleep duration and duration misalignment showed weak or no association with cancer incidence.

187-T

Calibrated Dietary Pattern and Cancer Risk in the Women's Health Initiative Cohorts

Zhang X, Vasan S, Zheng C, Tinker L, Raftery D, Gowda N, Lampe J, Horn LV, Sun Y, Tabung F, Pan K, Neuhouser M

Purpose: We aimed to use metabolomics to develop calibration equations for the Healthy Eating Index 2010 (HEI-2010) from self-reported diet and to examine the association between the calibrated HEI-2010 and cancer risk in the Women's Health Initiative (WHI).

Methods: Prospective cancer risk association analyses were based on postmenopausal U.S. women aged 50-79 years when enrolled in 40 U.S. clinical centers in 1993-1998 with data on diet and cancer risk (n=108,530). We first used the WHI Nutrition and Physical Activity Assessment Study Feeding Study (NPAAS-FS) (n = 153) to identify metabolomic biomarker signatures of HEI-2010 and then used the Observational Study (NPAAS-OS) (n = 450) to develop calibration equation for self-reported HEI-2010 to reduce systematic measurement error. Serum and urine samples were assayed by several metabolomics platforms. HEI-2010 score was calculated using consumed food intake records from the NPAAS-FS and regressed on metabolomic measures for the discovery of dietary pattern biomarkers using an R2≥36% criterion. Stepwise selection models (with P0.10 for entry) were used to predict the metabolomic values in the NPAAS-OS cohort from self-reported food frequency questionnaire (FFQ), 4-day food record (4DFR), and 24-hour recalls plus personal characteristics. We then examined the associations of the calibrated HEI-2010 with cancer risk over a 20-year (median) follow-up period using Cox regression models.

Results: The adjusted R2 for HEI-2010 calibration equations were as follows: FFQ, 53.1%; 4DFR, 54.5%; 24-hour recall, 48.7%. Without calibration, Hazard Ratios (HRs) for a 20% increment in HEI-2010 were 0.99 (95% CI=0.98, 1.00) for total invasive cancers, 0.97 (95% CI=0.95, 1.00) for colorectal, 0.95 (95% CI=0.93, 0.97) for lung, 0.94 (95% CI=0.88,1.00) for bladder, and 0.95 (95% CI=0.91-1.00) for kidney cancer. However, when using calibration, only total invasive cancers (HR=0.98, 95% CI=0.97, 1.00) and lung cancer (HR=0.90, 95% CI=0.86, 0.95) were associated with calibrated HEI-2010.

Conclusions: Compared to analyses without calibration, calibrated HEI-2010 yielded slightly lower cancer risk associations in postmenopausal women most notably for lung, bladder and total invasive cancer.

188-T

Coffee and Tea Consumption and Risk of Head and Neck Cancer: An Updated Pooled Analysis in the International Head and Neck Cancer Epidemiology (INHANCE) Consortium

Nguyen T, Koric A, Chang CP, Zhang ZF, Lee YA, Hashibe M, on behalf of the INHANCE Consortium

Purpose: Coffee and tea are two popular beverages worldwide, and are known for their potential antioxidative and anticancer effects. The relationship between coffee and tea consumption and the risk of head and neck cancer (HNC) remains unclear. With the increasing global burden of HNC, the aim of our study was to examine the association between daily coffee and tea consumption and HNC risk.

Methods: We conducted a pooled analysis of 9,554 HNC cases and 15,783 controls from 14 individual-level case-control studies from the International Head and Neck Cancer Epidemiology (INHANCE) Consortium. Information on coffee and tea consumption was collected via structured questionnaires. Random-effects logistic regression was used to calculate adjusted odds ratios (aORs) and 95% confidence intervals (95% CIs) for HNC and its subsites, adjusting for sociodemographic factors, study center, body mass index, tobacco smoking, alcohol consumption, and fruit and vegetable consumption.

Results: Drinking >4 cups of caffeinated coffee daily was inversely associated with HNC (aOR=0.80, 95% CI: 0.65-0.99), and for oral cavity (aOR=0.71, 95% CI: 0.57-0.90) and oropharyngeal cancers (aOR=0.76, 95% CI: 0.60-0.97). For decaffeinated coffee, ever drinking decaffeinated coffee and drinking between 0 to 1 cup daily were inversely associated with oral cavity cancer (aOR=0.80, 95% CI: 0.66-0.97 for ever drinker; aOR=0.76, 95% CI: 0.60-0.95 for between 0 to 1 cup). For tea consumption, ever drinking tea was inversely associated with hypopharyngeal cancer (aOR=0.71, 95% CI: 0.58-0.88) but not oral cavity or oropharyngeal cancers. Daily tea consumption of >1 cup was inversely associated with oropharyngeal (aOR=0.89; 95% CI: 0.79-0.99) and hypopharyngeal cancers (aOR=0.65, 95% CI: 0.45-0.92).

Conclusion: Our findings support an inverse association between caffeinated coffee consumption and HNC, oral cavity, and oropharyngeal cancer risks, decaffeinated coffee consumption and oral cavity cancer risk, as well as tea consumption and oropharyngeal and hypopharyngeal cancer risks. Future studies are needed to address differences in the types and processing of coffee and tea to improve our understanding of the association of coffee and tea consumption and the risk of HNC in the global population.

189-T

Diet Quality Among Adult Cancer Survivors

Ezeani A, Agurs-Collins T

Introduction: High diet quality may prevent co-morbidities and reduce health disparities among cancer survivors. This study aims to determine the Healthy Eating Index (HEI)-2020 scores among cancer survivors (CS) and examine sociodemographic characteristics, health behaviors, and self-reported health associated with the index.

Methods: Secondary analysis of cancer survivors 20 years and older, participating in the National Health and Nutrition Examination Survey (NHANES) data (2011 - 2018), a cross-sectional study (n=2172 cancer survivors). Two 24-hour dietary recalls were used to calculate Healthy Eating Index (HEI)-2020 scores (0 - 100), a comprehensive measurement of participant's dietary pattern which adheres to the 2020 - 2025 Dietary Guidelines for Americans. HEI-2020 score was also transformed into grades (A, B, C, D, F), and dichotomized; A grade of 'C' or higher (>70) was interpreted as meeting adequate dietary quality. Multivariate linear and logistic regression was used to examine associations between sociodemographic factors, health behaviors, and general health status with HEI-2020 score.

Results: CS had a mean HEI score of 44.98 (SD 9.67). Women had higher predicted HEI scores than men (B 7.24; 95% CI: 5.78 - 8.69; p<0.00) yet showed statistically significant lower odds of having adequate diet quality compared to men (OR 0.46; 95% CI 0.22 - 0.96; p=0.04). Hispanic (B 6.60; 95% CI: 4.21- 8.99 ; p<0.00) and Non-Hispanic Asian (NHA) CS (B 9.95; 95% CI: 5.39 - 14.52; p<0.00) had higher HEI compared to Non-Hispanic Whites (NHW). Other sociodemographic variables associated with higher predicted HEI included increased age, education, and poverty to income ratio. Former smokers and alcohol users had higher HEI than never smokers or drinkers (p<0.00). In addition, increased HEI was associated with higher odds of reporting good to excellent health (p=0.02). CS who had adequate diet quality had 6.65 times higher odds of reporting good to excellent health compared to their counterparts (p<0.01).

Conclusion: Results indicate low diet quality among adult cancer survivors, with significant differences observed across sociodemographic and lifestyle factors.

190-T

Dietary Interventions for Cancer Survivors and Their Families or Caregivers: A Systematic Review

Xu J, Hoover RL, Woodard N, Leeman J, Hirschey R

Purpose: This systematic review aimed to identify the Behavior Change Techniques (BCT) applied in dietary interventions for cancer survivors and their families or caregivers and synthesize findings on intervention effectiveness in improving dietary and health outcomes.

Methods: We searched three databases (Pubmed, CINAHL, and Scopus), yielding 1472 articles. Two members of our team screened each article to determine eligibility. Intervention studies to improve dietary or health outcomes of adult cancer survivors and their adult families or caregivers were eligible. Data on sample characteristics, intervention content, and findings were extracted from the included reports. Two members of our team independently coded each study using the BCT Taxonomy to identify the BCTs and reconciled discrepancies via discussions. We applied vote-counting and narrative synthesis to summarize intervention effects on dietary and health outcomes.

Results: Twelve studies, six randomized controlled trials and six pre-experimental trials, met the criteria for inclusion. All included studies focused on improving health outcomes; none focused on diet alone. Social Cognitive Theory was the most commonly applied theory. Across the included 12 studies, about one-third of the techniques from the BCT Taxonomy were identified. The most frequently used techniques were instructions on how to perform the behavior, demonstration of the behavior, behavioral practice/rehearsal, problem solving, social support, and self-monitoring of behavior. Ten studies significantly improved health-related outcomes (e.g., quality of life and adiposity). Five studies revealed significant intervention effects on dietary outcomes, including fruit and vegetable intake (n=2), fat intake (n=1), and overall diet quality or eating behaviors (n=3).

Conclusion: Current interventions that enrolled cancer survivors and their families or caregivers have shown significant intervention effects on dietary and health outcomes. Future research should test and identify BCTs that best improve dietary behaviors and seek to gain a greater understanding of the interactions between cancer survivors and their families or caregivers to extend the dyadic approaches that can effectively engage them in healthy diets.

191-T

Feasibility and Acceptability of a Multi-site Adaptive Trial of a Technology-based EHR-Integrated Physical Activity Intervention in Breast & Endometrial Cancer Survivors (MyActivity) at 6-months

Solk P, Hickey BB, Freeman H, Beesch-Carden L, Starikovsky J, Alexander J, Spring B, Barber E, Gradishar W, Agnew M, Schmidt C, Hodgson V, Muller L, Naxi S, Reading J, Hasanaj K, Wang S, Tevaarwerk A, Spencer R, Sesto ME, Gangnon R, Cadmus-Bertram L, Pickett KA, Phillips SM

Purpose: Moderate to vigorous physical activity (MVPA) is associated with improved health and disease outcomes in breast and endometrial cancer survivors, however, most are insufficiently active. Integrating MVPA support into cancer care could increase MVPA and improve outcomes. The objective of this study was to examine feasibility and acceptability of MyActivity, a 6-month MVPA promotion intervention that integrated Fitbit data into the Electronic Health Record (EHR).

Methods: Participants [n=323; Mage=57.4(SD=11.0); 73.7% breast; 25.4% endometrial] received a Fitbit, a weekly message and activity data via the EHR patient portal, and access to a study website. Oncology providers were sent MVPA progress summaries. Feasibility was measured by study recruitment, retention, and adherence rates. Participants completed acceptability questionnaires at 6 months.

Results: A total of 536 (28.3%) of the 1,892 screened met eligibility criteria; 60.3% of those eligible enrolled; 96.6% were retained. Participants reported reading all/nearly all portal messages (69.4%) and wore the Fitbit on 86.4% of study days. The majority were satisfied with the overall study experience (88.6%). Most were satisfied with Fitbit (83.0%) and found it easy to use (85.6%) and link to the EHR (66.3%); 85.6% indicated Fitbit increased motivation. Some reported Fitbit EHR-integration was motivational (53.4%) increased goal attainment (47%) and sharing Fitbit data with providers increased motivation (43.9%). Many indicated portal messages increased motivation (61.9%) and goal attainment (59.0%). Some (41%) found portal activity graphs helpful, but 45.1% never viewed graphs. Most participants (74.1%) and providers (55.3%) mentioned MVPA/MyActivity during appointments; 60% of participants were neutral and 25% were satisfied with discussion frequency and content.

Conclusion: Findings indicate MyActivity may be feasible and acceptable for breast and endometrial cancer survivors. Implementation can be improved based on participant feedback. Future work should further refine MyActivity to enhance integration with oncology care and examine implementation across a broader spectrum of cancer survivors.

192-T

Fruits, Vegetables and Risk of Breast Cancer Subtypes among 23 Cohort Studies in the Pooling Project of Prospective Studies of Diet and Cancer

Riseberg E, Smith-Warner SA on behalf of the investigators of the cohorts in the Pooling Project of Prospective Studies of Diet and Cancer

Purpose: To assess fruit and vegetable intake in association with risk of invasive breast cancer overall and by subtypes defined by estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) status.

Methods. These preliminary analyses included 23 cohorts in the Pooling Project of Prospective Studies of Diet and Cancer (N=1,597,405). Usual diet was assessed at baseline using food frequency questionnaires. Data were provided on ER and PR status by all studies and HER2 status by 12 studies. Associations were assessed using (i) multivariable Cox proportional hazards models to calculate study-specific hazard ratios (HR) and 95% confidence intervals (95%CI) and (ii) random effects models to pool risk estimates.

Results. Median follow-up across cohorts ranged 7-29 years; 68,070 (9,228 ER-; 15,904 ER+ and/or PR+/HER2-, luminal A-like; 2536 ER+ and/or PR+/HER2+, luminal B-like; 1018 ER-/PR-/HER2+, HER2-enhanced; and 2189 ER-/PR-/HER2-, triple-negative) breast cancer cases were identified. Median fruit and vegetable intake varied from 179-551 g/day (~2-7 Ω cup servings/day) across cohorts. Higher fruit intake was associated with lower risk of luminal A-like (highest vs lowest quintile [Q5 vs. Q1] HR=0.93; 95%CI=0.87, 0.99) and triple-negative breast cancer (HR=0.82; 95%CI=0.71, 0.95). Higher vegetable intake (comparing Q5 vs Q1) was associated with lower risk of total (HR=0.96; 95%CI=0.93, 0.99), ER- (HR=0.85; 95%CI=0.78, 0.93), and triple-negative breast cancer (HR=0.85; 95%CI=0.73, 1.00). Rosaceae (stone fruits) excluding berries, berries, Cruciferae (e.g., broccoli), Liliaceae (e.g., onions), green leafy vegetables, and yellow/orange vegetables were each significantly inversely associated with risk of at least one breast cancer outcome, although nonsignificant inverse associations were generally observed. The strongest associations were for berries and ER- (HR per 100 g/day=0.70; 95% CI=0.51, 0.97) and Liliaceae and total (HR per 100 g/day=0.86; 95%CI=0.78, 0.94) breast cancer.

Conclusion. Higher fruit and vegetable intakes are associated with lower breast cancer risk. Associations appear to vary by tumor subtype and cultivars of fruits and vegetables, with strongest associations among hard-to-treat subtypes.

193-T

Increased Symptom Burden Predicts Individuals' Physical Activity Throughout the Day During Chemotherapy for Breast Cancer

Wang SD, Siddique J, Fanning J, Solk P, Starikovsky J, Hasanaj K, Reading JM, Santa Maria CA, Gradishar W, Khan S, Khulkarni S, Phillips SM

Purpose: Physical activity is beneficial during chemotherapy (CT), but CT-related symptoms may be a barrier to physical activity engagement. This analysis examined the influence of momentary symptom burden on subsequent physical activity during CT.

Methods: Females undergoing CT for breast cancer (N=68, Mean age=48.5 (SD=10.4)) were sent four surveys/day to rate their symptoms (affect, anxiety, depression, fatigue, physical function, pain, and cognition) for 10 consecutive days during CT (3 days pre-, day of, and 6 days post-dose) and were asked to wear accelerometers on the hip during waking hours. Each minute of wear time was categorized as sedentary time or light/moderate-vigorous physical activity (PA). Mixed models were used to examine the relationship between the within-person variation of symptom ratings and subsequent minutes of PA in the next two hours while controlling for between-person variation, time of day (quartiles between 4 am-12 am), weekday (vs. weekend), and day post-CT dose (vs pre-CT and day of CT).

Results: 2,443 out of 2,855 total surveys were answered (85.6%; range: 27.5%-100%). 210 surveys (8.6%) did not have two hours of valid wear time following the survey and were not analyzed. With 2233 observations, we obtained approximately 33 observations with valid survey and accelerometer data per participant (range: 9-40). At times when participants had more positive affect compared to their usual level, they subsequently engaged in more minutes of PA ($\leq$=.52, p =.04) in the following two hours. Experiencing more fatigue than usual ($\leq$=-2.89, p<.01), less perceived ability to carry out everyday activities ($\leq$=-2.76, p <.01), and less perceived ability to go for a walk ($\leq$=-3.65, p <.01) were associated with less PA in the following two hours. Within-person differences in depression, anxiety, pain, and cognitive functioning were not significant factors for engaging in PA in the two hours following a survey.

Conclusions: Findings indicate that changes in mood, functional deficits, and physical symptoms associated with CT may be significant catalysts and barriers to PA engagement. Additional micro-temporal analyses of how treatment side effects impact PA could help prevent declines in PA and lead to more effective, tailored interventions.

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Physical Activity and Biomarkers of Breast Cancer Risk in Adolescent Daughters and Their Mothers

Kehm RD, Lilge L, Walter EJ, White ML, Santella RM, Herbstman JB, Perera F, Miller RL, Terry MB

Purpose: Physical activity (PA) may lower breast cancer risk through mechanisms including reduced breast density, oxidative stress, and inflammation. However, data are limited on whether PA impacts these intermediate markers of breast cancer risk consistently across the life course.

Methods: We used cross-sectional data from a cohort of 216 Black and Hispanic families in NYC to examine if PA is associated with breast tissue composition, oxidative stress, and chronic inflammation in adolescent daughters (ages 11-20 years) and their adult mothers (ages 29-55 years). Daughters reported their average hours-per-week (hrs/wk) of unorganized and organized PA (categorized as none, < 2, ≥2 hrs/wk), while mothers reported their average hrs/wk of moderate and strenuous PA (categorized into tertiles of total metabolic equivalents-per-week). We used optical spectroscopy to measure water, collagen, and lipid content in the breast. We measured urinary concentrations of 15-isoprostane F2t ng/ml (adjusted for specific gravity), a sensitive and specific marker of oxidative stress. We measured blood biomarkers of chronic inflammation, including TNF-α, IL-6, and high-sensitivity C-Reactive Protein. We fitted linear regression models adjusted for age, race/ethnicity, and percent body fat. We tested for effect modification by body mass index (BMI).

Results: Daughters who engaged in ≥2 hrs/wk of organized PA versus none had lower water content in the breast (β:-0.41, 95% CI:-0.77,-0.05) and lower urinary concentrations of 15-isoprostane F2t (β:-0.50, 95% CI:-0.95,-0.05). PA was not associated with breast tissue composition or 15-isoprostane F2t in mothers. In daughters with a BMI <25 kg/m2, engaging in ≥2 hrs/wk of unorganized PA vs. none was associated with lower IL-6 (β:-0.54, 95% CI:-1.04,-0.04). In mothers with a BMI <25 kg/m2, being in the highest vs. lowest tertile of PA was associated with lower IL-6 (β:-1.21, 95% CI:-2.05,-0.36).

Conclusions: If replicated in other cohorts, these results suggest that PA may be associated with lower oxidative stress and lower breast density (as indicated by lower water levels in the breast) in adolescence. PA may also be associated with lower IL-6 in both adolescence and adulthood, although associations may depend on body size.

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The Epidemiology of Young Lung Cancer: Interim Analysis of Risk Factors and Genetic Mutations (NCT04640259)

Bittoni M, Harper A, Wu A, Florez N, King J, Erwin R, Addario B, Carbone DP, Gitlitz B, Nieva J

Purpose: Lung cancer (LC) incidence in individuals <50 years is increasing worldwide. Our previous research showed that the majority of young lung cancer (YLC) patients had Stage IV adenocarcinoma (79%) with actionable mutations, and that NSCLC was not associated with usual risk factors (tobacco use, family history of lung and previous cancers). We launched the Epidemiology of YLC study to evaluate YLC using an innovative, virtual case-case study that explores environmental, lifestyle and genetic factors.

Methods: We are actively recruiting individuals with YLC (<age 50) from an established LC registry and social networks. Eligibility criteria include: age>18, documented primary non-small cell LC at <50 years (any stage), documented testing of target mutations, willing to complete a comprehensive 10-module risk factor survey and blood draw. Descriptive statistics were calculated and associations between risk factors and driver mutations were assessed using t-tests and chi-squares.

Results: Preliminary survey data from 110 eligible enrolled individuals show participants to be mostly female (86%), with mean age=37, and having adenocarcinoma (96%), Stage 4 (80%), and mostly ALK (40%) or EGFR driver mutations (36%). Risk factors prior to LC diagnosis included ever having smoked (20%), oral contraceptive (OC) use (88%), allergies during adolescence (40%), antihistamine use (87%) and mean BMI=25.7. In examining risk factors by genetic mutations (EGFR vs ALK), 92% of EGFR and 76% of ALK carriers were female (p=0.04), smoking was higher for EGFR (34%) vs ALK (10%) (p=0.01), but EGFR vs ALK showed fewer allergies (23% vs 55%) (p=0.03), increased antihistamine use (77% vs 58%) (p=0.02) and decreased OC use (4% vs 23%) (p=0.04).

Conclusions: Preliminary data revealed that YLC patients exhibited lower smoking rates, normal BMI, greater antihistamine/OC use, and allergies during adolescence. Several YLC risk factors were significantly associated with EGFR/ALK mutations, including smoking, lower BMI, greater age, female gender, and decreased OC/antihistamine use. These early results suggest that EGFR and ALK-driven YLC may contain a unique set of biological and environmental factors. Further enrollment and assessment of these areas in younger LC populations is forthcoming.

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Weight Management Intentions and Beliefs among Breast and Endometrial Cancer Survivors with Obesity

Reading JM, Solk P, Starikovisky J, Hasanaj K, Wang S, Tevaarwerk AJ, Spencer R, Sesto, Spring B, Barber E, Gradishar W, Agnew M, Schmidt C, Hodgson V, Muller L, Naxi S, Alexander J, Beesch-Carden L, Freeman H, Hickey B, Gangnon R, Cadmus-Bertam L, Pickett KA, Phillips SM

Purpose: Weight gain following diagnosis and treatment of breast and endometrial cancer can negatively influence health outcomes, survival, and risk of recurrence. Little is known about satisfaction, intentions and beliefs about overweight/obesity among cancer survivors.

Methods: Female cancer survivors (N=323, age=57.4+11.0; Body Mass Index [BMI]=31.7+8.9 kg/m2; 73.7% Breast, 25.4% Endometrial) completed a health questionnaire prior to enrolling in a technology-based physical activity promotion intervention. Participants reported satisfaction with their body weight, weight loss attempts in prior year, and beliefs about how obesity/overweight influences cancer. Differences in satisfaction, intention, and beliefs by BMI class [underweight (<18.5 kg/m2), healthy weight (18.5-24.9 kg/m2), overweight (25-29.9 kg/m2), obese (>30 kg/m2)] were analyzed by Chi-square tests.

Results: Most participants were overweight or obese (1% underweight; 21.5% healthy weight; 28% overweight; 49.5% obese). Over half (60%) reported a weight loss attempt within the past year. Most (88.3%) reported dissatisfaction with their current weight and a desire to lose weight. The remainder were either satisfied with their weight (10.7%) or wished to gain weight (1.0%). A higher percent of survivors with obesity (98.7%) and overweight (96.5%) expressed dissatisfaction and desire to lose weight compared to survivors with a healthy weight (57.6%) (p<.001). About 75% of survivors with obesity expressed a desire to lose over 30lbs. Almost half of survivors believed overweight/obesity to have a lot of influence on cancer development (40.9%), progression (49.1%), or recurrence (46.1%); one-fifth were unsure if overweight/obesity influenced cancer development (22.8%), progression (16.7%), or recurrence (25.3%). A significantly greater percent of survivors with obesity (51.7%) and overweight (35.7%) believed that overweight/obesity influenced cancer development relative to those with healthy weight (25%; p<.001).

Conclusions: A majority of breast and endometrial cancer survivors expressed an overall desire to lose weight. Future work should examine how best to address their weight management intentions and concerns and increase their knowledge about the relationship between obesity and cancer outcomes.

197-T

Association between Malnutrition and Patient Reported Outcomes in a Diverse Sample of Adult Ambulatory Oncology Patients

Lopez-Pentecost M, Natori A, Sookdeo VD, MacIntyre J, Calfa CL, Schlumbrecht M, Penedo F, Crane TE

Background: Understanding the interplay between malnutrition and patient-reported outcomes (PROs) is essential to enhance comprehensive care and improve outcomes for cancer patients.

Purpose: To investigate the relationship between malnutrition risk and PROs in ambulatory oncology patients from Sylvester Comprehensive Cancer Center (SCCC).

Methods: Between Oct. 2019 and Aug. 2023, 5,984 patients completed My Wellness Check (MWC), an EHR-integrated PRO assessment. MWC includes five PROMIS computerized tests that assess anxiety, depression, pain, fatigue, physical function, and the FACT-G7 to measure health-related quality of life (QOL). MWC also includes the NUTRISCORE, a validated screening tool to detect malnutrition risk, incorporating weight loss, appetite, cancer type, and treatment modality. A high NUTRISCORE ($\geq$ 5) indicates malnutrition risk and low (<5) no risk. PROMIS and FACT-G7 scores were dichotomized based on clinical cut offs for high symptom burden. The relationship between NUTRISCORE and PROs were examined by Chi2 test and multivariate analysis adjusted for demographic and clinical characteristics.

Results: In the total sample, 85.1% were White (n=5092), 39.1% (n=2341) were Hispanic, mean age was 62.7 years old (SD = 13.6) and 57.3% (n=3431) were male. Hematologic cancers were the most common diagnoses (n=1284, 21.5%) followed by GI malignancies (n=903, 15.1%). Among the 31.2% (n=1868) of patients with high NUTRISCOREs, a significant proportion were Hispanic (42.0% vs. 37.8%, p<0.001) and had a GI cancer diagnosis (24.1% vs. 11.0%, p<0.001). Patients with high NUTRISCOREs had a greater frequency of high levels of anxiety (12.2% vs. 4.7%), depression (14.8% vs. 5.3%), pain (9.6% vs. 2.8%), fatigue (7.3% vs. 1.5%), decreased physical function (18.7% vs. 5.9%), and low HRQOL (24.9% vs. 6.0%) compared to low scores (all p<0.001). Declined physical function (aOR=1.75, 95%CI 1.37-2.24), and low QOL (aOR=2.48, 95%CI 1.93-3.19) were independently associated with high NUTRISCOREs after adjusting for covariates.

Conclusions: Malnutrition risk was associated with significantly less favorable PROs in a sample of diverse adult ambulatory oncology patients. Findings highlight the need for early nutritional interventions to improve patient outcomes.

198

Associations of Food Insecurity with Overall and Disease-Specific Mortality among US Cancer Survivors

Hong YR, Wang R, Case S, Jo A, Turner K, Ross KM

Purpose: Although well-balanced nutritional intake is important for cancer survivors, the impact of food insecurity on health outcomes during cancer survivorship is not well understood.

Methods: Data from the National Health and Nutrition Examination Survey (NHANES 1999-2018) were used to examine the impact of food insecurity on mortality risks among cancer survivors in the U.S. Study participants aged ≥40 years with a history of cancer were included. Food insecurity status was evaluated using the Food Security Survey Module created by the US Department of Agriculture. Mortality data, including deaths from all causes, cancer, and cardiovascular (CVD) disease, was obtained through linkage to the National Death Index until December 31, 2018. Hazard ratios (HRs) of mortality based on food security status (food secure vs. insecure) were estimated using multivariable Cox proportional hazards regression while accounting for sampling weights.

Results: Among 5,032 cancer survivors (mean age = 62.5 years; 58.0% women; 86.2% non-Hispanic White), 596 (8.8%) reported food insecurity. Overall, 1913 deaths occurred (609 cancer deaths and 420 CVD deaths) during the median follow-up of 6.8 years. When adjusted for sociodemographic characteristics (age, sex, race/ethnicity, education, income), food insecurity was associated with a higher risk of overall mortality (HR=1.26; 95% CI=1.00-1.61); however, there were no significant associations between food insecurity and either cancer- or CVD-specific mortality (Ps>0.05). After adjusting for health-related factors (physical activity, smoking, BMI, healthy eating index [HEI]), the association between food insecurity and overall mortality was no longer statistically significant. Regardless of food insecurity, a higher HEI score (i.e., diet quality) and physical activity level were associated with 25%-39% lower risks for cancer- and CVD-specific mortality.

Conclusions: Our findings suggest that food insecurity may impact the overall mortality risk among cancer survivors. Research should investigate whether interventions addressing food insecurity and overall diet quality can help improve cancer survivorship outcomes.

199-T

Associations of Phenotypic Aging with Low Muscle Mass and Mortality in Cancer Survivors

Aduse-Poku L, Karanth SD, Washington C, Yoon A, Yang JJ, Zhang D, Braithwaite D

Background: Aging is one of the leading risk factors for most major chronic diseases; thus, presenting as a major clinical and public health burden. Understanding the effects of phenotypic aging on low muscle mass (LMM) and mortality on cancer survivors can be clinically important.

Objectives: We aimed to assess the associations of phenotypic aging with LMM and mortality among cancer survivors and their matched cohort.

Methods: We used cohort data from the 1999-2006 National Health and Nutrition Examination Survey (NHANES). The Participants included 907 adults surviving for ≥1 year since cancer diagnosis and a matched cohort (by age, sex, and race) without cancer history (N=1814). We calculated Levine phenotypic age using 9 biomarkers and chronological age. LMM was defined by appendicular skeletal muscle mass index < 5.45kg/m2 females and < 7.26kg/m2 for males. We performed a multivariable logistic regression to calculate the adjusted odd ratio (aOR) and 95% confidence interval (CI) for LMM. In addition, we performed a restricted cubic spline analysis to assess the potential non-linear association of phenotypic age with LMM and mortality in cancer survivors.

Results: In our study sample of 907 cancer survivors, the prevalence of LMM was 26.5% (N=240). Phenotypic age ≥75 years was associated with higher odds of LMM compared to ages <50 years amongst cancer survivors (OR=14.40 [95% CI=5.20-39.87]) and in the matched cohort (OR=1.44 [95% CI=1.03-1.86]). Among cancer survivors, phenotypic age (≥75years vs <50 years) was associated with increased risk of all-cause mortality (adjusted HR [aHR], 16.27; 95% CI, 8.95-29.57), and cancer-specific mortality (aHR, 18.93; 95% CI, 9.23-38.82). The association pattern was similar for the matched cohort, although HR was lower for cancer-specific mortality (aHR, 8.20; 95% CI, 4.01-16.77). The effect of phenotypic aging on LMM was stronger in Whites (Whites: aHR[phenotypic age: <65 vs ≥65], 1.84; 95% CI, 1.29-2.63; Blacks: aHR[phenotypic age: <65 vs ≥65], 2.11; 95% CI, 0.47-9.45, Pinteraction=0.008).

Conclusion: In conclusion, we found phenotypic aging was associated with LMM, all-cause mortality and cancer-specific mortality.

200-T

Binge Eating and Weight Control Behaviors in Young Adult Cancer Survivors

Theroux CI, Miller KA, Mason TB

Purpose: Curative treatment for young adult cancer survivors (YACS) can result in late effects to physical and metabolic processes leading to changes in weight, however, few studies have examined binge eating (BE) and unhealthy weight control behaviors (UWCBs) in this population. Given that obesity and weight gain are risk factors for BE and UWCBs, the purpose of this study was to provide insight into BE and UWCBs among YACS.

Methods: Data were from Wave 3 of the Longitudinal Study of Adolescent to Adult Health, a nationally representative study conducted from 2001-2002 among individuals ages 18-28 in the United States. Participants reported demographic characteristics, cancer history, BE, UWCBs, body dissatisfaction, and depressive symptoms. Chi-square analyses were used for frequencies of BE and UCWBs by cancer history. Logistic regression models included depressive symptoms, body dissatisfaction, and dieting as independent variables with BE (loss of control eating, overeating) as dependent variables, and sex as a covariate.

Results: 14,440 individuals comprised the sample (132 with a cancer history, 14,308 without; Mage=21.96, 52.8% female, 21.9% Black, 63.6% White, 16.3% Hispanic, and 83.7% non-Hispanic). YACS had a higher prevalence of all BE symptoms and UWCBs, but only trying to lose weight was significantly different between groups (p=.03). Regression models revealed a significant association between dieting and overeating (p=.02). Trying to lose weight and trying to gain weight was significantly associated with overeating (p<.05). Additionally, dieting was significantly associated with loss of control eating (p=.02), and YACS trying to lose weight and trying to gain weight were significantly more likely to report loss of control eating.

Conclusions: YACS engaged in BE and UWCBs more often than those with no history of cancer, particularly those trying to lose/gain weight. The relationship between UWCBs and BE suggests an actionable pathway for intervention in this population- providers should regularly screen for BE and UWCBs in survivorship care in order to identify and provide appropriate care for these at-risk individuals.

201-T

Comparison of Financial Hardship Associated with Cancer between Medicare Advantage vs. Traditional Medicare Programs

Hu J, Khan M, Case S, Chen X, Revere L, Hong YR

Purpose: Medicare beneficiaries diagnosed with cancer often grapple with significant financial challenges due to the expensive nature of cancer treatments and elevated cost-sharing responsibilities. Despite this, there is limited knowledge regarding the financial hardships faced by those under Medicare Advantage (MA) as compared to those under traditional Medicare (TM).

Methods: We utilized data from the 2016-2017 MEPS Experiences with Cancer Survivorship Supplement, focusing on nationally representative samples of cancer survivors aged 65 or older. Financial hardship was categorized into four distinct groups: material (e.g., difficulty in paying medical bills), psychological (e.g., concerns about settling medical bills), behavioral (e.g., postponing or abstaining from care due to expenses), and out-of-pocket expenditures (OOP; 2017 USD). Using survey design-adjusted analysis, we compared the financial hardships experienced by cancer survivors enrolled in MA versus those with TM.

Results: Among a weighted sample of 8.6 million Medicare beneficiaries with cancer (mean age: 75, 54.1% women, 84.3% non-Hispanic White), 38.6% enrolled in MA plans. Overall, 8.6%, 14.7%, and 21.9% reported any material, psychological, and behavioral financial hardships, respectively. There were no significant differences in financial hardship domains between beneficiaries with MA and TM plans. However, our in-depth analysis indicated that cancer survivors with MA were 43% less likely to delay or skip cancer treatment due to cost, compared to those with TM. On the other hand, they were 71% more likely to delay specialist visits. Although the mean annual out-of-pocket spending was slightly higher for cancer survivors with TM ($1,451) than those with MA ($1,317), this difference was not statistically significant.

Conclusions: While no significant differences were observed in materialized or psychological financial hardships, older cancer survivors with MA plans were less inclined to delay or skip cancer treatments. However, they appeared to face difficulties in accessing specialists compared to those under TM. As MA continues to grow in popularity, it is important to consistently monitor and evaluate the performance and outcomes of Medicare plans for cancer survivors.

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Differences in Employment Outcomes and Food Insecurity Among Colorectal and Breast Cancer Patients by Age

Zonana M, Romo A, Tamimi R, Genkinger J

Purpose: Individuals diagnosed with cancer may be more likely to experience unemployment, job loss, and food insecurity. These hardships may be more pronounced in individuals diagnosed at younger ages; yet few studies have explored this relationship.

Methods: We used data from the National Health Interview Survey for 2011-2018; the analytic sample included 122,326 females and 105,542 males) aged 18-79, of whom 3,501 and 1,146 individuals reported a prior breast cancer and colorectal cancer diagnosis, respectively. Chi-square tests explored differences in employment (employed vs unemployed), labor force participation (employed or unemployed vs not working or looking for work), and food insecurity (food secure or marginally insecure vs highly or very highly food insecure) by age categories (18-49, 50-64, 65-79) in colorectal cancer survivors to those with no prior colorectal cancer and breast cancer survivors to females with no prior breast cancer.

Results: We did not observe statistically significant differences in employment between colorectal cancer survivors and those without colorectal cancer. However, colorectal survivors had lower proportions of labor force participation (19% vs 67%, p<.0001) overall. All colorectal survivors had similar prevalences of food insecurity compared to those with no colorectal cancer but survivors below 65 were more likely to be food insecure (21.78% of survivors 18-49 vs 13%, p=.01; 20% of survivors 50-64 vs 13%, p<.0001). All breast cancer survivors were more likely to be employed than those without breast cancer (p=.0004). This difference was only observed for those 18-49 (97% vs 92%, p=.005). Breast cancer survivors were, however, less likely to be in the labor force (37% vs 62%, p<.0001) overall. All breast cancer survivors had a lower prevalence of food insecurity than those with no breast cancer (10% vs 13%, p<.0001). However, survivors aged 18-49 were more likely to be food insecure (19% vs 15%, p=.02) than those without breast cancer.

Conclusion: While colorectal and breast cancer survivors have similar rates of employment, survivors are less likely to be in the labor force. Challenges with food insecurity are unique by age group and cancer type. These factors may impact survival and need to be studied further.

203-T

Empowerment, Peer Support, and Patient Navigation in Breast Cancer Survivorship: Implications for Community Cancer Control

Sleiman M, Yockel MR, Fleischmann A, Liu M, Young O, Arumani S, Tercyak KP

Purpose: Assess the impact of community cancer control (care satisfaction, peer support [PS], and patient navigation [PN]) on breast cancer (BC) survivors' empowerment (e.g., control, self-efficacy, knowledge/skills, coping).

Methods: Secondary data analysis from N=733 BC survivors participating in community cancer control PS and PN programs, assessing patients, care satisfaction, quality of life, and empowerment.

Results: Patient empowerment was high: most BC survivors felt more informed (66.4%) and confident (71.2%) in managing care. Care quality was also very high (91%): it was recommendable to others (93.9%), helpful (92.7%), informative (92.6%), timely (92.2%), reliable (91.5%), supportive (91.3%), and effective (88.7%). Regarding care satisfaction, survivors felt supported by abundant resources (92.8%) and programs (91.2%), understood (92.0%), and helped (91.6%) by programs. PS (offered to >25%) had high engagement (85.1%). Regarding quality of life, 25.3% were in fair/poor health and 25.6% endorsed frequent mental distress-with an average of 8.3 physically unhealthy days, 8.2 mentally unhealthy days, and 6.7 activity-limited days. Disparities in empowerment were observed as a function of survivors' quality of life: lowest among those with more frequent mental distress (t=-2.13, p<.05), mentally unhealthy days (r=-.083, p<.05), and activity-limited days (r=-.058, p<.05)). These burdens may have influenced survivors empowerment-especially among those without PS (t=3.77, p<.001), who downgraded the quality of PN (t=.60, p<.01), and were least satisfied with community cancer control (t=.57, p<.01). In a multivariable model controlling for mental distress, both care satisfaction (B=.194, SE=.019, p<.001) and PS (B=.610, SE=.151, p<.005) were positively associated with empowerment: survivors who rated their care satisfaction higher, and those who spoke with a peer, felt more empowered.

Conclusions: Community cancer control empowers most BC survivors: addressing disparities, through programs such as peer support, could enhance their effectiveness and particularly for those with poor mental health.

204-T

Examining Coping Strategies as Moderators of Change in Depressive Symptoms: Secondary Data Analyses from COPE-D, a Collaborative Care Intervention for Underserved Individuals with Cancer

Nicholas TB, Hamann HA, Price SN, Halaby L, Trejo JI, Corella F, Weiss K

Purpose: This study aimed to investigate the relationship between coping strategies and changes in depression severity among underserved cancer. The study also sought to explore whether baseline coping strategies predict changes in depression severity and whether changes in coping moderate the association between baseline and follow-up (12 weeks post-baseline) depression severity. The importance of this research lies in identifying potential behavioral targets to improve depression, a significant problem for individuals with cancer, and filling the existing knowledge gap in understanding the mechanisms through which depression treatments work (or don't work) for this population.

Methods: The sample comprised 137 participants who completed both baseline and 12 week follow-up measures within a collaborative care depression management intervention for cancer patients. Coping strategies were measured using a shortened version of the adapted Coping Orientation to Problems Experienced (COPE) Inventory, and depression severity was assessed using the Patient Health Questionnaire-9 (PHQ-9).

Results: Participants reported significant increases in approach-oriented coping (acceptance and emotional expression; t = 6.57, df = 140, p < 0.001) and decreases in avoidance-oriented coping (t = -2.76, df = 192, p = 0.006) over the course of the intervention. Changes in depression severity over the course of the intervention were not predicted by baseline approach and avoidance coping strategies. Changes in avoidance-oriented coping were associated with changes in depression severity (β = 0.2662, p = 0.0304) such that those who maintained or increased avoidant coping over time were less likely to report decreases in depressive symptoms.

Conclusions: Changes in coping strategies, rather than coping strategies at baseline, predicted changes in depression severity throughout the intervention. Increases in avoidance-oriented coping were associated with greater increases in depression severity over time. These findings highlight that reducing avoidant coping may be an especially important intervention focus for this population and underscore the need for further research to understand the intricate interplay between coping and treatment outcomes in this population.

205-T

Feasibility and Effects of a 6-Month Home-based Aerobic and Resistance Exercise Intervention Among Foregut Cancer Survivors

Schleicher E, Rose B, Demark-Wahnefried W, Oster RA, Reddy S, Heslin M, Little RB, Waugaman K, Norian L, Booker G, Wang L, Hotsinpiller W, Rogers LQ

Purpose: Assess feasibility of a 6-month home-based aerobic and resistance exercise intervention for foregut cancer survivors and explore intervention effects on physical activity (PA) and quality of life (QoL).

Methods: Survivors with resectable foregut cancer who planned or underwent surgery within 3 years were randomized to receive remotely delivered exercise training and diet counseling (E+D) or diet counseling alone (D). Weekly videoconference sessions were used by the exercise physiologist to progress aerobic and resistance exercise and by registered dietitians to provide standard medical nutrition therapy. Feasibility was determined using percentage of weekly counseling sessions completed, average weekly resistance exercise relative dose intensity (ExRDI, calculated as the ratio of total actual by total prescribed cumulative doses [sets * repetitions * load], expressed as a percentage), and accelerometer-measured daily steps. QoL measures included Functional Assessment of Cancer Therapy-Hepatobiliary (FACT-Hep), General (FACT-G) and subscores (physical, emotional, and social well-being, additional concerns, and trial outcome index [TOI]). Assessments were taken at baseline, M0; mid-intervention, M3; and post-intervention, M6. Intervention effects were assessed using mixed models repeated measures analysis and Tukey-Kramer multiple comparisons post-hoc test.

Results: Twelve foregut cancer survivors were randomized to either E+D (n=6) or D (n=6); one drop out occurred (E+D group) and no attributable adverse events were reported. The E+D group completed 85% of weekly sessions, while the D group completed 100%. Within the E+D group the average weekly resistance training ExRDI was 97%. Post hoc analyses found those who received the E+D had statistically significant improvements from M0-M6 in average daily steps (mean difference=+1025, p=0.040) and TOI (mean difference=+13.33, p=0.024), primarily due to additional concerns improvements (mean difference=+5.97, p=0.024).

Conclusions: Overall, the remotely delivered exercise training and diet counseling intervention was well-tolerated and feasible within the foregut cancer survivor population. This pilot study shows promising PA and QoL benefits and further exploration in a larger sample size is warranted.

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Impact of Age, Marital Status, Smoking, and Alcohol Consumption on Urinary and Sexual Function in Prostate Cancer Patients Treated with Radical Prostatectomy: A Prospective Cohort Study

Zhang C, Harper A, Imm KR, Grubb III RL, Kin EH, Colditz GA, Wolin KY, Yang L, Sutcliffe S, Khan S

Purpose: To prospectively examine the impact of age, marital status, smoking status, and alcohol use on urinary and sexual function up to 1-year post-radical prostatectomy (RP) among men diagnosed with localized prostate cancer.

Methods: Participants were recruited from the Prostatectomy, Incontinence and Erectile dysfunction (PIE) study. Age (<65 vs. ≥65), marital status (married or living with someone vs. not married), smoking status (ever vs. never), and alcohol frequency (never, monthly, weekly, and daily) were assessed at baseline. Urinary and sexual function scores were assessed using the Expanded Prostate Cancer Index Composite-50 at baseline, 5-weeks, 6-months, and 12-months after RP. Mean urinary and sexual function scores were calculated for each time point by age, marital status, smoking status, and alcohol use.

Results: The analytic cohort consisted of 311 men and 286 men that completed the baseline and follow-up surveys on urinary function and sexual function, respectively. Urinary function: At baseline, married men had significantly higher urinary function scores (p=0.027). For all groups, urinary function scores fell at 5-weeks post-RP and began to improve at 6-months. However older (p=0.044) and unmarried men (p=0.008) had significantly lower urinary function at 6-months post-RP. By 12-months post-RP, urinary functions returned to baseline levels for all groups and there were no significant differences across groups. Sexual function: At baseline, participants that were younger than 65 years of age (p<0.001), never-smokers (p<0.001), and more frequent consumers of alcohol (p=0.021) had significantly higher sexual function scores. Small improvements in function occurred at 6 months post-RP. By 12 months post-RP, sexual function did not recover to baseline levels for any group and was significantly lower for older (p<0.001), unmarried (p<0.025) participants, and ever smokers (p=0.002).

Conclusions: Urinary function scores recover to baseline levels by 12-month post-RP, independent of age, marital status, smoking status, and alcohol use. However, older and unmarried men have a slower recovery. Sexual function scores do not recover to baseline levels by 12-month post-RP for any group and are lower for participants that are older, unmarried, or smoke.

207-T

Moderators of a Web-based Lifestyle Intervention on Diet, Physical Activity, and Weight in Cancer Survivors and their Partners: The DUET Trial

Kaur H, Pekmezi DW, Pavela G, Rogers LQ, and Demark-Wahnefried W

Purpose: To identify who benefits most from web-based lifestyle interventions, this study examined potential moderators of the DUET weight loss intervention on diet quality, moderate-to-vigorous physical activity (MVPA), and weight.

Methods: Baseline and 6-month data from 112 cancer survivors and their partners (56 dyads) enrolled in the DUET web-based weight loss intervention were used. Web-based surveys captured data on age, sex, race/ethnicity, education, employment, income, miles between dyad members, comorbidity (OARS), eHealth literacy (eHEALS), and risk for depression (CES-D). Potential moderators were explored using Mplus (version 8). Diet quality and caloric intake were measured via 2-day dietary recalls. MVPA was assessed using the GLTEQ and accelerometry. Weight was measured on a digital scale.

Results: The sample was 76.8% female, 62.5% non-Hispanic White and had a mean age of 58 years. Relatively few factors were found to moderate the effects of the DUET intervention showing that DUET had similar effects among men and women and with varying levels of comorbidity and eHEALTH literacy. However, analyses indicated that race/ethnicity moderated the effect of the intervention on caloric intake, such that non-Hispanic Whites reported higher reductions in caloric intake compared to non-Hispanic Blacks and others (interaction effect (b3) = -29.97, 95% CI [-58.296, -4.304]). Education moderated the effect of the intervention on weight, with college educated participants achieving greater weight loss compared to less educated individuals (b3 = -1.60, 95% CI [-3.036, -0.450]). Lastly, depression moderated the effect of the intervention on self-reported MVPA, such that participants with higher levels of depressive symptoms showed lower improvements in self-reported MVPA compared to those with lower levels of depressive symptoms (b3 = -0.20, 95% CI [-0.332, -0.029]).

Conclusions: Findings indicated that DUET had greater impact among those who were non-Hispanic White, college educated, and less depressed. These findings corroborate previous studies and call for continued research to better engage those with lower levels of education and minoritized populations, while also recognizing that depression may require ancillary treatment.

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Persistent Opioid Use and Opioid Use Disorder in a Large, Real-World Sample of AYA Cancer Survivors

Betts AC, Wozny J, Rodriguez SA, Beauchemin M, Eary R, Bala BA, Roth M, Murphy CC

Purpose: To estimate prevalence of persistent opioid use and incidence of opioid use disorder (OUD) after completion of cancer treatment among adolescent and young adult cancer survivors (AYAs, diagnosed at ages 15-39 years).

Methods: We identified a sample of AYAs with ≥2 years of follow-up after completion of treatment for invasive cancer using the IBM Explorys Therapeutic Dataset (2010-2020). Explorys is a large, national dataset of longitudinal electronic health record data from integrated health systems and community networks. We matched AYAs to comparators with no cancer history 1:4 on age, sex, year of treatment completion/index year, and region. We estimated prevalence of persistent opioid use, defined as ≥2 opioid prescriptions occurring >30 days and within one year of completing cancer treatment, or ≥4 opioid prescriptions occurring >30 days and within two years. We identified OUD up to 10 years after treatment completion using algorithms combining ICD/procedure codes and prescription data, and estimated cumulative incidence of OUD, overall and by persistent opioid use, using Kaplan-Meier methods.

Results: The sample consisted of 7,973 AYAs and 31,892 non-cancer comparators. One in five AYAs experienced persistent opioid use within one year of completing treatment (20.8%, 95% CI 19.9%, 21.7%), and one in ten had persistent opioid within two years (10.6%, 95% CI 9.9%, 11.3%). Persistent opioid use among AYA survivors was two to three times higher than the comparison group (1-year PR 2.20, 95%CI 2.08, 2.32; 2-year PR 2.77, 95% CI 2.55, 3.01). Two-year persistence was highest among survivors of leukemia (18.9%), gynecologic (16.4%), breast (13.9%), bone (13.7%), and gastrointestinal (13.1%) cancers. Among AYAs, 10-year cumulative incidence of OUD was 3.5% (95% CI 2.8%, 4.3%). Risk was significantly higher among AYAs with persistent opioid use within two years of completing treatment (9.1% vs. 1.8%, p<0.001).

Conclusions: AYA survivors experience excess risk of persistent opioid use and OUD relative to age-matched comparators without cancer. Oncology and survivorship care should implement evidence-based strategies to prevent, screen for, and manage nonmedical opioid use among this developmentally susceptible population.

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Pilot Study: Green Tea Extract and Duloxetine to Mitigate Painful Oxaliplatin-Induced Peripheral Neuropathy in a Rat-Pain Model

Daniel M, Smith EL, Sorge R

Purpose: The purpose of this pilot study was to explore the effects of green tea extract (GTE), alone and in combination with duloxetine (DLX), at mitigating neuropathic pain (as measured by paw withdrawal thresholds) associated with oxaliplatin-induced peripheral neuropathy (OIPN) in a rat-pain model.

Methods: Using a placebo-controlled experimental design, Sprague Dawley rats (n=46) received 4 intraperitoneal oxaliplatin (2mg) injections over 8 days. One week prior to the first oxaliplatin dose, animals began 1 of 6 interventions (Saline, DLX 3mg, DLX 10mg, GTE 100mg, GTE 500mg, DLX 3mg + GTE 100mg) that were administered daily for 4 weeks. Mechanical sensitivity (allodynia) was measured 3 times per week using von Frey testing to determine paw withdrawal thresholds. Measurements began 1 day prior to the start of interventions (baseline) and continued through end of the experiment (Day 35). Groups were compared to their respective baselines, and statistically significant changes were calculated using paired samples t-tests and one-way analysis of variances (ANOVAs).

Results: The saline group showed a significant reduction in mean withdrawal thresholds, denoting more severe allodynia after oxaliplatin (p=0.002). Conversely, all intervention groups exhibited higher mean withdrawal thresholds when compared to saline. However, only the DLX3 (p=0.006)., GTE100 (p=0.009), and DLX3 + GTE100 (p=0.011) intervention groups exhibited mean withdrawal thresholds that were significantly greater than the saline group.

Conclusion: Preliminary findings suggest that GTE may be an effective, non-pharmacologic, non-opioid alternative to DLX for mitigating OIPN-associated pain, warranting further investigation.

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Reduced Risk of Contralateral Breast Cancer after Adjuvant Endocrine Therapy among Patients Treated for Primary Estrogen Receptor-Positive Breast Cancer in a Community Setting

Gierach GL, Curtis RE, Bodelon C, Pfeiffer RM, Veiga LHS, Ramin C, Abubakar M, Weinmann S, Feigelson HS, Bowles EJA, Buist DSM, Vo JB, Berrington de Gonzalez A

Purpose: Estrogen receptor-positive (ER+) breast cancer incidence has continued to increase in the US and accounts for most breast cancer deaths. Clinical trials of ER+ breast cancer patients have demonstrated the efficacy of endocrine therapy in reducing contralateral breast cancer (CBC) risk, but less is known about the magnitude and persistence of therapeutic effects of varying durations (particularly for aromatase inhibitors [AIs]) within real-world community settings.

Methods: This retrospective cohort study included 11,945 patients aged 20-85 years, diagnosed with first primary unilateral invasive ER+ breast cancer (1990-2016; followed through 2017), who survived ≥1 year at three US integrated healthcare systems (Kaiser Permanente Colorado, Northwest and Washington). We evaluated incident CBC risk associated with adjuvant endocrine therapy in multivariable Poisson regression models adjusted for age and stage at diagnosis, diagnosis year, chemotherapy, radiotherapy and study site. Using electronic prescription records, time-dependent treatment courses were evaluated and defined separately for tamoxifen and AIs, allowing for gaps in prescription coverage ≥90 days.

Results: Over a median (range) follow-up of 6 (1-28) years, 433 patients developed CBC. We observed statistically significant reductions in CBC risk with increasing duration for tamoxifen (RR per year of use=0.83, 95%CI: 0.78-0.89) and AIs (RR per year of use=0.73, 95%CI: 0.63-0.84), with the protective effect apparent only for ER+ CBC (n=314 cases: RR per year of tamoxifen use=0.83, 95%CI: 0.77-0.89; RR per year of AI use=0.70, 95%CI: 0.58-0.82). For former AI users, CBC risk reductions were apparent up until three years since last AI use (RR per year of use=0.78, 95%CI: 0.58-1.00). Among former users of ≥1 year of tamoxifen therapy, for whom longer term follow-up data were available, we observed statistically significant CBC risk reductions up to eight years after stopping.

Conclusions: Both tamoxifen and AIs were associated with reduced CBC risk. Findings underscore the importance of endocrine therapy initiation and adherence among ER+ breast cancer survivors and may hold relevance for informing the persistence of long-term chemopreventive effects in real-world clinical management settings.

211-T

Reproductive Outcomes among Male Adolescents and Young Adults with Cancer in Texas, 1995-2016

Wang JS, Betts AC, Lupo PJ, Shay LA, Allicock MA, Pruit SL, Murphy CC

Purpose: Adolescents and young adults (AYAs) with cancer report many reproductive concerns after diagnosis. We examined fertility and adverse birth outcomes among male AYAs diagnosed with cancer in Texas over a 20-year period.

Methods: Male AYAs diagnosed with cancer at ages 15-39 years between January 1, 1995 and December 31, 2015 and live births through December 31, 2016 were identified through the Texas Cancer Registry linked to live birth certificates. We estimated cumulative incidence of first singleton live birth after cancer diagnosis using the Fine-Gray method to account for the competing risk of paternal death. Among live births (n=6,610), we also estimated prevalence of preterm birth (<37 weeks), low birth weight (<2,500 grams), cesarean delivery, and low Apgar score (<7) compared to males in Texas without cancer (n=19,830), frequency matched 3:1 on birth year, paternal age, and paternal race/ethnicity.

Results: Among 42,896 male AYAs diagnosed with cancer, common cancer types were testis (19.8%), lymphoma (16.3%), and gastrointestinal (10.8%). There were 6,610 singleton live births to male AYAs after diagnosis; the median time from diagnosis to live birth was 3.9 years (IQR: 2.2-6.8 years). Five- and ten-year cumulative incidence of live birth after diagnosis was 11.0% (95% CI 10.7, 11.4) and 18.0% (95% CI 17.5, 18.4), respectively, and differed by cancer type, race/ethnicity, and age at diagnosis (all p<0.01). For example, five-year cumulative incidence was lower for males diagnosed with gastrointestinal cancer (6.5%, 95% CI 5.8, 7.3), sarcomas (7.3%, 95% CI 6.5, 8.2) and leukemias (7.6%, 95% CI 6.6, 8.6) compared to thyroid cancer (17.6%, 95% CI 15.9, 19.4), and non-Hispanic Black (6.7%, 95% CI 6.0, 7.6) compared to non-Hispanic White males (11.8%, 95% CI 11.4, 12.2). Prevalence of low birth weight (prevalence ratio [PR]: 1.15, 95% CI 1.06, 1.25) and cesarean delivery (PR: 1.08, 95% CI 1.04, 1.12) was higher in male AYAs with cancer compared to males without cancer. There was no difference in preterm birth (PR: 1.08, 95% CI 0.98, 1.19) or low Apgar score (PR: 1.15, 95% CI 0.89, 1.49) between the two groups.

Conclusions: These findings underscore the importance of oncofertility services and counseling for male in addition to female AYAs.

212-T

Risk of Cardiovascular Diseases in Kidney Cancer: Large, Nationally Representative Population-Based Retrospective Cohort Study

Jung M, Choo E, Deng Z, Li J, Chung BI, Langston M

Purpose: Among kidney cancer (KCa) survivors, risk of cardiovascular disease (CVD) is a major concern of morbidity and mortality. However, research into this has not been previously undertaken. We aimed to assess CVD risk in KCa survivors compared to the general population.

Methods: In this population-based retrospective cohort study, we used the Korean national claims and medical check-up data (2007-2021). We matched KCa survivors and non-KCa individuals using propensity scores in a 1:1 ratio. The following patients were excluded: 1) those aged under 18 years; 2) those with a history of any cancers; 3) those with preexisting CVD; and 4) those with a history of Von Hippel-Lindau, tuberous sclerosis, or polycystic kidney disease. The primary outcome was incident CVD, a composite of myocardial infarction, stroke, atrial fibrillation, heart failure, peripheral arterial occlusion, and venous thromboembolism. We assessed the cumulative incidence of CVD risk at 6 months, 1 year, and 5 years after cancer diagnosis. We applied the Fine and Gray competing risk models to quantify the subdistribution hazard ratio (HR) and 95% confidence interval (CI) for CVD risk, with death as the competing risk.

Results: A total of 40,136 participants were included. Median (interquartile range) of age was 57 (48-65) years, and 27% were women. At 6 months after KCa diagnosis, 262 (1.31%) CVD occurred in KCa survivors, while 102 (0.51%) CVD occurred in non-KCa individuals. Compared to non-KCa individuals, KCa survivors showed a 2.6-fold increased risk of CVD (HR 2.57, 95% CI 2.05-3.23). At 1 year, 355 (1.77%) CVD occurred in KCa survivors, while 219 (1.09%) CVD occurred in non-KCa individuals. KCa survivors showed a 1.6-times increased risk of CVD compared to non-KCa individuals (HR 1.63, 95% CI 1.38-1.93). After 5 years, 988 (4.92%) CVD occurred in KCa survivors, while 884 (4.41%) CVD occurred in non-KCa individuals. KCa survivors had an 11% higher risk of CVD (HR 1.11, 95% CI 1.02-1.22).

Conclusion: Compared to the general population, KCa survivors showed a higher risk of developing CVD. Our findings highlight the need for prevention and management of CVD among KCa survivors. Further research with detailed information on tumor characteristics and treatments is warranted.

213-T

Symptom Assessment in an Early-Stage Lung Cancer Survivorship Clinic: Outcomes, Usage, and Referral Characteristics

Price SN, Willis AR, Hensley A, Hyson J, Sohl SJ, D'Agostino RB, Farris M, Petty WJ, de Hoyos A, Weaver KE, Wentworth S

Purpose: The number of early-stage lung cancer survivors (ES-LCS) is increasing, yet few programs address their specific needs (e.g., disproportionate symptom burden, low supportive care uptake). We integrated electronic patient reported outcome measures (ePROs) to assess care needs among ES-LCS in our dedicated lung survivorship clinic. We report on ePRO usage, outcomes, and referrals to inform lung survivorship care.

Methods: ES-LCS were referred to the survivorship clinic upon cancer treatment completion. Prior to their orientation visit, patients were sent ePROs (PROMIS-29 profile), which they could complete at home or in-clinic before their visit. Patient characteristics, ePROs, and referrals are described. We used chi-square and t-tests to examine ePRO completion by patient characteristics and compare ePROs to a national sample of ES-LCS.

Results: From January 2020-March 2023, 315 ES-LCS received orientation visits, of whom 237 (75%) completed ePROs (155 [65%] in clinic; 82 [35%] at home). Female patients were less likely to complete ePROs (p=.005); patients who were male (p=.009), age 65+ (p=.04), Black/African American or other race (p<.001), and rural (p=.02) were more likely to complete ePROs in clinic vs. at home. Patients reported equivalent or lower symptom burden and better social functioning compared to the general population of ES-LCS, except in the areas of sleep disturbance and physical function, which were clinically and statistically worse (>3 point difference, p<.0001). Rates of moderate-severe problems were poor physical function (42%), pain interference (22%), anxiety (12%), fatigue (12%), poor social function (10%), sleep disturbance (9%), and depression (8%). Referrals to supportive care services were low; <5% tobacco cessation, <3% pulmonology, <3% pain clinic, <2% psychosocial oncology, <1% pulmonary rehab, and <1% physical therapy.

Discussion: The in-clinic ePRO option was especially important for older, male, rural, and non-white patients. While ES-LCS generally reported low symptom burden, referrals to supportive care were disproportionate to needs in the areas of physical functioning, pain interference, and psychological distress. Future work should explore reasons behind low referral rates and increase supportive care uptake.

214-T

The Effect of Mediterranean Diet Adherence on the Relationship between Cognitive Performance and Cancer Survivorship

McLeod AP, Oddo VM, Tussing-Humphreys LM

Purpose: To determine the association of Mediterranean Diet adherence with cognitive performance by cancer survivorship.

Methods: Using cross-sectional data from the 2011-2012 and 2013-2014 cycles of the National Health and Nutrition Examination Survey, we used adjusted linear regression to estimate whether the association of Med Diet adherence with cognitive performance varied by cancer history. Med Diet adherence was defined as the aMed score which gives 1 point for intake above the sample-specific median for healthful food groups and 1 point for intake below the sample-specific median for unhealthful food groups (range 0-9). Cognitive performance was measured via several variables: (1) number correct on the Digit Symbol Substitution test which assesses processing speed, attention, and working memory, (2) number of words learned after a short and (3) long delay on the word learning and recall modules from the Consortium to Establish a Registry for Alzheimer's disease (CERAD) which assesses learning and short term memory, (4) intrusions on the CERAD, and (5) number correct on the Animal Fluency test which assesses executive function. Covariates included age, race, gender, education, income, sleep, and physical activity.

Results: Among the 2,450 participants who had dietary and cognitive data, 385 were cancer survivors. Participants mean age was 69.2 years (SE=0.1) and the most common cancer reported was breast cancer (24%). The average aMed score was 3.46 (SE=0.1) in survivors versus 3.5 (SE= 0.3) in participants without a cancer history. Past cancer history was not associated with cognitive performance. Conversely, Med Diet adherence was associated with better cognitive performance for all test scores ($0.001 < p < 0.02$) except intrusions on the CERAD ($p=0.23$). The association of Med Diet adherence with cognitive performance did not vary by cancer history ($0.12 < p < 0.48$ for aMed*CancerHx interaction term). However, cancer survivors did not benefit cognitively from Med Diet adherence ($p > 0.05$ for all cognitive scores), whereas those without a cancer history did ($p < 0.05$ except for CERAD intrusions).

Conclusions: Mediterranean diet adherence was positively associated with cognitive performance in those without a past history of cancer but not in cancer survivors.