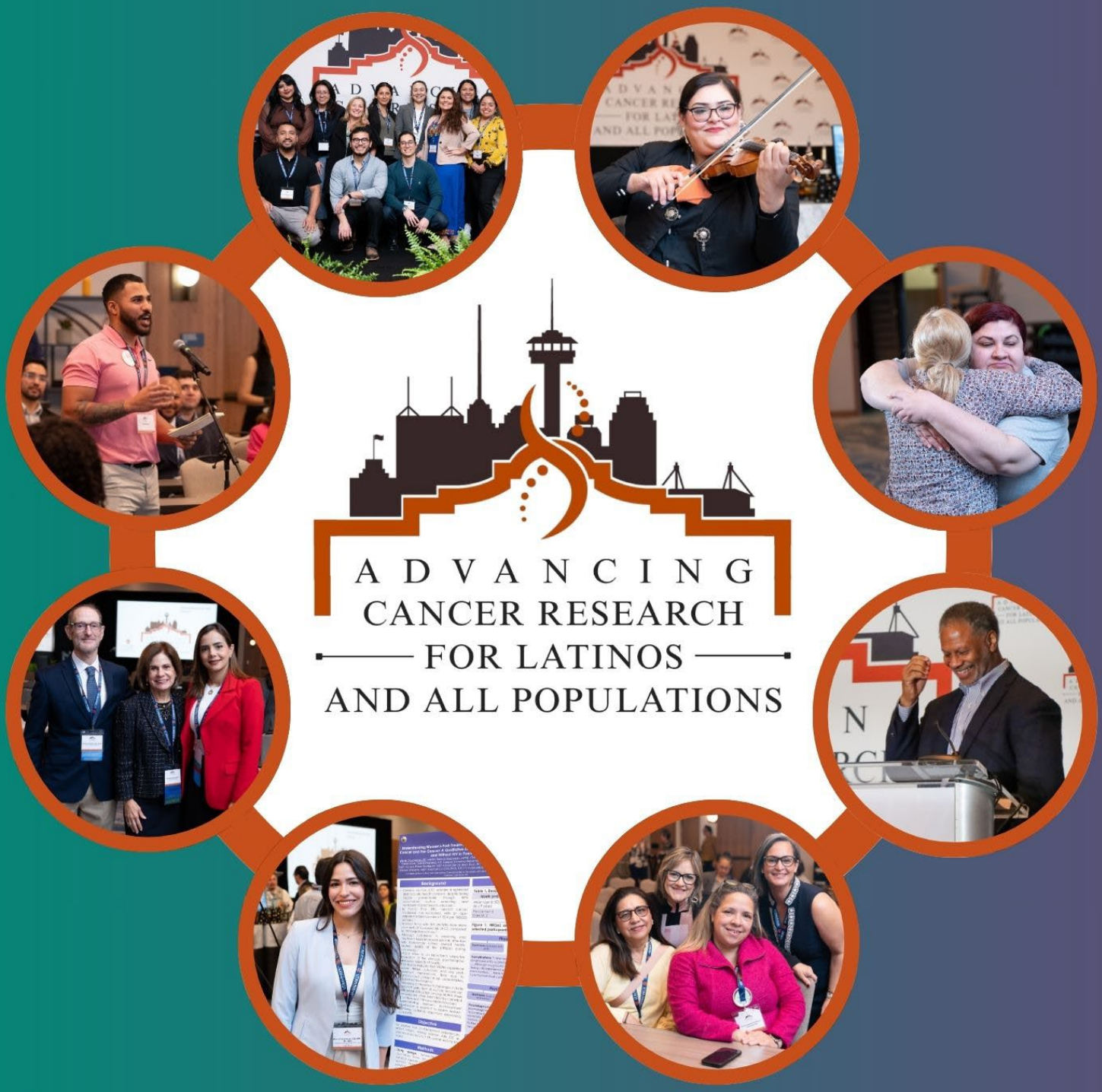
ADVANCING CANCER RESEARCH FOR LATINOS & ALL POPULATIONS

2026 CONFERENCE PROCEEDINGS



UT Health San Antonio
Institute for Health Promotion Research

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About the Conference Proceedings

Advancing Cancer Research for Latinos and All Populations: 2026 Conference Proceedings

Dr. Amelie G. Ramirez of the *Salud America!* national health communication program and the Institute for Health Promotion Research at UT Health San Antonio partnered with the Mays Cancer Center at UT Health San Antonio to create the Advancing Cancer Research for Latinos and All Populations (ACRLP) biennial conference series.

The ACRLP Conference on Feb. 18-20, 2026, in San Antonio, Texas, welcomed over 350 prominent researchers, physicians, healthcare professionals, patient advocates, and students from across the globe to address cancer among Latinos and all people. Over 50 experts shared the latest advances and innovations.

Conference sponsors included: Genentech, Bristol Myers Squibb, Gilead, Revolution Medicine, Natera, AstraZeneca (platinum); Blood Cancer United, Menarini Stemline, Eli Lilly (gold); National Hispanic Health Foundation, American Cancer Society, STEAM Network (silver); University of New Mexico, Sylvester Comprehensive Cancer Center (amigos).

Scientific planning committee members included: Chair, Amelie G. Ramirez, DrPH, UT Health San Antonio; Co-chair, Edward J. Trapido, ScD, FACE, Louisiana State University; Co-chair, Marcela Mazo Canola, MD, UT Health San Antonio; Barbara Segarra-Vázquez, DHSc, MT, University of Puerto Rico; Alejandro Recio Boiles, MD, FACP, University of Arizona; Maria Constanza Camargo, PhD, National Cancer Institute; Janeth Sanchez, PhD, National Cancer Institute; Gerardo Colon-Otero, MD, Mayo Clinic, Florida; Katherine Y. Tossas, PhD, MS, Virginia Commonwealth University; Mariana C. Stern, PhD, University of Southern California; Martin Mendoza, PhD; Matthew P. Banegas, PhD, MPH, University of California, San Diego; Patricia I. Moreno, PhD, University of Miami; Yamilé Molina, PhD, University of Illinois; Laura Fejerman, MSc, PHD, UC Davis; Mary Jimenez, Community Advisory Board, Mays Cancer Center; and Sandi Stanford, Alamo Breast Cancer Foundation.

The following “Advancing Cancer Research for Latinos and All Populations: 2026 Conference Proceedings” summarizes presentations and panels. Discussion covered new research advances on clinical best practices, effective community interventions, the non-medical drivers of health, and professional training to reduce cancer in Latinos and all people.

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Introduction

Variability of cancer outcomes based on population

Cancer rates and outcomes vary widely based on race/ethnicity, gender, country of origin, location, heritage, language spoken, socioeconomic status, age, family history, and more. For example, although Latino individuals have lower overall rates of cancer nationwide, rates of stomach and liver cancer are twice as high as non-Hispanic White individuals, and the rate of cervical cancer is 36% higher. [Winn] Because of this variability, intentional steps must be taken to ensure cancer research and initiatives target all populations. A greater understanding of even the most niche populations will lead to better outcomes for all.

Cancers that affect children show variable rates based on race/ethnicity and language proficiency. Acute lymphoblastic leukemia (ALL) incidence, for example, is 1.4 times higher in Latino children than non-Hispanic White children, and 2 times higher in Latino adults. One novel variant in the *IKZF1* gene has a risk allele frequency of about 20% in Latino populations, but less than 1% in non-Hispanic Whites. [de Smith] Furthermore, compared to non-Hispanic White English-speaking patients, Hispanic Spanish-speaking acute myeloid leukemia (AML) patients were both significantly more likely to have high acuity at presentation and higher ICU-level care needs. Hispanic English-speaking patients did not show this difference, supporting the hypothesis that speaking a language other than English is a risk factor for early morbidity. [Ruiz]

Almost two thirds of cancer cases are diagnosed in people aged 65 and older. However, there is increasing heterogeneity among older adults with cancer, including variable age, race/ethnicity, language, and comorbidities. [Schiaffino] Approximately 25% of cancer patients aged 65 and older currently identify as members of racial and ethnic minority populations. [de Celis] Older cancer patients also tend to have chronic comorbidities. Improving coordination between oncology and chronic disease care could improve outcomes in certain subgroups. [Casteneda-Avila]

Cancer outcomes among women are also variable. Cervical cancer incidence rates in the United States from 2017-2021 were 9.6 per 100,000 for Hispanic individuals and 7.0 per 100,000 for non-Hispanic White individuals. [Ortiz] In fact, Latinas are 2 to 3 times more likely to die from cervical cancer than the general population. [Guzman] Certain genetic mutations were more common among Latina breast cancer patients, especially those with Indigenous American ancestry. [Ziv] While most cases of breast cancer are in women older than 45, the incidence of cancer in young women is increasing, especially in the past 20 years. [Mazo Canola]

For the first time in history, young women are getting lung cancer more often than men. The incidence of lung cancer in young Hispanic and Asian women is increasing. Young lung cancer patients are also more likely to experience financial toxicity than cancer patients older than 50. [Florez]

The most common cause of hepatocellular carcinoma (HCC) varies by race and nation of origin. Among Black individuals, hepatitis C is the leading cause of HCC for both men and women; however, among Black men born in Haiti, the leading cause is hepatitis B. Fatty liver is the most common cause for individuals from Central and South America, but Cuban and US-born Mexican men or Puerto Rican men and women experience hepatitis C as a leading cause. [Carvajal-

Carmona] Only 30.4% of Black HCC patients are diagnosed at an early stage, compared to 54.4% of White patients and 46.8% of Hispanic patients. [Jones]

Factors that affect cancer rates

Non-medical drivers of health play a major role in cancer rates and outcomes. For example, increased stress is associated with poorer cancer outcomes. [Winn] Financial toxicity is a major cause of stress, and is rampant among Hispanic cancer survivors, 32% of which report having problems paying medical bills in the past 12 months, compared with only 21% of non-Hispanic White survivors. [Edward] One contributor to financial hardship is low health insurance literacy, which is the lack of knowledge to understand, choose, and use health insurance. Patients with low health insurance literacy are more likely to experience financial hardship, lower health-related quality of life, lower adherence to medications and healthcare services, delays in care, and greater psychosocial distress. [Yanez]

Clinical trial participation is low across all populations. Among 1,200 Commission on Cancer programs representing 70% of all cancer cases diagnosed in the US, only 7.1% of cancer patients participated in a clinical trial. [Guerra] Latino, Asian, and American Indian/Alaska Native (AI/AN) populations have particularly low rates of clinical trial participation. [Arora] Older adults are also less represented in clinical trials because of strict eligibility criteria, accessibility and transportation issues, and financial toxicity. These factors are compounded in non-White populations. [de Celis] Although the Latino population has a cancer prevalence of 7%, it comprises only 3% of trial participants. [Chavez Mac Gregor]

Studies have found that certain genetic markers are associated with cancer risk, cancer outcomes, and even heavy smoking. [Pérez-Stable] However, barriers to genetic testing exist. In Latin America, barriers include unequal access to tests and therapies, insufficient funding, lack of appropriate insurance billing codes for next-generation sequencing (NGS), limited acceptance of the benefits and impact of molecular testing, and fragmented administrative and reimbursement processes. [Raez]

A review of the National Cancer Database revealed that Latino prostate cancer patients have higher prostate-specific antigen (PSA) levels, higher Gleason scores (which indicate aggressive prostate cancer), and higher metastatic rates than White patients. After analysis of Latino patients by country of origin, Mexican patients were found to have the highest PSA levels, the highest metastatic rates, and among the highest Gleason scores. [Recio Boiles]

Misinformation is another factor that may affect cancer care and outcomes. A study of social media use during the coronavirus epidemic revealed that Latino individuals were 57% more likely to use social media platforms as a primary source of information about the coronavirus compared with non-Hispanic individuals. Latino social media users were also less able to identify health misinformation than non-Latino White individuals. [Rivera]

Over the past few years, there has been a $1 trillion cut to Medicaid funding, which will result in an estimated 20 million uninsured individuals, with an 80 hour/month work requirement to reapply. The Affordable Care Act (ACA) tax credits have also been cut, which will cause premiums to double

according to the Center on Budget and Policy Priorities, resulting in another 3.8 million uninsured per year from 2026 to 2034. [Rios]

Environmental change can also affect cancer outcomes. In fact, mortality has been shown to be 20% higher among lung cancer patients whose facility was impacted by a hurricane during their radiation treatment, compared to similar propensity score matched patients treated at the same facility when no disasters occurred. [Nogueira] Farmworkers are exposed to pesticides, UV radiation, silica dust, diesel exhaust, and contaminated water and soil. These exposures are compounded by other risk factors such as obesity, alcohol use, and tobacco use, resulting in a high cumulative burden. [Chicas] Firefighters are also exposed to combustion byproducts released from burning insulation, wiring, plastics, and metals. Many of these byproducts are highly carcinogenic. [De La Rosa]

In light of the variability in cancer outcomes experienced by various populations based on race and ethnicity, age, sex, location, and more, the 2026 *Advancing Cancer Research for Latinos and All Populations* (ACRLP) conference brought together experts from across the US and Latin America to consolidate knowledge and provide recommendations for improving these outcomes. What follows here are synopses of each presentation, outlining the main ideas put forth by each presenter.

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KEYNOTE

Moving Forward and Staying the Course

Keynote: Moving Forward & Staying the Course

Dr. Robert A. Winn, MD, is the former Director and Lipman Chair in Oncology at VCU Massey Comprehensive Cancer Center.

Science for a purpose

Dr. Winn began by praising recent scientific and medical advances, but also by emphasizing that those advances need to make a difference for everyday people in everyday communities. About 1 in 2 men and 1 in 3 women are diagnosed with cancer in their lifetime. Much of the information about risk, and information about advances in medicine, have failed to reach more rural populations, and even some of their primary care providers. This lack of information, coupled with established non-medical drivers of health, have created different health outcomes among populations based on location.

Lessons from Chicago

Dr. Winn and colleagues have studied variations in health outcomes based on location in the Chicago area. In a certain wealthy area in central Chicago, for example, life expectancy is 85 years. However, just 4 miles west of that area, life expectancy drops to 69 years. Eight miles further away and to the South, in Englewood, life expectancy is 55 years. Factors like gun violence, which can be impacted by non-medical drivers of health, certainly play a part in this discrepancy. Other drivers include social conditions and policies, institutions like the surrounding healthcare system and community based organizations, and patterns of social organization such as neighborhood stability and social networks.

Dr. Winn and colleagues recently studied the correlation between cancer levels and stress in 50 wards in Chicago. This was done through measuring the cortisol in hair, through partnerships with Chicago-area barbershops. This cooperation was achieved as a result of the trust built through lengthy and targeted community outreach and engagement. Unsurprisingly, increased stress was associated with poorer outcomes. Furthermore, the study found that African American men that lived in wealthy wards had lower levels of stress than those living in poorer wards.

A partnership with the Chicago Police Department allowed Dr. Winn and colleagues to cross-reference stress and health data with a neighborhood violence index. Interestingly, the data revealed that high lung cancer rates were correlated with areas with high rates of homicide. In African American men, differences in gene expression were observed based on neighborhood violence scores, with higher violence correlating with higher expression of tumor growth promoting genes.

Those living in wards with higher violence, who had higher cortisol levels, also had a higher preponderance of “cold” tumors, or tumors with a low inflammatory signature and an absence of CD8+ T-cells. These low inflammatory tumors do not respond as effectively to standard cancer treatment, indicating that many cancer patients from areas of high neighborhood violence would be less responsive to standard therapies.

Cancer rates among Latino communities

These lessons may be applicable to many other areas in the United States. In Bexar County, home to San Antonio and the Advancing Cancer Research for Latinos and All Populations Conference, cancer incidence and mortality rates are higher among White and Latino individuals than the national average. Although Latino individuals have lower overall rates of cancer nationwide, rates of stomach and liver cancer are twice as high as non-Hispanic White individuals, and the rate of cervical cancer is 36% higher.

A way forward

Dr. Winn closed by commenting on the tendency for medical professionals to look primarily to genetic causes to explain differences in health outcomes. Although genetic contributions to health outcomes are important, the contribution of environment, stress, and non-medical drivers of health cannot be overstated. The combination of genetics and environment must be considered in concert with each other in order to fully understand health outcomes.

Furthermore, Dr. Winn emphasized the importance of performing science without fear. Citing examples of brave scientists throughout history, in the Jim Crow era, and today, Dr. Winn noted the effectiveness and long-term success of performing the necessary science that will do the most good, regardless of outside circumstances.

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PANEL A
PEDIATRIC CANCERS

Silent Crisis: Why Children Are Falling Through the Cracks of Pediatric Cancer Care in America

Genetic Variation and Population Differences in the Risk of Childhood Acute Lymphoblastic Leukemia (ALL)

Dr. Adam de Smith is a genetic epidemiologist and Associate Professor at City of Hope.

The epidemiology of ALL

Dr. de Smith began by discussing the epidemiology of ALL, which has an increased risk among individuals of Latino ethnicity. ALL is the most common cancer in children, comprising approximately 30% of childhood cancer with over 3000 new cases each year. ALL is a cancer of white blood cells, affecting B-cells in about 80% of cases and T-cells in about 20%. Although recent advances have led to cure rates of up to 90%, ALL remains a leading cause of childhood mortality. Survivors of childhood ALL face lifelong treatment-related morbidities and increased risk of mortality including from secondary cancers. Therefore, prevention remains an essential goal.

The first hit mutation for childhood ALL often occurs prenatally. However, not all individuals with these mutations develop ALL, indicating both a genetic and environmental component. A greater understanding of genetic and environmental modifiers is needed to develop prevention strategies for childhood leukemia.

ALL incidence is 1.4 times higher in Latino children than non-Hispanic White children, and 2 times higher in Latino adults. This incidence among Latino populations is primarily driven by an increase in B-cell ALL. Furthermore, incidence of ALL is rising among this population across all age groups. Latino and Black ALL patients also have inferior survival outcomes when compared with non-Hispanic White ALL patients. Latino patients with higher proportions of Indigenous American ancestry have even worse outcomes.

Genetic drivers of ALL

Dr. de Smith and colleagues have developed a polygenic risk score for ALL based on research that established the association of certain alleles with ALL risk. One novel variant in the*IKZF1* gene has a risk allele frequency of about 20% in Latino populations, but less than 1% in non-Hispanic Whites. The precise impact of the *IKZF1* risk allele on ALL risk has not yet been determined, but it is likely associated with stalled B-cell development.

In addition to their research on *IKZF1*, Dr. de Smith and colleagues tested the association between genetic ancestry and case-control status at known ALL risk loci. Results showed that not only is the *IKZF1* risk allele highly correlated with global and local Indigenous American ancestry, but many other variants associated with ALL are as well, including *GATA3, ARID5B,* and others. In fact, Indigenous American ancestry was positively associated with ALL risk at 14 of 20 ALL risk loci. Admixture mapping,

which uses admixed populations to detect loci where ancestry proportions differ between cases and controls, was also used to identify 4 significant loci: 2 known loci (*IKZF1, ARID5B*) and 2

previously unknown loci *(MGAT5,* and *RAB11A)*. These previously unknown loci warrant further investigation.

In order to advance beyond the genome-wide association studies performed in the United States, expansion studies have been initiated by Dr. de Smith and colleagues in populations in Mexico and Guatemala. This expansion is being done to investigate the impact of known ALL risk loci and the performance of the polygenic risk score in Latino populations outside of the US, potentially discovering novel genetic associations in these populations.

Dr. de Smith closed the presentation by outlining the goals of current ALL research. The hope is to incorporate genetic data to screen for ALL and other cancers at birth. However, more information is needed to understand both genetic risk and non-genetic environmental factors in order to attain precision prevention. Furthermore, genetic research and analysis must be expanded outside of the US in order to accomplish a more complete understanding of these factors.

Language and Outcomes in Pediatric Cancer Care

Dr. Jenny Ruiz, MD, MSCE, is Assistant Professor of Pediatrics at the University of Pittsburgh School of Medicine.

Language and leukemia

Dr. Ruiz began by stating that the incidence of acute lymphoblastic leukemia (ALL) is highest in Hispanic children, and emphasized the urgent need to investigate intersecting social drivers of health such as language and English proficiency. Over 27 million individuals in the United States have limited English proficiency (LEP), defined as a self-rated ability to speak English less than "very well". Furthermore, 63% of those with LEP speak Spanish. Finally, over 26% of children in the US are in immigrant households.

Certain laws and policies address language access. For example, the Civil Rights Act prohibits recipients of federal funding from discriminating against individuals because of race, color, or national origin. Section 1557 of the Affordable Care Act also reinforces language services as a fundamental right. Specifically, language services are required to be free of charge, accurate, timely, and to protect the privacy and the independent decision making of the individual with LEP. Importantly, these services cannot rely on staff other than qualified interpreters, and Section 1557 prohibits the use of minors or accompanying adults as interpreters or translators, except in emergencies.

However, research has found that oncologists provide leukemia treatment details to only 65% of parents who speak a language other than English, compared with 71% of English-speaking parents. Families of leukemia patients who speak a language other than English also ask 50% fewer questions to their healthcare providers than English-speaking families. [Simon 2003]

A review of pediatric phase I/II interventional cancer clinical trials with information on CT.gov from 2010 to 2023 revealed that 96% (418/438) of studies did not explicitly report language requirements. Furthermore, when the Children's Oncology Group (COG) language working group surveyed clinicians and research coordinators at COG affiliated institutions, 47% of respondents reported that recruiting persons who speak languages other than English to clinical trials was somewhat or very difficult. [Beauchemin 2024]

Qualitative insights

In response to these difficulties, Dr. Ruiz and colleagues performed qualitative research to understand Spanish-speaking caregivers' communication experiences with the medical team at the time of diagnosis and to identify strategies to improve communication. Interviews were conducted by a bilingual research team, and participants were Spanish-speaking caregivers of children with cancer diagnosed in the last 10 years. Themes that emerged throughout the interviews included variable access to an interpreter, the emotional response to diagnosis, divergent comfort levels with asking questions, and the therapeutic relationships. Caregiver recommendations for improving communication included bilingual clinicians, in-person interpreters, detailed explanations, and perspective taking.

Quantitative evidence

Dr. Ruiz and colleagues also undertook a quantitative research study with 2 goals: to examine the association between preferred language and high acuity (defined as ≥2 organ systems requiring ICU-level care during the first 72-hours of initial admission) in children with acute myeloid leukemia (AML) at presentation, and to examine the association between preferred language and intensive care unit (ICU)-level care during first cycle of therapy in children with AML.

Compared to non-Hispanic White English-speaking patients, Hispanic Spanish-speaking AML patients were both significantly more likely to have high acuity at presentation and higher ICU-level care needs. Hispanic English-speaking patients did not show this difference, supporting the hypothesis that speaking a language other than English is a risk factor for early morbidity. More research on interpreter use and family-centered communication for cancer patient families that speak a language other than English is needed.

These studies show that, although language access is mandated by law, varying outcomes based on language and other social drivers of health exist in pediatric oncology. Providers should strive to partner with medical interpreters for families who speak a language other than English at every clinical encounter along the cancer care journey.

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PANEL B
AGING AND CANCER

Navigating Cancer and Culture: Transforming Geriatric Oncology Care for Patients

Tailored Care for Older Adults with Cancer

Dr. Enrique Soto Perez de Celis, MD, PhD, is Associate Director for Global Oncology at the University of Colorado Cancer Center.

Challenges faced by older adult patients with cancer

Dr. Soto began by noting that older adults face many disparities when accessing high-quality cancer care, especially those who are members of underrepresented populations. Conducting a geriatric assessment is essential to understanding patients and providing personalized care. Shared decision making should include patient preferences and priorities to generate better therapies and better evidence to treat older patients with cancer from all backgrounds.

The world is aging. Data from 2015 revealed that countries located in Europe and North America had a higher proportion of residents aged 65 and older. However, by 2050 the entire world will have higher populations of older residents, with much of this change occurring in low- and middle-income countries which are less prepared for geriatric cancer care.

Almost two thirds of cancer cases are diagnosed in people aged 65 and above. In the United States, around 50 to 60 million people are 65 years of age or older, a number that is predicted to grow to nearly 90 million by 2060. Of those, 25% currently identify as members of racial and ethnic minority populations. Racial and ethnic minority populations 65 years of age or older are predicted to increase by 83% in the next 15 years. In the US, there are higher rates of poverty among African American, Hispanic, and Asian individuals aged 65 and above compared with non-Hispanic White geriatric populations.

Ageism is a major problem in healthcare. Ageism is defined as age-based discrimination, which can come from the healthcare system, from physicians, from the patients themselves, and from society in general. Clinical trials tend to have very low participation rates of older patients in trials of novel therapies. Even in high income countries like the United States, there is a lack of personnel with geriatric training.

The geriatric assessment

Improved care of older adult patients with cancer depends on an improved understanding: who they are, what they can do, and how we should treat them. Patient preferences, values, and the trade-offs of treatment in decision making must also be understood. Importantly, enrollment of older adults from underrepresented populations is vital, both in clinical trials and in implementation initiatives across the cancer care continuum.

One way to obtain relevant information is through a geriatric assessment. A geriatric assessment goes beyond the typical assessment of a patient with cancer that includes age, stage of cancer, comorbidities, organ function, and functional status. A geriatric assessment includes a more in-

depth functional status, analyzing cognition, social support, nutrition, finances, medications, and emotional status to obtain a more complete view of the patient. In this way, a treatment plan can be based on the patient rather than on the tumor. A geriatric assessment can identify supportive care needs, identify competitive risks, predict the risk of treatment-related adverse events, and help with shared decision making. In 2018, the American Society of Clinical Oncology (ASCO) began publishing guidelines for geriatric oncology, including the recommendation of the ASCO Practical Geriatric Assessment, which is self-administered and can be completed in less than 15 minutes.

In order to better understand older adult patients with cancer, Dr. Soto and colleagues performed a study of older patients with cancer in the Los Angeles area who were starting chemotherapy. Even though 61% of participants reported that staying alive as long as possible was the most important outcome for them, almost 40% chose other priorities over survival. In fact, 83% said that death was preferable to losing their cognitive abilities.

Older adults in clinical trials

Older adults are underrepresented in clinical trials because of strict eligibility criteria, accessibility and transportation issues, and financial toxicity. These factors are compounded in non-White populations. In 2014, only 17% of people included in breast cancer cooperative group studies were 70 and above. In order to rectify this problem, researchers must select relevant endpoints for older adults, enroll vulnerable and frail older patients across populations, and include geriatric assessment tools.

Dr. Soto concluded the presentation by stressing that older adults face many disparities when accessing high-quality cancer care, a difficulty even more pronounced in underrepresented populations. Geriatric assessments, however, are a powerful tool in understanding the needs of older adult patients with cancer, and are essential to providing personalized care. Patient preferences and priorities should always be included in evaluating the advantages or the benefits of care. Finally, clinical trials must include not only older patients, but also older patients across all backgrounds.

Optimizing Cancer Care Delivery for Older Latine Patients

Dr. Melody K. Schiaffino is Associate Professor in the Department of Radiation Medicine and Applied Sciences at the University of California San Diego School of Medicine, and member of the CHEER and Moores Cancer Center.

The heterogeneity of older cancer patients

Dr. Schiaffino began by discussing the increasing heterogeneity among older adults with cancer, including variable age, race/ethnicity, language, and comorbidities. In light of this heterogeneity, improved methods to identify age-related risk and improved assessment for optimal care are

needed. Geriatric cancer risk is multi-level and cross-disciplinary. The US population is aging, increasingly representing different backgrounds, and becoming more clinically complex, while cancer treatment has become more complicated. Further, the healthcare system reinforces disadvantages at each stage in the continuum while unintentionally constraining patient preferences.

Tools for assessment

One potent tool for understanding older cancer patients is the use of a geriatric assessment, which is recommended by the American Society of Clinical Oncology (ASCO) guidelines. However, geriatric assessments still lack widespread use, and are largely used only in cancer centers with geriatric oncology service lines.

Another potential tool is the use of the medical record itself. While the structured portion of clinical notes may not mention age-related risk factors, unstructured clinical notes often contain this information, as well as comments on nutrition, function, and language barriers. Due to the length and complexity of unstructured clinical notes, manual analysis is resource intensive. However, scalable artificial intelligence (AI)-driven abstraction is possible.

Artificial intelligence and unstructured notes

Dr. Schiaffino and colleagues recently undertook a study with 2 goals: to identify age-related risk factors in electronic medical record (EMR) notes, and to identify and address deficits that could lead to over- or under-treatment. The study also sought to develop a natural language processing (NLP) pipeline for unstructured EMR notes and to assess the feasibility of this approach for a health system scale-up.

The study included 135 patients aged 65 or older with a diagnosis of head and neck cancer. Medical records for these patients included structured data (age, diagnosis date, etc.) and unstructured data, which included progress notes, oncology notes, geriatrics consults, and discharge summaries. Overall, 47% of participants were over 75 years of age, 74% were male, 22% were Latino, and 17% spoke Spanish.

Each study domain was assigned a binary yes/no classification. Domains were designed to evaluate nutrition (appetite loss, dysphagia, weight loss), functional status (falls, frailty, mobility limitations), and language barriers (limited English proficiency, interpreter use, family interpreter, communication barriers, cultural needs). The AI model was trained, and results were compared with the gold standard, manual abstraction by trained reviewers. Three different models were evaluated for precision and recall, F1 score, and area under the receiver operating characteristic curve (AUC): a logistic regression model, a random forest model, and a large language model.

Although all of the models showed good AUC and F1 scores in the area of nutrition, these high scores may be an indication of overfitting, meaning the algorithm performed well on this specific dataset but may not generalize to a broader population. F1 scores in the areas of functional status

and language barriers were more realistic. This study represents a first step in demonstrating that AI can be used to help optimize care for older adults with cancer by flagging areas that require screening and potential intervention.

The study also highlighted a greater burden in the areas of functional status in Latino and Asian participants. Furthermore, Latino participants had a higher burden in the area of language and culture. Meanwhile, English speaking participants had fewer conversations about function with their healthcare provider.

The future of geriatric cancer care

Further steps for this project include the need for external validation, including the integration of AI with structured EMR data, and larger and more heterogeneous data sets. Findings should also be linked to outcomes such as hospitalization and treatment interruption. Finally, implementation trials are needed for both algorithmic dissemination and geriatric assessment deployment.

Every older adult experiences a cancer diagnosis differently. Unstructured EMR text contains critical age-related risk information which can be used in the absence of a geriatric or other structured assessment. AI enables the scalable abstraction of these unstructured notes in a way that supports geriatric and oncology initiatives.

UT Health San Antonio Institute for Health Promotion Research

UT Health San Antonio Mays Cancer Center

SESSION 1

Rising Tide of Infection-Related Cancers

Advancing the Prevention of HPV and Cervical Cancer

Dr. Ana Patricia Ortiz is lead investigator and interim director of the Division of Cancer Control and Population Sciences, and associate director of the Office of Cancer Research Training and Education Coordination at the University of Puerto Rico Comprehensive Cancer Center.

HPV and cervical cancer

Dr. Ortiz began the presentation by explaining that human papillomavirus (HPV) is the most common sexually transmitted infection worldwide, and persistent infection with certain types of HPV is established as a necessary cause for several cancers, including cervical cancer. There are approximately 600,000 new cases of cervical cancer each year, making it the fourth most common cancer worldwide. Furthermore, cervical cancer causes around 350,000 deaths annually, with approximately 90% of those deaths occurring in low- and middle-income countries.

Cervical cancer rates based on race and location

Differences in cervical cancer incidence between high-income and low- and middle-income countries are not attributable to differences in HPV infections. Instead, countries with the highest cervical cancer incidence and mortality lack high-quality cervical cancer screening, timely treatment, healthcare access, and HPV vaccine programs. Women with HIV are also 6 times more likely to develop cervical cancer compared to those who are HIV negative. In order to eliminate cervical cancer, the World Health Organization (WHO) has a goal of fully vaccinating 90% of girls with the HPV vaccine by the age of 15, screening 70% of women using a high-performance test by the age of 35 (and again by the age of 45), treating 90% of women with pre-cancer, and treating 90% of women with invasive cancer.

U.S. cervical cancer incidence rates from 2017-2021 were 9.6 per 100,000 for Hispanic individuals and 7.0 per 100,000 for non-Hispanic White individuals. Additionally, late-stage incidence rates were 4.7 per 100,000 among Hispanic individuals and 3.3 per 100,000 among non-Hispanic White individuals. Cervical cancer mortality rates per 100,000 were 2.4 and 2.1 respectively.

Factors that may be contributing to the differences in cervical cancer incidence and mortality between Hispanic and non-Hispanic White US populations include individual, sociocultural, and system-level factors. Individual factors may include a lack of awareness, certain behaviors, health practices, low-income, low levels of acculturation, low educational attainment, and immigration status. Sociocultural factors may include cultural beliefs and social norms. System-level factors may include a lack of access to health services, being uninsured, limited transportation and childcare, and restrictive work policies to attend health appointments.

Tools for cervical cancer prevention

The primary tool for cervical cancer prevention is the HPV vaccine. In the US, only 5 states or territories have HPV vaccination school entry requirements, including Puerto Rico. In 2024, only

approximately 60% of adolescents received the recommended doses of HPV vaccine, well short of the 90% WHO goal.

Secondary prevention of cervical cancer involves screening. In 2020, 74.7% of US Hispanic women between the ages of 21 and 65 had received a pap test within the 3 previous years, compared with 77.6% of non-Hispanic White women. Some barriers to screening include lower income and education, job concerns, a lack of transportation, limited childcare, morbid obesity, and risky sexual behaviors.

HPV self-sampling for screening may help overcome these barriers. Several studies have shown concordance between HPV testing in the clinic and self-sampling. In 2024, the US Food and Drug Administration (FDA) approved self-sampling to be used in health settings, and in 2025, the FDA approved the first at-home self-collection device for cervical cancer screening.

Follow-up care

After screening, however, follow-up care is needed. Hispanic women face certain barriers to follow-up care after an abnormal cervical cancer screening result. In a study of Hispanic individuals in Texas who received an abnormal cervical cancer screening result, only 65.6% received follow-up care within an optimal diagnostic interval. A qualitative study among Latina women reported personal and systemic barriers to follow-up care, including anxiety and fear of a diagnosis, scheduling of appointments interfering with work and/or child care, and inadequate communication about appointments. In a clinic-based study in Puerto Rico, only 52.5% of women achieved guideline-compliant colposcopy after an abnormal cervical cancer screening.

Dr. Ortiz closed by emphasizing the preventability of cervical cancer, and the need for continued strengthening of cervical cancer prevention strategies, as well as research and education to achieve cervical cancer elimination goals in all US states and territories. Although HPV vaccination rates among Hispanic women are similar to the general population, lower cervical cancer screening rates have been reported. Continued research and public health interventions among Hispanic populations is essential for the development of evidence-based targeted cervical cancer prevention and control strategies for this high-risk population.

Rising Tide of Infection-Related Cancer in Latino Communities: A Focus on Gastric Cancer

Dr. Luis G Carvajal-Carmona is Associate Vice Chancellor and Professor of Biochemistry and Molecular Medicine at the University of California, Davis.

Gastric cancer among Latinos

Dr. Carvajal-Carmona began by highlighting the leading cancer sites for cases and deaths among Latinos in the US. Certain cancer sites, such as liver and intrahepatic bile duct, stomach, kidney and renal pelvis, ovary, and uterine cervix, rank much higher in Latino populations than in White populations. The incidence ratio of Latino patients to White patients for liver cancer is 1.71 for men and 1.31

for women. The mortality ratio for stomach cancer is 2.03 for men and 2.53 for women. These sites of higher incidence and mortality tend to be associated with an infection.

Gastric cancer risk factors vary by location, with cardia cancer more common among White individuals, those with gastroesophageal reflux disease (GERD), and male individuals. Non-cardia tumors are more common in minority populations and in those with *Helicobacter pylori (H. pylori)*. Non-cardia tumors are also associated with socioeconomic factors, occurring more frequently in lower socioeconomic populations. In a study of gastric cancer in California, a higher proportion of Latino patients were diagnosed at an early age (<50), had diffuse tumors, and were diagnosed with an advanced stage of cancer compared with White patients.

Genetic variation in Latino gastric tumors

Although approximately 10% of gastric cancer cases exhibit familial clustering, only 1-3% are attributable to a known hereditary syndrome. Recent findings from Dr. Carvajal-Carmona and colleagues have shown that a significant proportion of gastric cancer patients harbor pathogenic variants in susceptibility genes such as PALB2, BRCA1, BRCA2, and RAD51c. A family history of cancer was associated with higher mutation prevalence, suggesting that multi-organ cancer predisposition genes should be included in germline testing panels for patients with gastric cancer.

In another study analyzing multiple biopsies from 36 Latino patients in Mexico and Colombia found high intratumor heterogeneity in gastric cancer. Determining whether mutations are clonal (present in all tumor cells) or subclonal (present in only a subset of tumor cells) is important for understanding tumor evolution and guiding treatment strategies. However, only about 40% of tumors in Latino patients harbor a druggable target. Tumors with clonal mutations associated with microsatellite instability (MSI) are often responsive to immunotherapy. In contrast, genomically stable tumors are more difficult to treat and are closely associated with diffuse histology, which is more common in this population. These tumors are typically immunologically "cold," meaning they are less likely to respond to immunotherapy, and they also tend to respond poorly to conventional chemotherapy.

In an unpublished study of about 200 tumors from Latino patients, Dr. Carvajal-Carmona and colleagues used low-pass whole-genome analysis, revealing that 57.8% had the genomic stability subtype. New gastric cancer drivers were also identified in Latino patients. When comparing these data with those from The Cancer Genome Atlas (TCGA), which represents largely White and Asian populations, significant differences in driver frequency were observed, a finding that could impact therapeutic decisions. Many mutations in Latino gastric tumors are not druggable.

Ancestry and gastric cancer

Among Latino gastric cancer patients, Dr. Carvajal-Carmona and colleagues found that those with higher Indigenous American ancestry had a higher prevalence of diffuse, genomically stable tumors and a higher frequency of CDH1 mutations, the most important driver of these tumors (Carvajal-Carmona, unpublished).

Dr. Carvajal-Carmona concluded the presentation by emphasizing the importance of studying the Latino population to understand the genetic selectivity of gastric cancer and to identify new genetic

drivers. Gastric tumors from Latino patients exhibit extensive genetic variation, with important implications for therapy. More work is needed to understand why Latino gastric tumors are enriched for aggressive molecular subtypes and to further elucidate the influence of American Indian ancestry on somatic genetics in the population.

Multilevel Determinants that Contribute to Barriers to HCC Screening and Disparities in Outcomes

Dr. Patricia D. Jones is Associate Professor of Clinical Medicine, Associate Chief of Clinical Affairs in the Division of Digestive Health and Liver Diseases, and Population Science Lead at the Sylvester Comprehensive Cancer Center and University of Miami Miller School of Medicine.

HCC by the numbers

Dr. Jones's presentation discussed the barriers to hepatocellular carcinoma (HCC) screening, and variances in HCC outcomes. Primary liver cancer is the sixth most frequently occurring cancer worldwide, and the third most common cause of cancer mortality. Primary liver cancer includes HCC and cancer of the intrahepatic bile duct, with HCC representing approximately 85% of the 41,000 to 42,000 new cases of primary liver cancer cases diagnosed each year in the US. The 5-year relative survival rate for cancer of the liver and intrahepatic bile ducts is only 22%.

Causes of liver cancer

Most individuals who develop liver cancer have some form of liver disease, which has multiple causes: alcohol-related liver disease, steatotic liver disease, viral hepatitis, autoimmune liver disease, and genetic liver disease. Liver disease patients are at risk for developing cirrhosis, the strongest risk factor for HCC. In fact, 85-95% of patients with HCC have cirrhosis.

From 1999 to 2021, the percentage of liver cancer cases caused by hepatitis B decreased, while the percentages of cases caused by hepatitis C and alcohol related liver cancer increased, and the percentage of cases caused by steatotic liver disease nearly doubled. The incidence of liver cancer varies by race, with American Indian/Alaska Native individuals having the highest risk, followed by Hispanic individuals. The risk in all minority groups is higher than the risk in non-Hispanic White individuals.

The most common cause of HCC also varies by race and nation of origin. Among Black individuals, hepatitis C is the leading cause of HCC for both men and women, however, among black men born in Haiti, the leading cause is hepatitis B. Fatty liver is the most common cause for individuals from Central and South America, but Cuban and US-born Mexican men or Puerto Rican men and women experience hepatitis C as a leading cause.

Dr. Jones and colleagues have received funding to establish the Genetic and Environmental Risk of Non-Alcoholic Fatty Liver Disease (NAFLD)-related HCC in All Latinos (GENIAL). In general, Latinos

have not been represented adequately in genome-wide association studies (GWAS). GENIAL seeks to assess the interplay between genetic factors, NAFLD phenotype, demographic factors, clinical factors, non-medical drivers of health, cultural factors, and environmental factors, and how they contribute to HCC.

HCC screening

Patients with liver disease or cirrhosis should receive a straightforward screening for HCC every 6 months; the screening involves an ultrasound of the liver and a blood-based biomarker test called alpha fetoprotein (AFP). However, only between 6% and 25% of HCC patients have received screening and diagnosis. The largest barrier to screening is undiagnosed liver disease. Screening rates are lower in black individuals, those who are uninsured, and residents of neighborhoods with higher levels of poverty.

One recently studied intervention to try to improve HCC screening involved mailed outreach and patient navigation. HCC surveillance was performed in 23.3% of outreach + navigation patients, 17.8% of mailed outreach-alone patients, and 7.3% of usual care patients. However, even these improved surveillance rates are very low.

Stage at diagnosis

The global HCC BRIDGE study, a longitudinal cohort study of 18,031 patients, found that Barcelona Clinic Liver Cancer (BCLC) C (advanced) stage at diagnosis was the most common stage in North America, Europe, China, and South Korea with 42%, 51%, 55%, and 53% of patients presenting at that stage, respectively. BCLC C stage indicates that a patient has metastatic disease, either distant or with involvement of some of the large veins leaving the liver. Japan and Taiwan, however, each have national surveillance programs; 70% of patients from Taiwan and 73% of patients from Japan are diagnosed with very early stage disease.

Only 30.4% of Black patients are diagnosed at an early stage, compared to 54.4% of White patients and 46.8% of Hispanic patients. Black race is also significantly associated with treatment delays compared to White race. Compared to urban residents, rural and suburban residents are 12% and 8% less likely to receive treatment, respectively.

Dr. Jones closed by quoting Angela Davis, who said, “I am no longer accepting the things I cannot change. I am changing the things I cannot accept.” The factors that contribute to variable outcomes in HCC must be addressed, including insurance status, education attainment, socioeconomic status, transportation, access, and other factors. Patient navigation programs and coordination of care can help with these barriers, building relationships between the navigator, the patient, and the caregiver.

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SESSION 2

Too Young, Too Soon: Unmasking the Rise of Early-Onset Cancer

Breast Cancer in the Young

Dr. Marcela Mazo Canola is Assistant Professor of Medicine in the Division of Hematology and Medical Oncology at the Mays Cancer Center at University of Texas (UT) Health San Antonio.

Epidemiology of young onset breast cancer

Dr. Mazo Canola began by discussing the multiple spheres of decision making that young breast cancer patients must face: chemotherapy, endocrine therapy, local therapy, genomics, psychosocial functioning, sexual health and body image, role functioning, and fertility and premature menopause. These represent a significant burden in individuals who may not be ready to make those decisions, or who do not have the support system needed to navigate those decisions.

In 2022, 27,136 new cases of breast cancer were reported in women younger than 45 years of age in the United States. While most cases of breast cancer are in women older than 45 years old, the incidence of cancer in young women is increasing, especially in the past 20 years. Breast cancer continues to be the most commonly diagnosed cancer in women and is the second leading cause of cancer related mortality in women.

Breast cancer in the very young is most commonly defined as breast cancer diagnosed in women under 40 years of age, a population that represents approximately 5-10% of all breast cancer cases in the US. By 2040, new cases are projected to rise by 47.8% from 2022, underscoring an urgent global challenge in breast cancer prevention and control. However, breast cancer screening is not typically recommended for women under 40 years of age.

Causes and subtypes

Young onset breast cancer is caused by a variety of factors, including genetic and familial factors, reproductive events, breast tissue characteristics, and lifestyle and environment. The clinical presentation for breast cancer in the young is unique. First, patients younger than 30 often harbor a germline mutation. Also, young onset breast cancer often presents with higher grade disease, more nodal involvement, and bigger tumors. Clinicians are also less likely to order imaging for young women when they present with symptoms.

Breast cancer is divided into 4 molecular subtypes. Luminal A and luminal B subtypes represent about 70% of cases, while triple-negative represents 15% of cases and HER2-enriched subtypes represent 10-15% of cases. Young breast cancer patients, however, present with a higher proportion of aggressive subtypes, including luminal B. Furthermore, rates of luminal B breast cancer are increasing in Latina and Black women in the US.

Young-onset breast cancer exhibits distinct genomic and molecular features. First, *TP53* mutations, which are a hallmark of triple-negative breast cancer, are more common in young women. Luminal

A tumors in young women also have increased alterations in *GATA3* and *ARID1A*, which may be linked with more estrogen receptor sensitivity.

Germline mutations are substantially more common in young breast cancer patients, with 11-24% carrying pathogenic variants, most frequently in *BRCA1/2* (14%). The prevalence of *BRCA* mutations in the general US population is estimated to be 1 in 400, excluding women of Ashkenazi Jewish descent in whom the prevalence is 1 in 40. Estimates of the prevalence of *BRCA1/2* germline mutations in Latinas range widely (0.7% to 42%) depending on factors like family history, cancer type, and testing methods, with variations observed across different countries of origin.

In 2013, the Clinical Cancer Genetics Community research network evaluated the prevalence of *BRCA* mutations in the Southwestern US. A 25% prevalence of *BRCA1/2* mutations was observed among Mexican American patients with breast cancer. Large rearrangement mutations, not detectable on standard sequencing, represented a significant proportion of the carriers.

Management considerations

Young onset breast cancer also presents with unique management considerations. Bilateral mastectomy, for example, does not offer a survival benefit in this population. Instead, extensive surgeries are linked with worse sexual health and body image. Young patients are also less compliant with hormonal therapy due to the burden of side effects.

Dr. Mazo Canola ended by emphasizing the need for more research into the multiple factors that cause young onset breast cancer. Furthermore, multi-disciplinary teams are needed to care for these patients. Both patients and providers need more education into the complexities of this condition.

Liver and Colorectal Cancers: Experience Treating Latinos

Dr. Sukeshi Patel Arora is Professor of Medicine, Paige Johnson Distinguished Chair in Oncology, Vice Chief for Clinical Affairs in Medical Oncology, and Leader of the Gastrointestinal Malignancies Program in the Divisions of Hematology/Oncology and Medicine at the Mays Cancer Center at UT Health San Antonio.

Colorectal cancer in younger adults

Dr. Arora began the presentation by discussing the epidemiology of colorectal cancer in younger adults. In contrast to decreasing colorectal cancer incidence in older adults, rates have been increasing in adults 20 to 39 years of age since the mid-1980s and in those 40 to 54 years of age since the mid-1990s. From 2011 to 2019, rates increased by 1.9% per year in people younger than 50 years and in those aged 50 to 54 years. Colorectal cancer is now the leading cause of cancer death for adults under 50 in the U.S.

Increased rates of colorectal cancer in younger adults may be due to lifestyle factors, environmental factors, hereditary risk factors, and/or the microbiome. Modifiable risk factors include obesity, poor diet, inactivity, smoking, and alcohol use. Nonmodifiable factors may include chronic conditions such as inflammatory bowel disease, as well as family history and hereditary disorders like Lynch syndrome. Up to 15%-30% of these cancers have pathogenic germline variants, indicating a hereditary predisposition to developing cancer. Colibactin, a genotoxic bacterial toxin, is 3 times more common in the microbiome of patients under the age of 40 with colorectal cancer compared to older patients with colorectal cancer.

Colorectal cancer screening guidelines call for individuals at average risk of this type of cancer to be screened starting at age 45. Individuals 45 to 49 years of age make up 50% of diagnoses under the age of 50, so increased access to prevention and screening services may prevent disease as well as death. Increased public awareness about the roles of genetics and family history in colorectal cancer may also help increase screening rates. Clinician awareness is also vital in avoiding delays in diagnosis.

Certain substances have been shown to prevent colorectal cancer. Aspirin and nonsteroidal anti-inflammatory drugs, for example, have been well studied for this purpose. However, side effects such as stomach ulcers may prevent long-term use. The active compound in green tea, Epigallocatechin gallate (EGCG), has also shown benefits in general cancer prevention. Finally glucagon-like peptide-1 (GLP-1) receptor agonists may exhibit anti-inflammatory and anti-proliferative effects in colorectal cancer cell lines through inhibition of the phosphoinositide-3 kinase (PI3K)/Akt/mammalian target of rapamycin (mTOR) pathway.

HCC in younger adults

Dr. Arora's presentation also involved a discussion of hepatocellular carcinoma (HCC). In the U.S, after decades of increase in HCC incidence, rates of liver cancer have stabilized in men but continue to rise in women by about 2% per year. HCC had an overall 5-year survival of <12% in 2011. Although 5-year survival for HCC has increased over the last few years, it is still only 22%. Incidence rates among Black and Hispanic men and women have increased in recent years, and are predicted to continue to increase.

Latino, Asian, and American Indian/Alaska Native (AI/AN) populations are underrepresented in HCC clinical trials. Latinos represent the fastest-growing subpopulation in the US and have the second-highest incidence rate of liver cancer in the US (behind AI/AN individuals). However, Latino participants represent only approximately 10% of patients in phase I or II clinical trials for liver cancer in the US in the past 2 decades. This rate of clinical trial participation has not appreciably changed over the past 20 years.

The treatment of HCC involves unique patient and disease considerations: patient frailty and performance status, comorbidities such as bleeding risk and autoimmune disorders, whether the patient has had a transplant, liver function, patient preferences and quality of life, and goals of care.

A recent study by Dr. Arora and colleagues evaluated racial and ethnic differences in HCC care at a Latino-rich National Cancer Institute (NCI)-designated cancer center. The average age at diagnosis was lower among Hispanic and Black patients compared with non-Hispanic White patients, while the average age for Asian patients was even lower. Delays in treatment initiation were most pronounced in Asian and Black patients, while Hispanic patients experienced moderate delays compared with non-Hispanic White patients.

Dr. Arora's presentation highlights the need for more patient and provider education about prevention and screening for colorectal cancer and HCC. Differences in treatment and outcomes based on race also warrant more research. Finally, initiatives are needed to ensure participation in clinical trials reflects all races and ethnicities.

Too Young, Too Soon: Unmasking the Rise of Early-Onset Lung Cancer

Dr. Narjust Florez is Co-Director of the Young Lung Cancer Program, Associate Director of the Cancer Care Access Program, Director of the Smoking Cessation Program, Thoracic Medical Oncologist at the Dana-Farber Cancer Institute, Assistant Professor of Medicine at Harvard Medical School, and Associate Editor at JAMA Oncology.

Early-onset lung cancer in women

Dr. Florez began by stating that for the first time in history, young women are getting lung cancer more often than men. However, young women are less likely to be offered tests for lung cancer diagnosis and may be ignored when presenting to a provider with complaints that could suggest a lung cancer diagnosis. Instead, symptoms are often attributed to anxiety.

A recent study found that over one third of lung cancer patients reported never using tobacco products. Although 41% had a direct family history of lung cancer, most individuals (89%) reported never having discussed the possibility of developing lung cancer with a healthcare provider. In fact, most participants' (63%) healthcare providers never recommended lung cancer screening. Nearly one third (31%) of lung cancer patients felt that they experienced delays in diagnoses despite seeking medical care.

A unique presentation

Early-onset lung cancer is defined as a diagnosis of lung cancer before the age of 50 and has a unique presentation. Early-onset lung cancer is more common in women, especially those of Hispanic or Asian/Pacific Islander descent. It also occurs primarily in non-tobacco users. The most common histology in early-onset lung cancer is adenocarcinoma, and there is a higher likelihood of late-stage diagnosis compared with older-onset cases. Targetable alterations and brain metastases are also more common.

Lung cancer is the fourth most common cancer in adults younger than 50 years of age, and the number one cancer killer in this population. Among early onset lung cancer patients, 52-91% of patients have targetable mutations. The most common single nucleotide variants are TP53 (57.1%), KRAS (15.5%), EGFR (21.4%), STK11 (10.1%), and SMARCA4 (7.7%). The most common fusions or skipping variants are ALK (14.6%), RPS6KB1 (3.3%), ROS1 (3.3%), RET (2%), and MET (2%). Furthermore, uncommon mutations are more frequent in young patients compared with patients over 50 years of age. An ongoing study performed by Dr. Florez and colleagues aims to evaluate the feasibility of an EGFR plasma cell-free DNA (cfDNA) test as a tool for early cancer diagnosis among non-tobacco-using Asian and Hispanic populations at risk for EGFR non-small cell lung cancer.

Young lung cancer patients experience improved overall survival compared to older patients. They are also more likely to receive aggressive treatments, multimodal intervention, surgical resection for oligometastatic disease, and consolidation radiation. However, younger patients are more likely to experience paclitaxel induced neuropathy, platinum-based nausea and emesis, and long-term adverse events such as irritable bowel syndrome (IBS), dental damage, and early menopause. Young women in particular are more likely to experience immune-related adverse events than older patients. Because young patients are more likely to receive aggressive treatments, it is vital to understand optimal survivorship in this population, which may be more likely to suffer in long-term follow-up.

Financial toxicity and fertility considerations

Young lung cancer patients are also more likely to experience financial toxicity than cancer patients over 50 years of age. In a recent study performed by Dr. Florez and colleagues, 40% of early onset lung cancer patients reported not having any or only a little money available to pay for lung cancer treatments. Furthermore, 35% felt considerably financially stressed, and 32% reported that their cancer had been a significant financial hardship. Half of the participants reported significant worry about future financial problems. The study also found that young patients were more likely to be diagnosed at a disruptive time in their lives than older patients, and had higher rates of depression, anxiety, and poor quality of life, particularly among women.

Young female lung cancer patients also face the complexity of fertility and how it is impacted by a lung cancer diagnosis. Most young women with lung cancer do not receive fertility counseling, and fertility preservation procedures are underutilized. If diagnosed while pregnant, over 75% will be advised to terminate the pregnancy.

The incidence of lung cancer in young Hispanic and Asian women is increasing. Early onset lung cancer patients are more likely to have targetable mutations than patients over 50 years of age, and are more likely to receive multi-modal and aggressive treatment. These patients also experience greater burdens involving long-term adverse events, financial toxicity, and fertility complications. Healthcare providers and researchers must listen to and believe these young women, taking into account the unique considerations of fertility, family, and youth.

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PANEL C
SURVIVORSHIP

Juntos en La Lucha: Building a Future of Survivorship

The Hidden Costs of Care: Tackling Financial Toxicity in Oncology

Dr. Jean Edward is Associate Professor and PhD Program Director for the College of Nursing at the Markey Cancer Center and the University of Kentucky.

Financial toxicity and Hispanic cancer survivors

Dr. Edward began by defining financial toxicity as the financial burden and distress associated with the high costs of cancer care. Approximately 30% of cancer survivors experience financial toxicity. Overall, cancer survivors spend about 20% of their income on out-of-pocket expenses, and are 2.65 times more likely to file for bankruptcy.

In 2020, the median annual household income for Hispanic individuals in the U.S. was $55,321, which is only 73% of the median annual income for non-Hispanic White individuals and lower than the overall median of $67,521. Younger Hispanic survivors, age 18 to 64, spend an average of $616 every year in out-of-pocket medical expenses (not including monthly premiums), while Hispanic survivors over the age of 65 spend an average of $1,131 in out-of-pocket medical expenses.

Financial toxicity is rampant among Hispanic cancer survivors, 32% of which report having problems paying medical bills in the past 12 months, compared with only 21% of non-Hispanic White survivors. Approximately 70% worry about paying future medical bills, compared with 51% of non-Hispanic White survivors.

Financial toxicity involves three overlapping domains: psychological response, or the feelings of distress, concern, and anxiety; material conditions, including out-of-pocket expenses, missed work, reduced or lost income, medical debt, and bankruptcy; and coping behaviors, including skipping medications, foregoing treatment, delayed or missed visits, or having to choose between food and treatment.

Some existing screeners that are used to assess financial toxicity include the National Comprehensive Cancer Network's Distress Thermometer, the Comprehensive Score for Financial Toxicity, and Legal Barriers to Care developed by Dr. Edward and colleagues.

Multidimensional interventions

Interventions for financial toxicity must be multidimensional, with the patient and caregiver at the center of the approach. A financial navigator can make a powerful difference in helping patients and caregivers navigate the cost of care. However, providers must also receive training to enhance skills and deliver quality care effectively. Services should also be integrated into health systems to streamline care delivery and coordination. Community partnerships such as legal resources can support broader efforts to improve access to financial assistance resources. Finally, research outcomes must inform policy reforms to drive systemic healthcare improvements.

Medical-legal partnerships are another important intervention, integrating lawyers within healthcare settings to address health-harming legal needs and training healthcare providers to

recognize legal needs. Approximately 52% of low- to moderate-income households in the US have at least one unmet legal need. A lack of access to civil legal aid may be an even stronger predictor of poor health than low income. Medical-legal partnerships are uniquely positioned to assist, advocate for, and empower families with the resources to overcome financial barriers by increasing access to social support that helps mitigate negative non-medical drivers of health.

Training medical teams to engage in effective cost of care conversations is another impactful approach. These conversations address the range of costs patients and families may face, including both direct out-of-pocket expenses and indirect costs, to ensure a clear understanding of the financial burden. Cost of care conversations result in time and resource savings by preventing treatment and testing escalation, additional follow-up visits, and unnecessary hospitalizations. Furthermore, these conversations address a substantial frustration and barrier to care for patients, supporting patient-clinician communication and trust and improving patient care quality and outcomes.

Actionable steps

Dr. Edward ended the presentation by discussing the importance of policy changes and actionable steps that can be taken to alleviate the burden of financial toxicity in cancer survivors. Screening for financial toxicity, engaging in cost of care conversations, and referring patients to financial assistance, navigation, and community outreach programs can all be powerful tools to mitigate financial toxicity. Research is also needed to determine the sustainability of health system interventions, medical-legal partnerships, multilevel interventions, and AI integration. Finally, policy advocacy is needed in light of the 1.4 to 4.0 million Medicaid adults who could soon lose coverage.

Advancing Cancer Survivorship: Challenges and Community-Engaged Solutions

Dr. Betina Yanez is a Professor in the Department of Medical Social Sciences, Program Co-Lead of Cancer Control and Survivorship, and Director of Patient Engagement in the Cancer Survivorship Institute at the Robert H. Lurie Comprehensive Cancer Center and Northwestern University Feinberg School of Medicine.

Financial hardship and cancer

Dr. Yanez's presentation began by discussing the financial hardship associated with cancer. Approximately half of cancer patients face some economic burden associated with diagnosis and treatment leading to psychosocial distress and lower adherence to cancer treatments. However, a nationwide survey of 738 breast cancer patients revealed that most patients (58%) were not asked about financial stressors. Most patients preferred their providers reach out regarding financial needs and wanted this to take place soon after diagnosis. Black and Hispanic patients were more likely to receive financial assistance, and were more likely to prefer in-person financial education than White patients. Screening for financial toxicity can help identify patients at risk for nonadherence and triage patients to appropriate services.

Health insurance literacy

One contributor to financial hardship is low health insurance literacy, which is the lack of knowledge to understand, choose, and use health insurance. Patients with low health insurance literacy are more likely to experience financial hardship, lower health-related quality of life, lower adherence to medications and healthcare services, delays in care, and greater psychosocial distress.

A recent study by Dr. Yanez and colleagues sought to assess the acceptability and preliminary efficacy of a brief health insurance literacy video. English- or Spanish-speaking adults diagnosed with cancer who had elevated screening for depressive symptoms were enrolled. Race, ethnicity, gender, and age were not found to be associated with health insurance literacy outcomes at study baseline. However, higher levels of education and language were found to be associated with greater health insurance literacy outcomes. Furthermore, the health insurance literacy video demonstrated good usability and acceptability and improved the patients' ability to define co-insurance and co-pay terms in the short term. There was also marginal improvement in confidence in selecting health insurance one month later.

Psychosocial care for cancer-related distress

Dr. Yanez and colleagues also implemented bilingual psychosocial care for cancer-related distress in a group of 80 Latina breast cancer survivors. The intervention was co-developed with patient advocates and healthcare providers to improve symptom burden self-management and health promotion. Patient-reported outcomes from electronic health records were linked to digital health interventions designed to improve depressive symptoms among bilingual patients. Significant short-term reductions in symptom burden were found alongside significantly improved breast cancer-related well-being over time. The intervention, called My Wellbeing Guide, incorporated interactive features, guided relaxation activities, and symptom management information such as dealing with common cancer symptoms and tips for coping with cancer.

AI-driven digital interventions

Another focus of study for Dr. Yanez and colleagues is Advancing Cancer Control Engagement Research Through Transformative Solutions in Patient Navigation (ACCERT). This is an AI-enhanced patient navigation trial enrolling over 700 participants. In this research, health workers are paired with AI navigation support for preventive care, treatment and survivorship care, financial navigation, and using AI. Priorities include trust and credibility, confidentiality, accuracy, digital literacy, and sustainability. Key outcomes of the study include uptake of cancer-related services, resolution of barriers associated with non-medical drivers of health, and balanced reach and adoption of navigation in community settings.

Dr. Yanez concluded the presentation by emphasizing that digital interventions have the potential to address key concerns among cancer survivors. Engagement and participant satisfaction in these initiatives are strong. One area for additional research involves understanding how to sustain intervention gains. Furthermore, solutions may vary by population and location. Trust, credibility, literacy, and accuracy are key considerations. Implementing digital interventions in healthcare and

community settings can expand access to care, but more data are needed to guide effective and balanced implementation.

Avanzando Caminos

Dr. Frank Penedo is Professor of Psychology and Medicine, Director of Cancer Survivorship and Supportive Care, Sylvester Comprehensive Cancer Center Associate Director, Sylvester DCC Living Proof Endowed Chair in Cancer Survivorship, and Director of the Biopsychosocial Mechanisms and Health Outcomes (BMHO) Lab.

Hispanic cancer survivors

Dr. Penedo's presentation focused on enhancing cancer survivorship among Hispanics in the United States, including unmet needs and targeted interventions. Cancer survivors currently make up 5% of the US population, and approximately 20% of US cancer survivors are of Hispanic origin. Survival comes with many challenges, including financial issues, comorbidities, psychosocial distress, and health system challenges. Unmet needs impact critical outcomes such as treatment adherence and health-related quality of life.

In 2050, the Latino population in the US is projected to be approximately 100 million, accounting for 30% of the overall population. Cancer is currently the second leading cause of death among Latinos, who experience higher rates of certain cancers, particularly those associated with infectious conditions. Latino cancer patients also report greater supportive care needs relative to non-Hispanic patients.

My Wellness Check

My Wellness Check is an integrated electronic health record system that also assesses needs and triages patients. My Wellness Check is embedded in the patient portal and sends the patient brief questionnaires about anxiety, depression, pain, fatigue, and physical function 72 hours prior to an oncology appointment. The questionnaire also assesses nutritional needs and practical needs, including childcare, transportation, financial needs, and food insecurity. This program has been implemented by Dr. Penedo and colleagues in a cancer center serving 42% Hispanic patients.

Although about 40% of patients complete the questionnaire, Hispanic patients are less likely to complete it. Some have reported feeling that if they disclose their needs, they will not receive the same level of care as someone who does not. Engagement and triaging within the system were associated with a lower likelihood of emergency room visits or hospitalizations. Black and Hispanic patients are at significantly greater risk of emergency room visits or hospitalizations. Relative to non-Hispanic white patients, Hispanic participants report significantly lower quality of life and greater supportive care needs, including transportation needs, health insurance issues, housing needs, food insecurity, and limited access to care.

Cognitive behavioral stress management

Dr. Penedo and colleagues developed cognitive behavioral stress management interventions to be delivered to cancer survivors. These interventions are typically group-based, led by 1 or 2 therapists. Significant improvements in quality of life, ability to manage stress, coping benefits, and reframing the experience of cancer have been documented.

This work was also adapted to be more targeted to Hispanic populations, who tend to need more information about cancer. Cancer information was therefore prioritized, alongside specific stressors such as immigration stress, family stressors, financial stressors, loss of control, lack of self-efficacy, and fatalistic attitudes. Assertiveness training was also provided. This intervention resulted in improved quality of life, reduced pain interference, reduced fatigue, and improved sexual function.

Avanzando Caminos

The Avanzando Caminos (Leading Pathways) study is a Latino Cancer Survivorship study that has assessed structural, psychosocial and biobehavioral factors. Dr. Penedo and colleagues set out to characterize the study population in terms of cultural beliefs and behaviors (e.g., diet, family interdependence), biology, psychosocial factors, socioeconomic status, geographic location, country of origin, and migration pattern. Of the 3000 participants, 50% were Mexican American, with the rest being Central and South American, Cuban, Puerto Rican, or Dominican ancestry.

Preliminary findings showed that financial strain, social care needs, being female, being retired, and having fewer family members were associated with poor quality of life. Better physician-patient interaction was associated with better emotional well-being. Much more research is planned involving this well-characterized population in order to assess multilevel determinants of outcomes that are affecting Hispanic cancer survivors. Future research plans also involve incorporating AI-driven analysis of patient records.

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PANEL D
TECH & COMMUNICATION

Tech y Comunidad: Revolutionizing Cancer Care for Latinos Through Innovation and Connection

Combating Misinformation About Cancer Prevention on Social Media Among Latinx Audiences

Dr. Yonaira M. Rivera is Assistant Professor of Communication at Rutgers School of Communication & Information.

Health misinformation on social media

Dr. Rivera's presentation began by discussing health misinformation on social media. In order to address social media-based health misinformation, 5 approaches are needed: enhanced surveillance, understanding psychological drivers, assessing real-world consequences, a focus on vulnerable populations, and the development of an effective response.

Interestingly, a study of social media use during the coronavirus epidemic conducted by Neilsen and colleagues revealed that Latino individuals were 57% more likely to use social media platforms as a primary source of information about the coronavirus compared with non-Hispanic individuals. This increased use of social media among Latinos is especially stark when looking specifically at WhatsApp and Instagram. According to Pew Research Center, approximately 56% of Latino individuals use WhatsApp compared to only 23% of non-Hispanic White individuals.

While this trend is concerning, studies have also shown that social media can be used to promote health initiatives among Latino populations. However, social media engagement among Latinos must be understood before it can be effectively utilized.

Several factors determine engagement with and utilization of health information and misinformation. According to research, being female is associated with health information acceptance. Age, education level, and income have negative associations with health misinformation acceptance. Recommendation by a trusted source, such as content originally shared by friends, is associated with acceptance. Finally, racial minority status has been associated with greater susceptibility to health misinformation.

Latino social media engagement

Recent work by Dr. Rivera and colleagues found that Latino social media users had lower perceptions of the amount of health misinformation on social media and had higher engagement with video content compared with non-Latino White individuals. Lower perceptions of health misinformation predicted higher odds of watching videos, making health decisions, and discussing with a healthcare provider. In fact, Latino individuals perceiving little or no health misinformation were 2.91 times more likely to watch videos than non-Hispanic White individuals perceiving little or no health misinformation. Clearly, initiatives focused on health literacy tailored to subgroups such as Latinos are needed.

Qualitative studies by Dr. Rivera and colleagues found that social media post engagement may be happening even in the absence of liking, commenting, or sharing content of low scientific credibility. Instead, engagement may be passive but still influential to an individual's

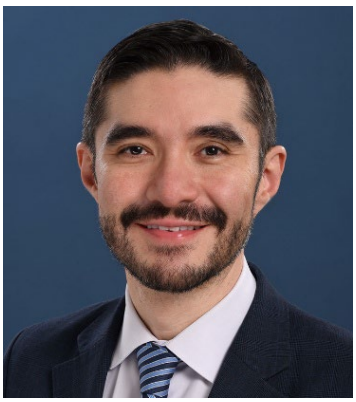
understanding. Engagement with and credibility assessment of information are also influenced by culture. In fact, the source of the information appears to be more important than its credibility when it comes to culturally-relevant content. Finally, engagement may lead to online and offline actions that are not always evidence-based.

Culture is extremely influential in Latino social media engagement and credibility assessments. Credibility is often impacted by culturally-relevant, identity-related rationales such as cultural traditions and artifacts, recollections embodying cultural values, shared narratives, and religion and spirituality. Heuristics, or cues used to make a quick judgement about credibility, may influence decision-making. Frequently used heuristics in the realm of social media include endorsement, reputation, consistency, self-confirmation, expectancy violation, and persuasive intent.

Effective approaches counteracting misinformation

Dr. Rivera concluded the presentation by discussing characteristics of successful approaches to counteracting misinformation among Latino audiences. Interventions addressing the impact of health misinformation must begin with a knowledge of the audience. Shared identity, language, acculturation, political affiliation, trusted sources of information, social media use, and more are vital to developing effective interventions. Effective approaches for Latino audiences also involve narratives embedded with culture. Indeed, promotoras have been successfully used as trusted sources in a myriad of Latino-based health interventions and may be an effective way to combat health misinformation and reach Latino audiences. Finally, digital health literacy is vital and must be a focus of any successful intervention.

Connecting Patients to Clinical Trials using AI



Dr. Arturo Loaiza-Bonilla is Chief of Hematology and Oncology at St. Luke's University Health Network, Co-Founder of Massive Bio, and Associate Professor at Lewis Katz School of Medicine at Temple University.

Gaps in biomarker testing and clinical trial enrollment

Dr. Loaiza-Bonilla began by discussing the need for, and opportunity presented by, biomarker testing. Despite the importance of comprehensive biomarker testing in guiding cancer treatment decisions, its adoption varies significantly by cancer type. Although insurance covers this type of testing, substantial gaps exist between guideline recommendations and real-world implementation.

Data on clinical trial enrollment is even more dismal. An analysis of more than 12 million cancer patients from 2004 to 2015 revealed that only 0.1% were enrolled in clinical trials. In fact, about 55% of clinical trials are shut down prematurely because of enrollment issues, and about 80% fail to meet their original enrollment deadline. The solution to these problems is to find a technological

way to bring together patients and developers of new cancer treatments in near-real time, at scale, and with a patient-centric approach.

One of the reasons for this gap between patients and biomarker testing and clinical trials is the information gap faced by clinicians. Providers often have fragmented patient data such as electronic medical records (EMR), labs, and imaging. Furthermore, there are often complex or shifting clinical trial criteria making recommendation difficult. Finally, crucial next-generation sequencing (NGS) data may be underutilized.

The power of AI tools

Digital enablement and artificial intelligence (AI) offer a powerful way to cut through this complexity. Dr. Loaiza-Bonilla and colleagues recently developed an algorithm that extracted structured clinical parameters from patients' medical records and retroactively matched them to digitized inclusion/exclusion criteria from over 14,000 actively recruiting interventional cancer trials. What would take 19,500 hours of human screening was achieved in approximately 1 hour for this AI tool. The time required for manual methods means missed matching due to changing eligibility windows, complex sequences, or dynamic clinical changes. Therefore, opportunities for patients and trials are lost due to information latency.

Digital trial-matching hubs are in the process of becoming part of core healthcare infrastructure. These systems are integrated and collaborative because they are embedded in multi-stakeholder initiatives (providers, sponsors, and advocacy groups), and because they are aligned with national strategies such as the Cancer Moonshot. Early results show higher accrual, faster activation, and increased participation from underrepresented groups when hubs are deployed. However, the ecosystem is still maturing and stronger data standards, interoperability, and broader access are needed.

This technology can be particularly impactful in clinical trial and cancer care deserts, where financial challenges are closely related to the geographic hurdle of trial access. In 2021, 85% of the 1,700,000 Americans diagnosed with cancer received care at local community-based practices. Generative AI can help analyze non-medical drivers of health and solve barriers.

Federated learning is a transformative approach in healthcare, enabling large-scale, privacy-preserving, and collaborative AI development across institutions, while addressing the critical challenges of data privacy, security, and governance. In federated learning, patient data does not leave the local data center, but models are shared in a multi-institutional, often international approach to compare data and improve generalizability. This can contribute to innovations in imaging, EMR analysis, drug discovery, and rare disease research.

A call to action

Dr. Laoiza-Bonilla closed the presentation by inviting listeners to engage with AI-based tools, not as a replacement for critical human connections in healthcare, but to reduce the limiting minutia preventing clinical trial participation and biomarker analysis. AI-powered, patient-centric pre-screening hubs—integrated with NGS data and real-time interoperability–can provide a practical,

scalable way to streamline clinical trial enrollment, accelerate the translation of biomarker discoveries, and ultimately improve patient outcomes in the era of precision oncology.

Actionable steps for clinicians and researchers include piloting validated AI pre-screening tools and demanding seamless EMR/NGS interoperability. Meanwhile, institutions and administrators should champion the infrastructure and policy changes needed to make these pilots stick. Finally, pharmaceutical companies and trial sponsors should co-design AI-driven recruitment strategies to accelerate accrual and broaden the reach of trials and real-world evidence.

Using Technology to Promote Physical Activity, Nutrition, and Weight Management for Cancer Prevention

Dr. Carmina G. Valle is Associate Professor and Associate Chair for Research in the Department of Nutrition, and Associate Director of the Connected Health Applications and Interventions (CHAI) Core at the Gillings School of Global Public Health at the University of North Carolina.

The importance of physical activity, nutrition, and weight in cancer care

Dr. Valle began by explaining that excess weight and obesity are associated with an elevated risk of 13 different cancers. In the US, an estimated 40% of adults are living with obesity, and an additional 32% are overweight. Furthermore, only a quarter of US adults meet cancer prevention guidelines for aerobic and muscle strengthening physical activity. However, up to one third of cancer cases in the United States may be related to poor nutrition, physical activity, and obesity, and could be prevented. Diet and physical activity are not only important for cancer prevention, but for health promotion among cancer survivors as well.

Comprehensive weight management interventions are generally effective compared to usual control or minimal treatment among cancer survivors. Multicomponent interventions involving diet, physical activity, and behavior change support are key to improving anthropometric outcomes. However, few existing weight management interventions are designed for Latino populations.

The promise of digital interventions

Digital interventions show potential for promoting physical activity, nutrition, and weight management in cancer survivors. Some emerging evidence even exists on digital interventions among Latino populations, although this research has largely involved short-term pilot studies with small samples, few weight loss interventions, and limited cultural tailoring or adaptation.

A systematic review of digital interventions for weight loss showed that interventions using a combination of at least four out of five key components, including self-monitoring, counselor feedback and communication, group support, use of a structured program, and use of an individually tailored program, were more effective for weight loss compared to control conditions.

Using smart scales and activity trackers to guide feedback may also improve weight and physical activity outcomes. Recent research by Dr. Valle and colleagues showed that regular self-weighing is associated with improved weight outcomes among African-American breast cancer survivors when promoted in the context of a weight gain prevention intervention. Lapses in daily self-weighing for 15 days were associated with a weight gain of 1 lb, while periods of daily weighing were associated with weight loss of .03 kg. Additionally, participants reported positive experiences and benefits from daily self-weighing and daily activity tracking.

Dr. Valle and colleagues have also shown the feasibility of using Facebook to promote physical activity in young adult cancer survivors, with improved total self-reported physical activity and weight management over 3 months. Furthermore, self-monitoring, social support, and interaction within the Facebook group were associated with increased physical activity.

More recent research by Dr. Valle and colleagues has shown that a theory-guided comprehensive mobile health (mHealth) physical activity intervention designed for young adult cancer survivors was more effective in improving moderate to vigorous physical activity (MVPA) in specific subgroups than in non-Hispanic White participants. Compared to self-help controls, MVPA increased by ≥30 minutes per week among the following subgroups: males, racial or ethnic minority groups, participants with a baseline BMI of 25–30 kg/m^2, and those with a stage III or IV cancer diagnosis.

Just-In-Time Adaptive Interventions

Dr. Valle's research is also focused on Just-In-Time Adaptive Interventions (JITAIs), which use seamless and uninterrupted data from digital devices to tailor intervention support to an individual's context, at the needed time, while minimizing waste. In this study, participants used smartphones to track diet, physical activity trackers to track activity, and smart scales that automatically transmit weight data. Highly tailored messages were then sent to participants based on their behavioral data and sets of decision rules. Guided by the Multiphase Optimization Strategy (MOST), a microrandomized trial was implemented among 206 young adults to evaluate whether daily messages using behavior change techniques (BCTs) improved adherence to daily weight-related behavioral goals, which types of intervention messages were effective, whether the effects of intervention messages change over time, and whether the intervention messages work differently when delivered under different contexts (e.g., recent behaviors). Preliminary results showed that while any message about diet increased the odds of meeting dietary goals by 5%, messages about the discrepancy between an individual's current behavior and dietary goal increased the odds of meeting dietary goals by 19%.

Dr. Valle concluded the presentation by highlighting some of the opportunities offered by mhealth and technology tools such as precision tailoring, continuous monitoring of objective data, frequent adaptation over time, enhanced reach, and peer-to-peer support. However, with these opportunities come several challenges. Implementation across different cancer populations can be challenging. Also, the most effective timing, dose, and duration of these interventions remain unknown, and more research is needed on the integration of these technologies with human counseling and in survivorship care.

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SESSION

Early Career Investigators

Therapeutic Yoga Improves Quality of Life and Reduces Perceived Stress in Women with Breast Cancer: 6-Month Intervention in South Texas Communities

Dr. Gustavo J. Almeida at UT Health San Antonio

Yoga for breast cancer survivors

Dr. Almeida began the presentation by highlighting the persistent physical, emotional, and psychosocial challenges faced by breast cancer patients. In South Texas, access to supportive, holistic survivorship services is limited, and many women lack resources to manage long-term symptoms and stress. Quality-of-life impairments can persist for years, impacting daily functioning. Because underserved communities face higher symptom burden and fewer programs, there is a need for scalable, accessible mind-body interventions.

In our recent study, a six-month yoga program was offered to adult breast cancer patients in San Antonio and Laredo, Texas. Participants showed significant improvements in several quality-of-life areas such as physical functioning, vitality, mental health, social functioning, bodily pain, and general health. Participants also experienced reductions in perceived stress, suggesting that therapeutic yoga may support emotional regulation among breast cancer survivors. Interestingly, awareness of exercise barriers actually increased. This may indicate an amplified awareness of personal challenges, a possible positive development allowing for better long-term management. Based on these results, therapeutic yoga is a promising, low-cost approach to improving quality of life and easing stress for breast cancer survivors, especially in underserved areas.

Using Virtual Reality to Promote Physical Activity

Dr. Yelba M. Castellon-Lopez at Cedars-Sinai Health Sciences University

Dr. Castellon-Lopez's presentation focused on the use of virtual reality (VR) to promote physical activity among Latino adults with cardiometabolic and cancer risk. Physical activity is known to play a crucial role in cancer prevention, treatment, support, and survivorship. However, one third of adults do not meet recommended physical activity guidelines. Latino populations have the highest prevalence of physical inactivity compared with other adult racial and ethnic groups.

Virtual reality is a computer-generated 3-dimensional simulation that creates an immersive and interactive artificial environment through a headset. A study was conducted among adult Latino participants who had cardiometabolic factors using VR to promote physical activity. Participants were invited to complete a 30-minute VR Latin dance-inspired session, followed by focus groups.

Overall, participants expressed enthusiasm for the use of VR, citing reasons such as being able to disconnect from their everyday lives and having a personal instructor tailored to their activity level. Participants who reported neighborhood safety concerns and transportation limitations also saw VR as a way to potentially overcome these barriers. Concerns included cost, connectivity issues, and engaging with the equipment. Future work involves lending VR equipment to participants at federally qualified health centers who are participating in lifestyle interventions and testing engagement over time.

How Multimorbidity Patterns Influence Colorectal Cancer Treatment in Puerto Rico

Dr. Maira A. Castañeda-Avila at University of Massachusetts Chan Medical School

Dr. Castañeda-Avila began by discussing colorectal cancer, which primarily affects older adults. In Puerto Rico, this issue is particularly important due to the rapidly aging population. Furthermore, large-scale migration of younger adults has left many older adults with limited family support and fragmented care.

A study was performed to determine how multimorbidity patterns influence colorectal cancer treatment and survival in older adults in Puerto Rico. Analysis was performed using the Puerto Rico cancer registry linked with health insurance claims data. Adults aged 65 and older who were diagnosed with colorectal cancer between 2012 and 2020 were included. Three clinically meaningful subgroups were identified based on comorbidities: the hypertensive vision group (about 14% of participants), the diabetic renal group (about 12% of participants), and the cardiopulmonary severe group (about 3% of participants).

The diabetic renal group was significantly less likely to receive guideline concordant care compared with patients with 0 or 1 chronic conditions. Unsurprisingly, the cardiopulmonary severe group had the lowest survival. Mediation analysis revealed that about 70% of the survival disadvantage, particularly in the diabetic renal group, was explained by lower treatment received. These results suggest that improving coordination between oncology and chronic disease care could improve outcomes in certain subgroups. However, it is important to tailor colorectal cancer care by multimorbidity profile in an aging population like Puerto Rico.

Large Language Models for Clinical Trial Summaries

Sara Flores at the National Cancer Institute

Dr. Flores's presentation discussed the feasibility and acceptability of using large language models (LLMs) to generate lay clinical trial summaries in English and Spanish for cancer patients. Language barriers contribute to low Latino participation in clinical trials. However, increased use of LLMs in healthcare represents an opportunity for making complex medical content more accessible.

US Food and Drug Administration (FDA) plain language guidelines and input from colleagues were used to develop templates. Using an iterative LLM generation process, key protocol data such as study purpose and risk and benefits were added to these templates. Through close collaboration with clinical experts, English and Spanish versions were developed and submitted to patient advocates for feedback. The English summary was also sent to a certified translator at the National Library of Medicine who produced an independent Spanish translation. Preliminary feedback from English-speaking advocates focused on readability, formatting, and simplifying jargon. Spanish-speaking patient advocates also focused on readability, but emphasized consistency in language and conversational tone. Both feedback streams resulted in revisions to grammatical errors and clearer descriptions of clinical trial procedures.

LLM-generated summaries offer a scalable approach to improve clinical trial communications when paired with human oversight, and integrating patient advocate feedback with certified translations can enhance cultural linguistic appropriateness and aligns with health literacy best practices. Future work includes testing the readability of the certified translation, assessing the summaries through focus groups, developing an integrated protocol, and scaling workflow to additional trials.

Self-collection Screening Among High-risk Groups

Cirila Estela Vasquez Guzman at Oregon Health & Science University

Dr. Guzman began by noting that Latinas are 2 to 3 times more likely to die from cervical cancer than the general population. However, this is largely a preventable disease, resulting from a lack of screening, late screening, inadequate follow-up, or a lack of human papillomavirus (HPV) vaccination. Although a large body of literature on cervical cancer exists, it focuses primarily on younger women of reproductive age. More research is needed on cervical cancer in middle- to older-age women, who are less likely to have received an HPV vaccination, particularly if they are immigrants. Older age is also associated with declining immunity, making these women more susceptible to HPV.

The US Food and Drug Administration has approved self-collection of vaginal samples for cervical cancer screening. To evaluate the usefulness of self-collection in a Latina population, semi-structured interviews were conducted in English and Spanish with 26 participants. Participants reported little to no awareness about self-collection. Although the majority had mixed intentions about participation, 12 refused self-collection, preferring to go to their provider for screening.

Qualitative content analysis revealed 3 themes behind this hesitancy. First, most participants did not feel that they could do the self-collection, indicating a lack of self-confidence and trust in their own abilities. Second, participants expressed distrust with the larger healthcare system and were concerned about lost samples. Finally, participants reported a need for bilingual materials for those with limited English proficiency. Clearly, interventions are needed to improve self-collection participation for all Latina women, particularly populations who may be left behind either due to race, language, age, and/or immigration status.

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KEYNOTE

Bridging International and National Latino Research to Serve its Populations

Bridging International and National Latino Research to Serve its Populations

Dr. Mariana Chávez Mac Gregor is Chair ad interim and Professor in the Health Services Research Department and in the Breast Medical Oncology Department at University of Texas MD Anderson, as well as Executive Officer for International Affairs at the SWOG Research Network.

Latin American and US Latino populations

Dr. Chávez Mac Gregor began the presentation by describing the need to bridge cancer research in the United States and Latin America. According to Global Cancer Statistics, over 32 countries, territories, and regions are a part of the "Latin American and Caribbean" population. According to this definition, over 662 million people reside in Latin America. However, the incidence of many cancers is lower in Latin America compared with the US.

In the US, the Latino population is greater than 68 million. The median age of those born in the US is 21.4, while the average age of immigrant Latinos is 43.6. The majority of the Latino population is concentrated along the southern border and in the northeastern metropolitan areas. However, over 2.7 million Latinos live in rural counties, reflecting the extreme heterogeneity of the Latino population.

US-based Latino individuals are uniquely affected by obesity and physical inactivity, low rates of cancer screening, late stage at cancer diagnosis, younger age at diagnosis, structural and non-medical drivers of health, and lack of insurance coverage. In fact, 25.3% of Latino individuals in the US are uninsured, compared with 7.8% of non-Hispanic White individuals. Uninsured adults have lower rates of being up-to-date on screening, and are far more likely to delay or forgo care because of cost.

A lack of cancer research in Latin America

Although cancer is a global disease and a global problem, cancer research is not global. The overwhelming majority of oncology trials are conducted in North America and Europe, meaning the evidence base that informs global oncology practice reflects a relatively narrow slice of the world's cancer experience. Latino populations, both in the U.S. and across Latin America, are not adequately represented in the research that guides cancer treatment, compromising both internal and external validity.

Although the Latino population has a cancer prevalence of 7%, it comprises only 3% of trial participants. Limited English proficiency (LEP) is a barrier to trial access and results in a reduction in participation. Lack of health insurance also limits access to care, further limiting access to clinical trials. Although the incidence of cancer is greater in metropolitan areas, rural representation is vitally important in oncology clinical trials. Many Latinos live in rural areas, where they face greater travel distance for both cancer care and trial participation.

In Latin America and the Caribbean, progress has been made in cancer care through national and regional cancer control initiatives, which have proved useful in reducing diagnostic and treatment initiation delays. However, there are still significant gaps, including a lack of oncology clinical trials. Of all global randomized clinical trials from 2014-2017, only 8% occurred in low- and middle-income countries. In Latin America, only 0.65% of gross domestic product is being invested toward research and development, 3.4 times less than in developed countries.

The SWOG Latin America Initiative

As a major part of the US publicly funded cancer research infrastructure, SWOG designs and conducts multi-institution clinical cancer trials with the mission of significantly improving lives through cancer clinical trials and translational research. Over the last 6 decades, SWOG research has resulted in over 3.34 million years of life saved. The SWOG Latin America Initiative (SLAI) seeks to build a bridge between US and Latin American cancer research. Because the Latino population is the largest minority in the US, SWOG expansion in Latin America allows for insight into the future of the US population.

SLAI's initiatives in Latin America are based on 4 pillars: strengthening the research infrastructure, increasing trial access and activation, enhancing investigator development, and reducing barriers to accrual. In order to strengthen the research infrastructure, SLAI is focused on improving bilingual training and education, hosting annual cancer research conferences, engaging in professional exchanges and collaboration, and promoting leadership in research networks.

Increasing trial access and activation begins with clinical trial design and inception, identifying trials that are feasible and relevant to the region, engaging with investigators to allow protocol modifications, and encouraging committee engagement. Streamlined trial activation, mentorship and training programs for team members, and enhanced regional collaboration are also important.

SLAI's training and mentorship programs for investigators are enhanced through structured mentorship programs, formal training courses, communication initiatives, and the building of future leaders. Regulatory barriers are reduced by addressing legal, financial, and operational challenges.

Dr. Chávez Mac Gregor ended the presentation by reiterating the differences in cancer outcomes faced by the Latino population in both the US and Latin America. Representation in clinical trials can translate to better care for all populations. Building capacity and infrastructure across borders improves science and ultimately, leads to better outcomes for Latino patients in the US and Latin America.

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SESSION 3

The Genetic Gap: Why Biomarkers Matter

Tumor Progression and Pancreatic Cancer

Dr. Jose Trevino is Chair of the Division of Surgical Oncology at the Virginia Commonwealth University (VCU) School of Medicine, and Surgeon-in-Chief at VCU Massey Cancer Center.

Improved mortality among Latino pancreatic cancer patients

Dr. Trevino began the presentation by underscoring the severity of pancreatic cancer, which is projected to be the number 2 cause of cancer deaths by 2030. In Puerto Rico, however, although incidence of pancreatic cancer has been rising over the past decade, mortality has remained relatively constant. This finding led Dr. Trevino and colleagues to further investigate pancreatic cancer mortality in Latino individuals.

In the US as a whole, according to data from the national cancer database (NCDB) in 2020, the Latino population had the best overall survival compared to other racial and ethnic groups. In light of the heterogeneity of the Latino population, pancreatic cancer mortality was evaluated even further by country of origin. This analysis revealed that Dominican individuals had the best overall survival.

A counterintuitive finding based on weight

Global analysis of pancreatic ductal adenocarcinoma incidence and mortality from 2010 to 2025 revealed similar trends. Although Latino patients presented with later stage cancer, which is seen with many cancer types, they had better outcomes than non-Hispanic White or Black patients. Further analysis even found that overweight Latino patients had better outcomes than underweight patients or obese patients. In fact, underweight patients had a 45% higher risk of death than overweight patients. Overweight and obese Latino pancreatic cancer patients also had a significant survival advantage compared to overweight and obese non-Hispanic White and Black patients. While the reasons for the statistical advantage among Latinos–and in particular overweight Latinos–remain unknown, these findings represent important areas of future research into pancreatic cancer survival.

A frequent finding among pancreatic cancer patients is malnourishment and muscle loss. Interestingly, there is a histological difference in the muscle of Latino, non-Hispanic White, and Black pancreatic cancer patients. Black patients tend to have increased fat and collagen deposition, making their muscles unhealthy. Genomic differences are also observed, including differences in upregulated and downregulated gene ontology pathways between non-Hispanic White and Black patients. However, this type of data is unavailable for Latino patients.

Much more Latino participation in clinical trials is needed to close the data gaps in oncology research. However, as noted in other presentations, Latino participation in clinical trials is well below the level of Latino representation in the US population. Some of this discrepancy is due to barriers to participation at the level of the individual, a lack of understanding, and a lack of willingness to participate. However, a large part of the responsibility for Latino involvement also

falls on clinicians, who need to engage in concerted efforts to enroll participants from all backgrounds in order to obtain the best data possible.

Cooperation is key

Another approach to addressing data gaps among Latino cancer patients is to increase the collection of biological samples from this population. Unlike efforts to improve clinical trial participation, this can be implemented more immediately through partnerships with clinicians. By collaborating across institutions and geographic regions, researchers can access samples from a broader range of patient populations. These biospecimens can then be analyzed to isolate key components and better understand disease processes. This is particularly relevant for examining histological differences in muscle among pancreatic cancer patients across racial and ethnic groups.

Dr. Trevino ended the presentation with a call for increased cooperation and sharing of tissue samples for improved research. Through the sharing of samples, insight, data, and information, questions involving differences in pancreatic cancer outcomes can be answered. Insights into variance in muscle tissue based on race may also lead to an understanding of why overweight Latino pancreatic cancer patients have improved mortality rates.

Disparities in Biomarker-Driven Therapies: Are Latinos Underrepresented in Precision Medicine?

Dr. Luis E. Raez is Chief Scientific Officer and Medical Director at Memorial Cancer Institute/Memorial Healthcare System, Research Professor of Medicine at Florida Atlantic University (FAU), and Past-President of the Florida Society of Clinical Oncology (FLASCO).

Biomarker testing for lung cancer patients

Dr. Raez began by discussing the importance of biomarker testing and how it impacts non-small cell lung cancer (NSCLC) outcomes. Lung cancer is the leading cause of cancer-related deaths in the US and worldwide, and NSCLC accounts for 85% of all cases. Lung cancer outcomes are typically dire, with 57% of lung cancer patients presenting at stage IV, and a 5-year overall survival rate for stage IV disease of 6%.

However, biomarker-driven therapies improve overall survival. Immunotherapy and kinase inhibitors lead to improved 5-year overall survival in stage IV NSCLC, with reported rates ranging from 15% to 60%. Researchers have already identified 12 oncogenic drivers in NSCLC, and 25 therapies have been approved for appropriate precision treatment. As a result, patients with one of these drivers have much higher overall survival rates. Biomarker testing is therefore fundamental to the treatment of advanced NSCLC.

Barriers to testing

In Latin America, however, barriers to molecular testing adoption prevent adequate testing. Policy barriers include unequal access to tests and therapies, insufficient funding, lack of appropriate insurance billing codes for next-generation sequencing (NGS), limited acceptance of the benefits and impact of molecular testing, and fragmented administrative and reimbursement processes. Barriers at the individual level include a lack of awareness and training of medical personnel, a shortage of trained personnel, and poor availability of molecular tumor boards. Barriers in infrastructure include poor research and local data in genomics, poor digital transformation of healthcare stakeholders, and low availability of molecular biology laboratories.

Although Latino lung cancer patients are less likely to receive molecular testing than non-Hispanic White patients, variations in the frequency of certain oncogenic drivers based on race and ethnicity have been seen. Latino patients living in the US, for example, have a higher rate of EGFR mutations (25%) than non-Hispanic White patients (15%). The frequency of these mutations also varies based on country of origin, with patients from Peru having the highest frequency (55%), followed by Mexico (25%), Brazil (20%), and Argentina (15%). These findings may be good news for Latino patients since the presence of oncogenic drivers allows for precision therapy and therefore better outcomes.

However, even in the US access to precision treatment is limited, with only 12.1% of NSCLC patients receiving targeted treatment during first-line therapy, and only 15.8% of patients receiving targeted treatment in any line of therapy. A recent survey of US physicians identified several barriers to NGS: reimbursement challenges, lack of knowledge or awareness, lack of evidence of clinical utility, lack of availability of supportive resources, and logistical barriers.

Solutions to improving lung cancer outcomes

One solution to increased NGS testing is increased clinical trial participation. However, only 3.3% of NSCLC patients participate in clinical trials. Participation is even lower among Latino lung cancer patients, with only 2.2% clinical trial participation. This lower rate of participation may be associated with rural locations or language barriers.

In order to improve outcomes, liquid biopsies should be used to make frontline treatment decisions in patients with metastatic NSCLC. Liquid biopsies are non-inferior to tissue biopsies in identifying actionable genetic alterations in patients with NSCLC. However, liquid biopsies are able to generate NGS results significantly faster than tissue biopsy NGS and bypass the logistical barriers of finding and shipping tissue samples for sequencing.

Dr. Raez ended the presentation by stressing the need to address non-medical drivers of health such as social connections, tobacco use, depression, physical activity, transportation needs, caregiver education and work, violence, alcohol use, financial resource strain, stress, food insecurity, housing stability, and caregiver health. Screening for these non-medical drivers of health can trigger important interventions to improve care. Addressing non-medical drivers of health, along with increased molecular testing, can improve outcomes for all lung cancer patients, in particular Latino patients.

The Impact of Ancestry and Population Genetics on Breast Cancer Risk and Treatment Response

Dr. Elad Ziv is Professor of Medicine at Helen Diller Family Comprehensive Cancer Center at the University of California, San Francisco.

The impact of ancestry on cancer

Dr. Ziv's presentation focused on breast cancer and how tumor genomics vary in Hispanic populations. Some evidence already exists showing that ancestry affects the type of molecular genetic changes that occur in tumors. A study from the Cancer Genome Atlas project, for example, showed variation in tumor mutations based on African, East Asian, and European ancestry. However, due to a lack of genetic backgrounds in the project, more research is needed to fully understand how ancestry alters tumor genomics.

Responses to tumors also vary based on ancestry. Another study from the Cancer Genome Atlas project identified 6 possible inflammatory responses. Findings revealed that genetic ancestry affected the rates of these inflammatory responses.

Latina ancestry and tumor genetics

INSPIRE, a recent study by Dr. Ziv and colleagues at the City of Hope Cancer Center, sought to build on this knowledge by analyzing women with breast cancer. Latina patients were typically younger than non-Hispanic White patients, and had later stage disease. Of the 5 subtypes of breast cancer tumors–with the most common being luminal A, luminal B, HER2, and basal–Latina patients were found to have more basal and HER2 tumors than non-Hispanic White patients.

Germline whole exome sequencing, tumor whole exome sequencing, and tumor RNA-sequencing were also performed. Non-Hispanic White patients were found to primarily have European ancestry, while Latina patients primarily had a combination of European and Indigenous American ancestry. Latina patients were found to have more TP53 mutations (40%) than non-Hispanic White patients (28%). This discrepancy may have been associated with the different rates of basal and HER2 tumors. Another difference between Latina and non-Hispanic White patients was the rate of CTCF mutations, which are typically rare. About 3% of Latina patients had this mutation compared with 1% of non-Hispanic White patients.

Copy number aberrations—large chromosomal amplifications or deletions—play an important role in breast cancer biology and treatment outcomes. Both the Latina and non-Hispanic White cohorts exhibited large amplifications consistent with HER2-positive tumors, and patterns of deletion were similar between the 2 groups.

Tumor immune ecotypes

RNA sequencing data were analyzed using CIBERSORTx to estimate cell-type composition, including immune cell fractions and their activation states. A software called Ecotyper was then used to combine cell states into 10 tumor immune ecotypes. The 2 most important tumor immune ecotypes were ecotype 9 and 10, both of which tend to be inflamed tumors.

Ecotype 9 is the most inflamed tumor immune ecotype, meaning it has the best prognosis and the best response to immunotherapy. Latina patients had a higher occurrence of ecotype 9, even after adjusting for all tumor subtypes. Further analysis revealed that Latina patients with the most Indigenous American ancestry had the highest occurrence of ecotype 9. Ecotype 9 was also associated with more somatic mutations, meaning a larger immune response. Breast cancer patients with inherited mutations in *BRCA1*, *BRCA2*, and *PALB2* were also more likely to have ecotype 9.

Similar findings were observed for ecotype 10. Ecotype 10 was associated with better outcomes than most other ecotypes, was higher in Latina women, and was the highest in women with Indigenous American ancestry. Ecotype 10 and Indigenous American ancestry were also associated with the *APOBECC3A/B* genotype, which is a deletion that is a breast cancer risk factor.

Dr. Ziv concluded the presentation by summarizing findings and stressing that this knowledge is vital to important treatment decisions that are based on these molecular subtypes. Rare CTCF mutations were more common among Latina women. Ecotype 9 and 10, which are associated with a better prognosis, were also more common among this group. Ecotype 9, which is associated with inherited mutations in *BRCA1*, *BRCA2*, and *PALB2*, and ecotype 10 were also more common among Latina women with Indigenous American ancestry.

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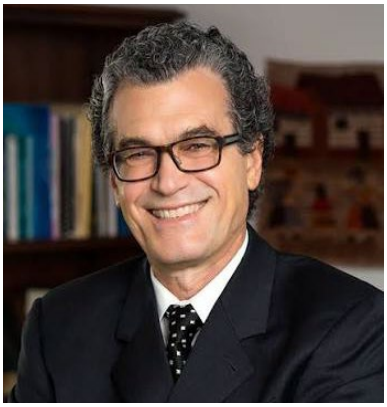
SESSION 4

Emerging Voices, Evolving Science: From Innovation to Impact ¿Estamos Listos?

Tobacco Use and Lung Cancer in Latinos in the U.S.

Dr. Eliseo J. Pérez-Stable is Professor Emeritus at the University of California, San Francisco School of Medicine (UCSF) and Former Director of the National Institute on Minority Health and Health Disparities (NIMHD).



Tobacco use in the US

Dr. Pérez-Stable began by providing some background information on tobacco use in the US. Tobacco smoke is the main cause of lung cancer in the US with an attributable risk of 0.85. However, smoking rates have decreased in most populations over the past 35 years, and second-hand smoking is limited to private spaces in most of the country. Lung cancer treatment has also improved 5-year survival to 15%. Although a large clinical trial completed over 10 years ago showed that screening for lung cancer with low-dose computed tomography (CT) decreases overall mortality by 20%, only about 18% of individuals are screened. Efforts to promote lung cancer screening are needed.

Frequency of smoking is an important and often overlooked factor affecting lung cancer risk. Dr. Pérez-Stable and colleagues have been using data from the Population Assessment for Tobacco and Health (PATH) study to assess daily vs nondaily smoking rates in various populations. Over 30% of current Latino smokers and 20% of all US smokers report nondaily tobacco use. More work is needed to understand rates of quitting, progression to daily smoking, or maintenance of nondaily patterns among nondaily smokers. This is especially important because even smoking one cigarette raises the risk of cancer and the elevated risk of 30% of coronary disease in this population of nondaily smokers.

Smoking susceptibility and future risk

Dr. Pérez-Stable and colleagues also evaluated 8,899 youth in PATH who were never smokers to examine whether smoking susceptibility predicted future smoking among youth of different backgrounds. The youth were asked 4 questions to evaluate if they were ever curious about smoking, if they thought they would smoke a cigarette in the next year, if they thought they would try a cigarette soon, and if they would try a cigarette if a friend offered. During the study, among those not susceptible to smoking at evaluation, 11.4% became experimental smokers, 5.1% became current smokers, and 1.1% became established smokers. Participants who answered “yes” to 1 of the questions had a higher probability of becoming an experimental smoker, with an adjusted odds ratio of 2.0. Participants who answered “yes” to 3 or 4 questions had an adjusted odds ratio of 6.9. These odds were even more pronounced among African American and Latino youth compared with White youth. The data were also examined for the role of vaping which attenuated the risk of using combustible cigarettes.

The genetics of smoking

Another study found that smoking habits and levels of tobacco-related chemicals in the body differ among Latino smokers depending on their specific heritage. In this study, 13,578 individuals were evaluated for 2 biomarkers: serum cotinine, and 4-methylnitrosamino-1-[3-pyridyl]-1-butanol (NNAL). Latino individuals, who made up 16.3% of the study population, had the lowest levels of cotinine and NNAL. Therefore, the optimal cotinine cut point to distinguish current smokers was 0.69 ng/mL for Latinos, which contrasts with higher cut points for Black individuals (7.0 ng/mL) and White individuals (4.0 ng/mL). Cuban and Puerto Rican participants had biomarker levels 3 times higher than other Latino participants.

A genome-wide association study of smoking in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) evaluated genetic associations with smoking behavior in 12,741 participants. This study found that *CHRNA5*, which encodes the α5 cholinergic nicotinic receptor subunit, was associated with heavy smoking at genome-wide significance. An unconfirmed association with nondaily smoking could not be validated because no other study had collected data on this question. There is an ongoing study to evaluate the levels of cotinine and NNAL in 2000 HCHS/SOL participants who reported smoking.

Consolidating gains

Lung cancer mortality has decreased in all populations by 30% to 40% over the last 20 years, largely due to the success of tobacco control efforts and advances in screening and therapy. However, this success is somewhat attenuated in females. Recent research has provided data on the estimated burden of lung cancer and health disparities in the US at the county level, stratified by racial and/or ethnic group. This data could allow for targeted interventions in counties with higher mortality.

By continuing important research into predictors of smoking susceptibility, biomarkers, and lung cancer burden by location, at-risk populations can be identified and targeted. In this way, decreases in lung cancer mortality can be consolidated and used as a springboard for even better outcomes.

Integrating Research, Education, and Clinical Trial Access: Leveraging Efforts Across Southern Arizona

Dr. Alejandro Recio Boiles is Associate Clinical Professor of Medicine, Associate Program Director of the Hematology and Medical Oncology Fellowship Program, and Assistant Director of Community Outreach & Engagement at the University of Arizona Comprehensive Cancer Center.

Cancer initiatives in Southern Arizona

Dr. Recio Boiles's presentation focused on prostate cancer outreach and engagement through the lens of several initiatives: Community Assessment of Southern Arizona (CASA), outreach activities like Let's TACO Bout Cancer, Research Outreach of Southern Arizona (ROSA), the

Community Academic Partnership Program (CAPP), Learning with Oncology and Community Arizona Leaders (LOCAL), the Arizona Clinical Trial Network (ACTN), and cancer policy engagement.

The catchment area for the University of Arizona Cancer Center is in Southern Arizona. A recent study by Dr. Recio Boiles and colleagues through the CASA program evaluated reasons why individuals would opt out of clinical trial participation in that catchment area. Approximately 53% of Latinos interviewed indicated that they simply did not know anything about clinical trials, compared with 36% of White and 37% of Black participants.

The Let's TACO Bout Cancer program offers a Clinical Trial 101 educational initiative focused on prostate cancer. After the presentation, surveys on prostate cancer awareness are collected. Recent results showed that 84% of respondents were female, suggesting substantial participation from relatives and caregivers. Over 75% of respondents indicated that their knowledge "increased a lot" through the presentation. In contrast to the Let's TACO Bout Cancer program, the ROSA cafe focuses on research education over cancer education.

Variation in prostate cancer markers

A review of the National Cancer Database revealed that Latino prostate cancer patients have higher prostate-specific antigen (PSA) levels, higher Gleason scores (which indicate aggressive prostate cancer), and higher metastatic rates than White patients. After analysis of Latino patients by country of origin, Mexican patients were found to have the highest PSA levels, the highest metastatic rates, and among the highest Gleason scores. Local work by Dr. Recio Boiles and colleagues in Arizona have confirmed these findings.

Research by Dr. Recio Boiles and colleagues assessed the molecular characterization of prostate cancer in Latino Americans and non-Hispanic White Americans, finding differences in the frequency of certain mutations and fusions. *TMPRSS2* fusions, for example, were more frequently found in Latino prostate cancer patients, leading to more aggressive and locally advanced cancers. Crosstalk between Hedgehog, Notch, and Wnt/β-catenin signaling pathways was more pronounced in Latino patients compared with non-Hispanic White patients.

Collaboration and policy engagement

The LOCAL symposium was another recent initiative bringing together 33 organizations and discussing topics such as patient access, the location of research efforts, and participation in clinical trials. Key takeaways included the value of promotoras, the power of lived experience, commitment to health fairness, the need for resource access, structural and system-level innovation, and collaboration.

ACTN focuses on reaching cancer patients who are typically underserved. Most cancer patients in Arizona are not in Phoenix or Tucson, the major metropolis areas, and therefore care must be provided at regional cancer centers. However, many of these regional hospitals have limited access to clinical research for cancer patients. ACTN is committed to conducting clinical trials across the state.

Another ACTN priority is prostate cancer policy engagement. The organization is tracking several bills in the Arizona legislature, including policies about prostate cancer and breast examination cost sharing with insurance companies, retail licensing for electronic smoking devices, and pharmacy benefits and coverage.

Through initiatives like CASA, Let's TACO Bout Cancer, ROSA, CAPP, LOCAL, and ACTN, Dr. Recio Boiles and his colleagues at the University of Arizona Comprehensive Cancer Center are making a measurable impact on prostate cancer awareness. These programs support education, clinical trial enrollment, collaboration, resource access, and policy advocacy, contributing to improved outcomes for prostate cancer patients in Southern Arizona.

Clinical Trials in Under-resourced Environments

Dr. Carmen E. Guerra is the Ruth C. and Raymond G. Perelman Professor of Medicine at Perelman School of Medicine, and the Associate Director of Community Outreach & Engagement at the Abramson Cancer Center at the University of Pennsylvania.

Increasing clinical trial enrollment

Dr. Guerra's presentation focused on the identification and development of strategies to mitigate barriers to clinical trial enrollment for under-resourced populations. Clinical trials are vital for testing new treatments aimed at reducing cancer morbidity and mortality. However, suboptimal participation has been well documented for all populations, especially those from racial and ethnic minority groups. Among 1,200 Commission on Cancer programs representing 70% of all cancer cases diagnosed in the US, only 7.1% of cancer patients participated in a clinical trial.

Underrepresentation in clinical trial participation from racial and ethnic minority groups causes problems by limiting access to new therapies for these groups, threatening the efficiency of research which increases costs, and limiting the generalizability of efficacy and safety results. Approximately 70% of US counties lack an active cancer treatment trial, meaning that 25% of adults over age 55 must travel more than 2 hours to access a trial. Cancer clinical trials are typically segregated to large metropolitan areas, with 44% of metro counties reporting no trials, compared to 86% of rural counties. In fact, only 10% of oncologists practice in a non metro area. Under-collection and under-reporting of race and ethnicity enrollment data in clinical trials is also a problem.

Outreach and engagement

Community outreach and engagement (COE) can disrupt clinical trial segregation by identifying patients with cancer, providing clinical trial education, and building trust. However, successful COE has several key requirements: a workforce reflective of the identities of the individuals served, the development of partnerships with local organizations, identification and response to the needs of the population, language- and culturally-tailored strategies for varying locations, and longitudinal investments and relationships.

Initiatives to remove barriers to patient participation in clinical trials must include revised educational materials that detail the cancer stories of the target population. Addressing the social needs of patients and clinical trial participants is also important. One such program, called Ride Health, has provided 8766 rides for cancer patients since 2020. Another program, called the Lazarex IMPACT Program, provides financial reimbursement to clinical trial participants. According to one study, 48% of patients in Phase 1 trials reported monthly out-of-pocket costs of at least $1,000.

Another barrier to participation is the language barrier. In the Abramson Cancer Center, Dr. Guerra and colleagues use My Accessible Real-Time Trusted Interpreter, or MARTTI, to help overcome this barrier. For use in clinical trials, Institutional Review Board short forms are available in 12 languages for non-English speakers.

Clinical trial design

Clinical trial design is also imperative for adequate trial participation and must be pragmatic and decentralized, leveraging regional health centers and networks and fostering local, trusted partnerships to improve recruitment and retention. Minority outreach and engagement and recruitment plans should be required in each clinical trial protocol. Informed consent forms should be in plain language and translated into multiple languages, and patient advisory boards should help shape the study design from the beginning.

The NCI Community Oncology Research Program (NCORP) includes 14 designated Minority/Underserved (MU) sites specifically focused on increasing cancer clinical trial access for populations in low-resource, rural, or underserved areas. These sites are located in regions with at least 30% racial/ethnic minorities or rural residents.

Provider bias

Dr. Guerra ended by discussing provider bias when dealing with patients of minority populations. Among Black patients with metastatic breast cancer, 40% reported no one on their care team discussed clinical trial options. Another study found that healthcare providers perceived recruiting minorities to cancer clinical trials to be more challenging due to less background knowledge and language barriers. Minority patients were also perceived to have poorer protocol adherence, be less altruistic than White populations, and have low interest and high mistrust due to a legacy of mistreatment in research. However, research shows that under-represented minority patients are not less likely to agree to participate in treatment trials.

Barriers to participation in cancer clinical trials can be overcome by developing strategies that address these barriers at the institutional, patient, provider, and policy levels. Multilevel, multi-dimensional strategies are more likely to have an impact. Effective strategies include establishing COE, implementing patient navigation, addressing social needs, developing a trial portfolio that meets the needs of the catchment area, modernizing trial eligibility criteria including eliminating the English requirement, mitigating research team member unconscious bias, and developing policies that support access to and reduce the burden of participation in clinical trials.

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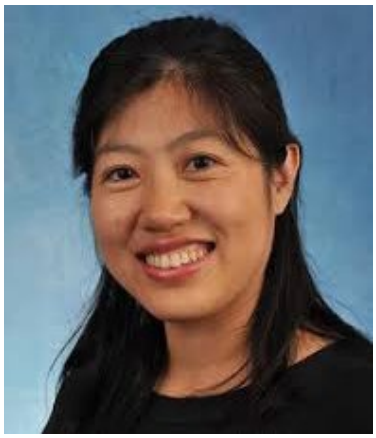
SESSION 5

Beyond the Barriers: From Law to Life

Effects of the Affordable Care Act on Cancer Care and Outcomes

Dr. Xuesong Han is Scientific Director of Health Services Research at the American Cancer Society.



History of the Affordable Care Act

Dr. Han's research focuses on how health policies like the Affordable Care Act (ACA) affect access to care and cancer outcomes. The ACA was signed into law in March of 2010 and is the largest healthcare system change in the US since the establishment of the Medicare and Medicaid programs. Its goals are to improve health insurance coverage, quality of care, and patient outcomes, and to maintain or lower costs by catalyzing change in the healthcare delivery system. Last year, Congress passed legislation that included large funding cuts and the addition of work requirements to Medicaid programs. Furthermore, enhanced premium tax credits for ACA marketplace plans have officially expired. These policy changes threaten to reverse more than a decade of progress under the ACA, such as the expansion of insurance coverage.

Insurance coverage is essential for access to care in the US, and especially important for the Latino population given the structural barriers to obtaining employer sponsored insurance and historically high uninsured rates. In 2010, before most of the ACA's major provisions were implemented, Latinos had the highest uninsured rate, with nearly 1 in 3 lacking health insurance coverage. By 2015, the uninsured rate among Latinos had dropped to approximately 1 in 5.

Extensive evidence has shown that insurance coverage is a strong determinant of care and outcomes across the cancer care continuum, improving access to preventive service, increasing cancer screening rates, enabling earlier stage at diagnosis, enhancing receipt of treatment, increasing clinical trial participation, improving medication adherence, reducing financial hardship, and increasing quality of life and survivorship. Clearly, the ACA has the potential for far reaching effects throughout the cancer control continuum, affecting cancer care delivery through 3 main mechanisms: health insurance expansion, health insurance coverage reform, and payment and delivery system reform.

Effects of the ACA on cancer care

The ACA impacts cancer care and outcomes through many mechanisms, including dependent coverage expansion, elimination of cost sharing for preventive services, and Medicaid expansion. Dependent coverage expansion allows young adults to stay on their parents' health insurance plan until they turn 26. One study by Dr. Han and colleagues focused on young women newly diagnosed with cervical cancer in the National Cancer Database. This study found that ACA dependent coverage expansion provision was associated with a net increase of 7.6% in early-stage diagnosis and a net increase of 13.4% in receipt of fertility sparing treatment.

Another study analyzed the elimination of cost sharing for preventive services. This provision requires insurers to cover preventive services recommended by the US Preventive Services Task Force with no deductible or co-pay. The provision was shown to be associated with increased rates of colorectal screening, especially among low-income adults and adults with low educational attainment.

A comparison of expansion and non-expansion states

Studies have also compared insurance coverage rates, access to care, and cancer outcomes in states that implemented Medicaid expansion versus states that did not. Decreases in uninsured rates among newly diagnosed cancer patients aged 18 to 64 years were observed in both Medicaid expansion and non-expansion states, indicating a positive overall effect for all states. However, the largest decrease in uninsured rates were among low-income patients in Medicaid expansion states. In fact, differences in insurance coverage based on poverty and rurality were nearly eliminated among newly diagnosed cancer patients in Medicaid expansion states, while these differences remained in non-expansion states.

Medicaid expansion was also associated with a net increase in 2-year survival. Liver cancer patients in expansion states, for example, had better survival than those in non-expansion states, although the ACA seemed to trigger improvements in survival in both expansion and non-expansion states. Medicaid expansion was also associated with an increased receipt of palliative care as part of the first-course treatment among individuals diagnosed with advanced-stage cancer. A large drop in reporting medical financial hardship was also observed among low-income cancer survivors residing in expansion states. Finally, Medicaid expansion states showed a smaller impact on early-stage cancer diagnosis by the COVID-19 pandemic.

Overall, research by Dr. Han and colleagues has shown convincing evidence that the ACA has led to improvements in cancer care and outcomes across the cancer continuum, including increased health insurance coverage, increased cancer screening services, earlier stage at diagnosis, improved access to timely treatment, improved cancer survival, reduced cost of care, reduced health disparities, and increased protection during the COVID-19 pandemic. However, more research is needed to evaluate ACA effects among racial and ethnic minorities, socioeconomically disadvantaged groups, and medically underserved populations. More work is also needed to further characterize outcomes in non-expansion states, to understand the benefits of the ACA on populations not considered primary beneficiaries, and to analyze ongoing policy threats to the ACA.

Bringing Cancer Prevention, Screening & Survivorship to Primary Care

Dr. Ramon S. Cancino is Professor in the Department of Family & Community Medicine at UT San Antonio and Executive Director of the Primary Care Center at UT Health San Antonio.

Cancer prevention in the primary care setting

The core premise of Dr. Cancino's presentation was that primary care is where cancer prevention becomes realized. Latino populations in the US exhibit persistently lower screening rates than non-Hispanic White populations. Screening and prevention efforts must be rooted in primary care. Whereas policy changes may expand access to cancer care, that access is operationalized in the

primary care setting. Primary care is defined as the provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community.

Collaboration between research and primary care

In recognition of this need, the Mays Cancer Center and primary care physicians at UT Health San Antonio developed a joint prevention and screening committee that includes both clinicians and researchers. In addition, Dr. Cancino's work has led to the development of redesigned workflows at 8 academic primary care sites to focus on care delivery to patients with Medicaid insurance, low-income patients, and uninsured patients. As part of this work, improved rates of cervical and colorectal cancer screening were observed.

With the support of American Cancer Society, a multidisciplinary team was also formed to align processes around patients at high risk for lung cancer and in need of lung cancer screening. Over 4 years, an infrastructure was developed to collect data, screen patients, and improve patient navigation. This initiative resulted in an increase in screening rate to nearly 40%, almost twice the national average and 3 times the Texas average for lung cancer screening. These gains were not associated with new guidelines, staff members, or clinicians, but were the result of aligning sustainable processes across primary care to target a cancer screening intervention.

Structural barriers account for 70% to 90% of cancer screening hesitancy. Dr. Cancino and colleagues developed a clinical trial utilizing community health workers to navigate male patients who lived in areas of persistent poverty to colorectal cancer screening, to explain the benefits of screening, to assess non-medical drivers of health, and to help direct patients to local resources. Initial analysis of this research shows that 81% of male patients in the intervention group received a colorectal cancer screening compared with 11% in the usual care group.

Primary care and improved cancer outcomes

A diagnosis of cancer does not suspend other chronic health conditions such as diabetes and hypertension. Work by Dr. Cancino and colleagues has shown that patients treated in the Mays Cancer Center who did not see a primary care physician during cancer treatment had worse outcomes than patients who did. Patients who did not see a primary care physician had more emergency room visits, worse blood pressure control, and worse diabetes control. As a response to this finding, the Mays Cancer Center and UT Health Primary Care Center partnered to develop the Medical Management Program, which allows for the provision of primary care services for patients during active cancer treatment and matches patients with a primary care physician when active cancer treatment concludes.

Patient advocacy is another important aspect of cancer intervention. This includes advocacy to enhance access to primary care, ensure common-sense metrics, and incentivize the healthcare

system to provide patient care. Policy should be aligned with desired outcomes and operational design, and cancer prevention should be embedded in every primary care practice. Furthermore, focus for funding initiatives should include increased funding for infrastructure, not just increased awareness.

Cancer prevention must be integrated with primary care, and primary care must remain a priority throughout the cancer care experience. Indeed, the futures of oncology and primary care must be structurally aligned. Cancer prevention interventions that are integrated within the primary care setting have immense potential for achieving sustained, improved, and cost-effective outcomes.

Access to Healthcare & Cancer Patients

Dr. Elena Rios is president of the National Hispanic Health Foundation.

Disruptions to the healthcare system in the US

Dr. Rios's presentation began by discussing the disruption of the healthcare system by recent federal policy changes. Over the past few years, there has been a $1 trillion cut to Medicaid funding, which will result in an estimated 20 million uninsured individuals, with an 80 hour/month work requirement to reapply. The Affordable Care Act (ACA) tax credits have also been cut, which will cause premiums to double according to the Center on Budget and Policy Priorities, resulting in another 3.8 million uninsured per year from 2026 to 2034.

Declining enrollment and worsening risk pools will force future higher premiums, and there will be an estimated $7.7 billion increase in the demand for uncompensated care in 2026, resulting in less continuity of care and provider sustainability. Beyond 2027, there is expected to be a greater shift of uninsured individuals into employer-sponsored coverage as they seek new employment with health coverage. Even the Medicare Advantage program has seen the lowest enrollment rate raise in years.

The current administration's policies are focused on lowering prescription drug prices for all Americans by codifying the Most-Favored-Nation policy. While this policy is often described as an easy solution for affordability, many of the countries used as benchmarks restrict access to medicines through price controls and have a different healthcare system than the US. Under this policy, local providers may be unable to stock medicines due to price controls and patients may be forced to travel farther for care. Other initiatives of the Most-Favored-Nation policy are the direct transfer of funds to individuals and families to purchase insurance and personal health savings accounts, and a cost-sharing reduction program for healthcare plans.

Recent losses of research funding

The current administration also proposed $2.7 billion in funding cuts from the National Cancer Institute in the first quarter of 2025. Other proposed funding cuts include a cap on indirect costs for the National Institutes of Health (NIH) grants, a temporary halt on agency programs and personnel,

and the elimination of fairness initiatives. These cuts will negatively impact cancer institutions, academic health centers, cancer researchers, and ultimately the health of cancer patients.

As a result of funding cuts, 30 NIH clinical trials have been interrupted, affecting over 74,000 cancer patients. Cuts have also led to a shortage of nurses, the loss of treatment for patients in rural areas, and postponed drug approvals. Approximately 1800 grants have also been terminated, resulting in the termination of student salaries and stipends, and a decrease in PhD programs.

Policies with a positive impact

Some policies may be able to make a positive impact on the healthcare landscape. The LEAP Act is a bipartisan effort to ensure graduate students have a borrowing capacity equal to their professional peers. This will expand the pipeline for critical health professionals, support rural and overlooked populations, and improve cultural competence in healthcare. The policy will also reduce financial barriers for students, enabling the completion of graduate and professional degrees, and opening more careers to Americans from varied backgrounds.

Another bill moving through Congress is the Dignity Act, which aims to keep families together and protect citizens in light of recent actions taken by immigration enforcement. Since 60% of non-citizen spouses are primary caregivers, this bill allows non-citizens to obtain regulatory status, excluding individuals with a criminal history or who are a security risk. This bill would reduce the strain on caregivers who are critical to patient care, and support underserved locations and workforce staff.

The Nancy Gardner Sewell Medicare Multi-Cancer Early Detection Screening Coverage Act was included in a recently passed appropriations law which allows Multi-Cancer Early Detection (MCED) screenings and establishes a clear pathway for Medicare to cover FDA-approved blood-based tests that can detect multiple cancers early. The Act includes the Mikaela Naylon Give Kids a Chance Act and reauthorizes the Childhood Cancer STAR Act, boosting research into rare pediatric diseases. The legislation also enacts major reforms to Pharmacy Benefit Managers (PBMs) in Medicare Part D, addressing opaque practices that have increased costs for cancer drugs, and extends Acute Hospital Care at Home (AHCAH) waivers through September 30, 2030, which allows for, among other things, remote cancer care.

Congress has also increased funding for the National Cancer Institute (NCI) in 2026 compared to 2025, and funding levels are trending upwards for Congress to fully fund cancer research. This is a result of advocacy efforts, which are key to initiating and propelling legislative initiatives through Congress and enabling policy changes that make a real difference for everyday people. Policy efforts must focus on the restoration of funding for research and increasing healthcare coverage for all residents of the US.

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PANEL E

Our Air, Our Water, Our Health: The Environmental Impact on Cancer Risk

Advancing Environmental Change and Cancer Research Through Latinx Expertise

Dr. Leticia M. Nogueira is Director of Health Services Research at the American Cancer Society.

Environmental and cancer care

Dr. Nogueira's presentation focused on the connection between environmental change and cancer, and how expertise from the Latinx population is fundamental for advancing solutions that are relevant to everyone. Environmental change alters the behavior of extreme weather events. Extreme weather events can damage medical infrastructure, break transportation links, disrupt supply chains, and interrupt access to medical care. The changing frequency and behavior of extreme weather events is making it harder to prepare and respond to increasingly unpredictable circumstances, which is especially concerning for medically vulnerable populations who rely on uninterrupted access to care, such as cancer patients.

A study was performed by Dr. Nogueira and colleagues at the American Cancer Society (ACS) using the National Cancer Database, a hospital-based cancer registry co-sponsored by ACS and the American College of Surgeons, combined with Federal Emergency Management Agency (FEMA) data. The study found that mortality was 20% higher among lung cancer patients whose facility was impacted by a hurricane during radiation treatment compared to similar (propensity score matched) patients treated at the same facility when no disasters occurred.

Emergency preparedness

Enhancing emergency preparedness plans are vital to minimizing the impact of disasters on cancer treatment. Preparedness is one step in disaster risk management, a cycle of efforts that include response, recovery, and prevention. Dr. Nogueira found that few National Cancer Institute (NCI)-Designated Cancer Centers' websites provide information on climate-related disaster preparedness (e.g., hurricanes, wildfires). The information that was provided focused on individual-level actions, such as creating a portable medical card that includes diagnosis and treatment information, pre-registering for a special needs shelter with on-site medical staff, understanding how to request additional medication if evacuation is required, and knowing what to include in an emergency kit.

However, shifting the burden from patients who are already managing the physical, psychological, and socioeconomic consequences of a cancer diagnosis and treatment towards healthcare institutions has greater potential for implementing disaster preparedness strategies. Moreover, the Centers for Medicare and Medicaid Services (CMS) already requires participating providers to maintain emergency preparedness plans. However, CMS does not require that these institutions share plans or lessons learned from disasters, which could allow for the continuous improvement of adaptation efforts. The ACS is launching an asset preparedness collaborative in partnership with

the American College of Surgeons in order to create a repository of strategies that already exist, and create training materials to disseminate these findings and foster ongoing learning and implementation of disaster risk management strategies for cancer care.

The environmental change and cancer connection

Polluting activities, such as reliance on fossil fuels, are not only causing environmental change, but also increasing exposure to carcinogens. The extraction, transportation, processing, storage, and waste management of fossil fuels release carcinogens in local communities. Furthermore, as environmental change alters the frequency and behavior of extreme weather events—potentially breaching existing pollution containment infrastructure—communities surrounding these sites may be exposed to even higher levels of carcinogens..

The solution to pollution

Environmental Justice initiatives are vital to address issues at the intersection of environmental change and cancer. Solutions developed through Environmental Justice principles benefit everyone, not only those in areas more directly affected by pollution and environmental change. In fact, populations in areas being impacted first and worst by environmental and environmental hazards have already developed vital expertise and a plethora of relevant solutions. For example, populations that are targeted for marginalization are more likely to be exposed to air pollution from highways. Latinx populations have led initiatives in the San Antonio area to oppose interstate highway expansion, which affects many local Latinx-majority areas. However, all populations in San Antonio will benefit from these initiatives, as air pollution from highways disperses throughout the San Antonio area and affects the entire population.

Individuals and healthcare systems can have an impact on polluting activities driving environmental change and cancer burden. The healthcare system is the second largest energy consumer in the US. Energy consumption from the US healthcare system alone is larger than energy consumption in the entire United Kingdom. Therefore, increasing use of clean energy sources, especially those that are generated on site, could help reduce emissions and increase resilience to power outages, which are becoming more frequent with environmental change. Conscious choices about food procurement and consumption are also important. The industrialized food system is responsible for approximately 30% of greenhouse gas emissions globally, and consumption of ultra-processed foods is also associated with increased cancer risk .

Dr. Nogueira ended the presentation with a call to action. Each person can get more involved with reducing emissions, from places of work to individual activities, and can support policies that reduce emissions. Engaging with environmental adaptation and emergency preparedness efforts is also important. environmental change is here, and the health consequences of environmental change must be documented and studied in order to inform solutions that can be beneficial to all.

Under the Burning Sun: Cancer Risk Among Farmworkers

Dr. Roxana Chicas is an Assistant Professor at Emory University's Nell Hodgson Woodruff School of Nursing and a Fellow of the American Academy of Nursing.

Farmworkers in the US

Dr. Chicas's research focuses on the physiological response to heat exposure among farm workers and mitigations to protect them while they work under the heat. There are about 3 million farmworkers in the United States, and it is estimated that about 50% of them are undocumented workers. Although everyone in the US benefits from the work of undocumented workers, this population faces some of the most serious health risks of any occupational group and garners minimal attention in public health research and the cancer discourse.

Farmworker exposures

Farmworkers are exposed to pesticides, UV radiation, silica dust, diesel exhaust, and contaminated water and soil. These exposures are compounded by other risk factors such as obesity, alcohol use, and tobacco use, resulting in a high cumulative burden.

Farmworkers encounter pesticides in 4 main ways: through direct application and working in the fields, through pesticide drift that leaves the field and goes into their homes, through the clothing in which they work and then return to their homes, and through bioaccumulation from chronic, repeated exposure over time. These carcinogens involve arsenic, lindane, dichlorodiphenyltrichloroethane (DDT), and more, and the risk is compounded by inadequate training and limited access to protective equipment. According to the Environmental Protection Agency (EPA), every farmworker should get pesticide safety training. However, studies have shown that about half of farmworkers report having received no such training.

Another risk is UV radiation from sun exposure. Farmworkers spend the majority of working hours outdoors, often during peak sun hours. This prolonged UV exposure significantly increases melanoma risk. However, sun protection resources such as shade, sunscreen, and protective clothing are often not provided or not prioritized.

Some farmworkers attempt to provide their own protective equipment such as bandanas to protect from breathing in dust, chemicals, and exhaust. Others work with trash bags to protect themselves from chemical exposure. However, many farmworkers have limited health literacy about skin cancer warning signs, making them less likely to catch problems early.

Exposure and cancer

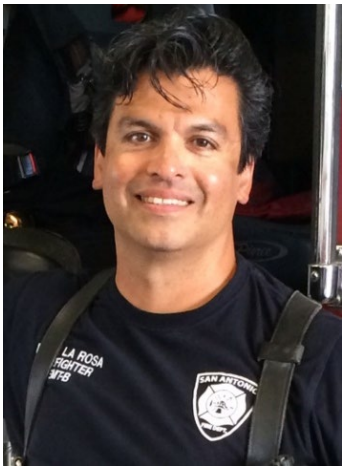
Recent studies have found associations between pesticide exposure and lymphoma, colorectal cancer, and skin cancer. Interestingly, agricultural workers overall have a lower cancer incidence than the general population. However, elevated risk of specific cancers such as prostate, myeloma, and melanoma, are directly linked with specific pesticide exposures.

Climate change directly impacts farmworkers. Rising temperatures are not only a safety hazard to farmworkers, but also amplify pesticide-related risk and accelerate pesticide volatilization, meaning more chemicals are inhaled. Sweating also increases dermal absorption of organophosphates, and dehydration impairs DNA repair capacity. These factors are compounded by the fact that drought conditions will lead farmers to use even more pesticides.

Some pesticides, such as glyphosate, increase the risk of all cancers, including leukemia and pancreatic cancer. Glyphosate is the active ingredient in Roundup, and is at the center of major scientific and legal controversy. While the World Health Organization (WHO) classified glyphosate as probably carcinogenic to humans in 2015, the EPA classified it as not likely to be carcinogen in 2020. Meanwhile, 280 million pounds of glyphosate are applied annually in the United States. Due to legal decisions, Bayer decided to remove glyphosate from residential Roundup in 2023. However, agricultural formulations of glyphosate are still being widely used, directly affecting farmworkers. Furthermore, since farmworkers often live in housing near their work, the groundwater for drinking may be contaminated with agricultural runoff, pesticide residue, and nitrates, and pesticide drift may reach homes and schools, exposing children from birth.

Dr. Chicas's presentation ended with a discussion of priorities for future research. First, subtype specific analyses of blood cancer are needed, including US based cohorts that are focused specifically on farmworkers. Longitudinal interaction studies are also needed, evaluating how heat stress, pesticides, and carcinogens work together to increase cancer risk. Finally, clinical trials are needed to assess cancer screening interventions in farmworker populations.

Firefighters and Cancer: Extinguishing Cancer



Martin De La Rosa is a San Antonio Firefighter Department firefighter, EMT, and quartermaster. **Steven Torres** is also a San Antonio Firefighter Department firefighter.

Cancer risk among firefighters

Mr. De La Rosa began the presentation with a discussion of firefighters and cancer. Firefighters are diagnosed with and die from cancer at a higher rate than the general population. In fact, cancer is the leading cause of death among firefighters. The goal of the presentation was to increase awareness of this issue and promote research into cancer prevention among firefighters.

Firefighters respond to fires, traffic accidents, and natural disasters such as fire storms, wildfires, floods, heat waves, and ice storms. In addition to the dangers inherent to the profession, firefighters also face hidden risks from repeated exposure to carcinogens. Historically, kerosene was often used as a cleaning agent for tools and equipment, increasing exposure to hazardous chemicals. Furthermore, many older firefighters performed their jobs for years without self-contained breathing apparatus (SCBA) tanks. Instead, they relied on methods such as covering their faces with their coats, breathing through a rag, or simply holding their breath.

Updated firefighter equipment now includes the use of SCBA tanks and larger suits that fully encapsulate the firefighter for greater protection. These newer suits reduce skin exposure to combustion byproducts and provide improved overall protection. However, until recently, many firefighter suits contained polyfluoroalkyl substances (PFAS). Although these chemicals made the suit lightweight, flexible, and waterproof, they could also leach into the firefighters' bodies and have been associated with increasing cancer risk.

Firefighters are also exposed to combustion byproducts released from burning insulation, wiring, plastics, and metals. Many of these byproducts are highly carcinogenic, making decontamination essential after responding to a fire. Additionally, when assisting communities after a flood, firefighters are also exposed to toxins in the water.

Because firefighters typically work 24-hour shifts, sleep is disrupted even when no fires are present. Rest obtained during the shift is insufficient due to the constant sense of alertness that firefighters must maintain. This stress and lack of sleep weakens the immune system and makes firefighters susceptible to cancers and infections.

The quartermaster program

A cancer initiative in San Antonio called the quartermaster program is prioritizing gear with no PFAS. In fact, the San Antonio Fire Department is one of the first fire departments in the world to initiate a quartermaster program. This program is always open, just like the fire division, and involves a group of individuals who are stationed at a warehouse. In any situation in which a firefighter may be contaminated, individuals stationed at the warehouse grab a second set of gear and drive to the location to give it to the firefighters. They then take the dirty gear to a facility to get washed, cleaned, and decontaminated. In this way, firefighters have clean gear for the next run without contaminating themselves. The aim of this program is to lower cancer risk, which is still extremely high for firefighters.

A personal story

Mr. Torres ended the presentation by relating his story as a firefighter with cancer. He was diagnosed with duodenal adenocarcinoma in 2009, at age 39, due to occupational exposures. After a Whipple procedure for 13 hours, chemotherapy was initiated, followed by radiation. The cancer returned in 2012 in the colon, resulting in a total colectomy, and returned again in 2014 in the bladder, resulting in a transurethral resection. Mr. Torres related the emotional and physical pain of going through the cancer journey multiple times, and the hardship endured by his family. His story highlights the importance of cancer prevention for firefighters.

PANEL F

Research and Advocacy

Clinical Research as a Lifeline: Navigating Relapse and Remission Through Evidence-Based Care

Arnoldo Rodriguez is a cancer survivor and chimeric antigen receptor (CAR)-T cell therapy recipient.

A cancer story

Mr. Rodriguez's presentation relayed lessons he learned as a cancer survivor. In 2010, he was diagnosed with prostate cancer. Both his primary care doctor and oncologist were unempathetic and terse, leaving him feeling alone in his cancer journey. After conducting his own research, he chose to seek treatment at MD Anderson in Houston because of its reputation for high-quality cancer care and the lack of a specialized cancer hospital near his home in the Rio Grande Valley of South Texas. The physicians at MD Anderson recommended that he undergo a prostatectomy.

Following surgery, Mr. Rodriguez returned to MD Anderson for follow-up care and prostate-specific antigen (PSA) monitoring. Initially, his PSA levels were checked every six months and later on an annual basis. In 2019, while working as a sales representative for an education company, he began to notice unexplained weight loss. He also discovered lumps in his neck and armpits. After seeking medical attention, he was diagnosed with follicular lymphoma. Unfortunately, his wife received the same diagnosis at approximately the same time.

Complications from COVID

During the first week of treatment for follicular lymphoma, while staying in a hotel near MD Anderson, Mr. Rodriguez experienced difficulty breathing. He went to the MD Anderson emergency department and was diagnosed with pneumonia and the corona virus, which had caused a significant fluid buildup in his abdominal cavity. He underwent a paracentesis to remove the fluid.

For several months afterward, daily drainage procedures were performed by his wife, causing him considerable pain. During this period, Mr. Rodriguez also developed diverticulitis, fractured a vertebra, and lost much of his muscle mass. He was beginning to experience what he described as "the new normal" following cancer and its many complications.

Although treatment was initially effective, Mr. Rodriguez experienced a relapse in 2020. The ongoing COVID-19 pandemic created additional challenges and uncertainty for both Mr. and Mrs. Rodriguez, as it did for many cancer patients worldwide. Some follow-up appointments had to be rescheduled or conducted virtually through Zoom. By the end of 2020, Mrs. Rodriguez had achieved remission and has remained in remission to this day. Mr. Rodriguez also entered remission in 2020 after undergoing multiple rounds of chemotherapy.

A clinical trial

When another relapse occurred in 2021, physicians prescribed an oral cancer medication that cost approximately $10,000 per month, making it financially inaccessible for Mr. Rodriguez. Instead, he was determined to be a candidate for a CAR T-cell therapy clinical trial.

Although participation in the clinical trial presented several challenges — including leaving his home in deep South Texas and living in Houston for a couple of months to remain close to the cancer center — he readily agreed to the treatment. Given the evidence supporting the efficacy of CAR T-cell therapy, he viewed the clinical trial as a lifeline to remission.

Mr. Rodriguez achieved remission from lymphoma in January 2022. However, in December 2025, he learned that his prostate cancer had recurred. Fortunately, the University of Texas Rio Grande Valley Health Cancer and Surgery Center had opened in McAllen, Texas, in October 2025. Like MD Anderson, this center is part of the University of Texas System and offers evidence-based care and access to clinical research trials. As a result, Mr. Rodriguez was able to remain at home while receiving a 28 day course of radiation therapy and the accompanying hormone therapy.

Lessons Learned

Mr. Rodriguez concluded his presentation by sharing lessons from his long and difficult cancer journey. The most important lesson, he explained, was the importance of self-advocacy and advocating for others facing a cancer diagnosis, as well as for survivors and caregivers.

He emphasized that clinical research participation should not be viewed as a last resort. For him, CAR T-cell therapy was a lifeline, and it has since become a standard-of-care treatment option for several types of relapsed or refractory non-Hodgkin lymphoma, including the disease that affected him.

Finally, Mr. Rodriguez explained how his cancer experience has shaped his advocacy mission. He hopes to share the lessons he has learned to help cancer patients and survivors develop the skills and confidence necessary to advocate for themselves. Through informed advocacy, patients can make treatment decisions based on evidence-based care and seek treatment at specialized cancer centers or university-affiliated teaching hospitals whenever possible.

An Odyssey to Diagnosis: AML Patient Experience from Treatment to Advocacy

Karen Estrada is a cancer survivor.

A devastating diagnosis

Mrs. Estrada's presentation was a first-person account of her journey as a cancer survivor. The following is a slightly edited version of her account:

There is a moment in my life I return to often. I was standing in a crowded emergency room waiting area when a doctor told me I had AIDS. I will never forget my husband's face; the room felt smaller and the future felt uncertain. A few days later, I was admitted to Sylvester Comprehensive Cancer Center, where my care was immediately taken over by a specialized oncology team. Within days, I learned the real diagnosis, acute myeloid leukemia, an aggressive and life-threatening cancer that changed everything in an instant.

I was born in Medellin, Colombia, and now I live in Miami, Florida. I carry both cities with me as a mother, a professional woman, and a leukemia survivor, and everything I do is shaped by my identity as a Latina. At the time of my diagnosis, I was healthy. I was a cross-fitter, raising 2 boys, traveling for work when necessary, and I felt I was in my prime, strong, and unstoppable.

An unexpected week of fever led to isolation in a 10 by 10 hospital room at Sylvester. I was told my life depended on the expertise, research, and coordinated care happening inside that institution. I remember staring at the walls trying to understand how life changed so quickly. I did not even understand what leukemia meant, or how aggressive it was. When I heard the word cancer, my reaction was denial with determination.

I said, "No, let's do what we have to do. Everything is going to be fine."

Tenacity through treatment

Chemotherapy began right away. Even as my world collapsed, the doctors and nurses created order in this chaos. When the first round failed, I was told I may have 3 weeks to 3 months to live. I heard the words, but all of me could not accept them. I did not. I told myself I was GI Jane. My doctors did not give up.

After weeks of testing, the team at Sylvester found a clinical trial. My first reaction was fear. I told them, "I don't want to be a guinea pig," but they educated me, respected my voice, and treated me as a partner in my care even when I was trying to express myself in a language that was not my first.

The decision to enroll saved my life, and the trial gave me enough time to receive a bone marrow transplant. A stranger said, "Yes." A 23-year-old woman that serves this country–she stopped her work and came for 5 days to be able to give me bone marrow. She was a 70% match–a woman probably I will never meet who gave me life. Her decision is the reason I'm standing here speaking to you today.

Renewed purpose through advocacy

I spent more than 9 months in isolation without seeing or touching my children, not even once. There are no words for the distance between a mother and her children during that time. That's why advocacy, education, and representation in research matters. I'm not here because I have all the answers. I'm here to learn how to advocate better and be a strong bridge between medicine and humanity. I want to turn survival into service.

Too often, Latinos and other underserved populations are underrepresented in research, leading to gaps in understanding cancer biology and survivorship outcomes. As Latinas, we're often taught to endure quietly and to trust authority. Patient advocacy teaches us something radical. Your voice belongs in the room.

Cancer took my health, my confidence, my intimacy, a sense of control. It stripped life down to what matters the most. Even after remission, cancer has given me perspective, empathy, and purpose. It changed how I see every ordinary day. Healing is not just surviving, it's adapting and rebuilding. I'm standing here today as a Latina immigrant, a survivor, a mother, and an athlete because advocacy gave my story a direction. I turned pain into something that could serve others.

I'm alive today because of the care, research, and commitment I received at Sylvester. I carry that gratitude with me into every room I enter. I invite you as researchers, as clinicians, to continue to engage in partnerships with patients and to build research programs that welcome [participation from different backgrounds]. I hope people from Sylvester that are here are listening to this, because when we empower patients, we change lives, and sometimes we give families more time together: more hugs, more birthdays, more nights to put my kids to sleep. So thank you for listening and for helping voices like mine be heard.

Karen developed a free app for patients called live again. The app helps users journal, access resources, track their recovery, and stay organized throughout their journey. The app can be found at: www.liveagainapp.com

UT Health San Antonio
Institute for Health Promotion Research

UT Health San Antonio
Mays Cancer Center

SPECIAL VIRTUAL SESSION

International Latin American Researchers

Special Virtual Session featuring International Latin American Researchers

Dr. Carolina Wiesner is the General Director and a researcher at the Instituto Nacional De Cancerología (INC) de Colombia.

The presentation highlighted the Instituto Nacional de Cancerología (INC) of Colombia as the country's leading public cancer center and a strategic partner for international research collaboration.

The presentation also outlined the INC's research ecosystem, including its National Cancer Research Network, active institutional research portfolio, participation in international scientific collaborations, the Terry Fox National Tumor Bank with more than twenty-five thousand five hundred fifty-seven (25.557) samples available for researchers, and recently expanded research infrastructure with advanced genomics, single-cell, bioinformatics, bioprinting, and flow cytometry capabilities. These resources support translational research and provide opportunities for collaborative studies involving biospecimens, clinical data, and population-based research relevant to Hispanic and other underrepresented populations.

Several ongoing research initiatives were presented as examples of potential collaboration, covering hereditary and sporadic breast and ovarian cancer, malignant pleural mesothelioma, functional genomics, artificial intelligence for breast cancer screening, B-cell acute lymphoblastic leukemia, and microbiome and circulating microRNA biomarkers for colorectal cancer screening. Across these initiatives, the INC emphasized opportunities for joint grant applications, cohort expansion, shared access to research resources, technology and knowledge exchange, and collaborative development of precision oncology strategies. The overall objective is to establish long-term international partnerships that accelerate cancer research, strengthen scientific capacity, and improve cancer prevention, diagnosis, and treatment for Latin American and Hispanic populations.

Finally, as Executive Secretariat of the Latin American National Cancer Institutes Alliance (INC-LATAM), the alliance promotes regional cooperation through joint research, capacity building, training, and the exchange of best practices. Current regional proposals include the strengthening of the Latin American and Caribbean biobank network (REBLAC), the development of shared research databases and patient registries, an international molecular data course, and the CYTED-funded REBECCA-IA network, which advances the application of artificial intelligence for personalized cancer control across Latin America.

UT Health San Antonio Institute for Health Promotion Research

UT Health San Antonio Mays Cancer Center

SPECIAL SESSION

Chatting with Cancer Center Directors

Ruben A. Mesa, MD, FACP

Dr. Ruben Mesa is the Director of the Atrium Health Wake Forest Baptist Comprehensive Cancer Center, which serves 30 counties in Western North Carolina and South Carolina. Dr. Mesa stressed that no matter the headwinds affecting cancer research, leadership must keep focus on the North Star: to make an impact on cancer. This can be achieved through collaboration, and through remembering that the only competition is against cancer, not each other.

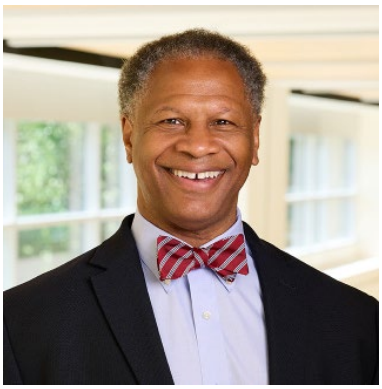
Community Outreach and Engagement (COE), along with the local partnerships involved in these efforts, is central to this mission. Bidirectional communication with local partners enables Cancer Centers to combat misinformation among the local population. Providing reliable information with humility helps foster credibility and trust. Meaningful engagement also requires listening. When a Cancer Center seeks to implement an intervention, local partners play a critical role in gathering input and determining the most effective ways to approach individuals in the area. Building trust is essential for successful interventions.

Carlos Arteaga, MD

Dr. Carlos Arteaga is the Director of the Harold C. Simmons Comprehensive Cancer Center, which serves the Dallas/Fort Worth area of Texas. Dr. Arteaga stressed 3 important aspects of leadership of a Cancer Center: fairness, decisiveness, and generosity. A Cancer Center must engage in outreach to the catchment area that it serves through Community Outreach and Engagement (COE). Key to that effort is the appointment of an advisory board that is representative of the local area, including local influencers, religious leaders, corporate leaders, and more.

Two initiatives of the Cancer Center that were highlighted by Dr. Arteaga include a breast cancer prevention service and collaboration with regional centers to share clinical trials. Breast cancer prevention services and screenings are offered in 104 counties in Texas, working with hospitals in the region. Collaboration with regional centers means that individuals at those centers have access to the same clinical trials as individuals at the Cancer Center in Dallas.

Robert A. Winn, MD



Dr. Robert A. Winn is the Former Director of the Virginia Commonwealth University (VCU) Massey Comprehensive Cancer Center and Current Director of the Fox Chase Cancer Center. Dr. Winn discussed the importance of pragmatism in leadership and the value of maintaining a clear-eyed, focused perspective. Part of that pragmatism is humility, which creates the freedom to ask questions without fear. Asking questions and remaining committed to continuous learning enables good leaders to solve problems and move initiatives forward. These qualities are especially important in the current political climate.

One vital area cancer centers should focus on is sharing stories with the public to promote greater understanding of cancer research and the significant progress that has been made. Because of these advances, approximately 70% of individuals diagnosed with cancer in 2026 are expected to become cancer survivors. This reflects the positive momentum behind cancer research. Cancer centers also provide substantial value to the communities in which they are located by stimulating economic development and creating jobs and opportunities. When the public understands the importance of cancer research and cancer centers, legislators are more likely to recognize and support the value of these efforts as well.

Lei Zheng, MD, PhD

Dr. Lei Zheng is the Director of the Mays Cancer Center at UT Health San Antonio, which serves the South Texas catchment area. Dr. Zheng emphasized that although there have been challenges in healthcare and cancer research, challenges also present opportunities. Loss of federal funding has spurred more collaboration and partnerships with local organizations such as military healthcare institutions and Texas biomedical institutions. This collaboration has enabled the pooling of resources, but it has also enabled a more focused approach to research, with more emphasis on cancers that affect the local population.

Local partnerships also support long term initiatives, such as training oncologists from the South Texas area who will return to serve their communities. There is a significant need for oncologists in this catchment area, especially those who understand the cultural landscape. Short term initiatives are equally important, including cancer screening programs for diseases with a high prevalence in the region, such as liver cancer. These collaborations enable a multidisciplinary, team-based approach to patient care.

UT Health San Antonio Institute for Health Promotion Research

UT Health San Antonio Mays Cancer Center

THINK TANK

Cancer Researchers Against Cancer

Think Tank: Cancer Researchers Against Cancer

Dr. Amelie G. Ramirez is Director of the Institute for Health Promotion Research, Chair of the Department of Population Health Sciences at UT Health San Antonio, and Associate Director of Cancer Outreach and Engagement at Mays Cancer Center UT Health San Antonio. Dr. Ramirez spoke about a program called Task Force: Researchers Against Cancer, which brought together leaders from across the country to explore not only the causes of cancer in Latino populations, but also the multi-level drivers that are impacting health in this population.

One of the key findings from year one of the Task Force was that cancer stands alongside heart disease as the top killers of Latinos, driven by high rates of infection-related cancers. These elevated rates of infection and certain cancers are largely linked to non-medical drivers of health, such as low insurance, environmental exposure, and poverty. Another finding was that the broad "Latino" label hides heterogeneity, and clinical trial participation remains low. Survivors also face unmet mental health needs, financial toxicity, and limited palliative care. Finally, closing gaps requires a workforce that better reflects the U.S. population, more populations participating in clinical trials, and culturally and linguistically tailored interventions.

In year 2, the Task Force recommended several approaches to addressing the findings from year 1. The first recommendation involved investing in trust-based local engagement to remove practical barriers to care and prioritize low-cost, high-impact prevention initiatives. Another recommendation was to deliver bilingual, culturally relevant education for both patients and providers, including information on prevention, risk factors, genetics, self-advocacy, and the reduction of stigma and financial toxicity. The Task Force also stressed the importance of decentralizing care and clinical research through partnerships with local organizations, expanded technology-enabled access, and the development of satellite trial sites. Finally, the Task Force called for policy and systemic changes to protect and expand insurance coverage, update screening approaches in areas where earlier onset occurs, increase Latino representation in the healthcare workforce, reduce exposure to environmental toxins among exposed populations, and decrease the burden of healthcare costs.

Task Force members included: Amelie G. Ramirez, DrPH, Patricia Chalela, DrPH, Edgar Munoz, MS, and Adolfo Diaz Duque, MD (UT Health San Antonio); Lorna Rodriguez-Rodriguez, MD (City of Hope National Medical Center); Leon Bernal-Mizrachi, MD (Emory University); José López, MD (University of Washington), Paulo S. Pinheiro, MD, PhD (University of Miami); Barbara Segarra-Vasquez, DHSc (University of Puerto Rico); Gregory Talavera, MD, MPH (San Diego State University); Luis G. Carvajal-Carmona, PhD (University of California, Davis); and Edward J. Trapido, ScD, FACE (Louisiana State University School of Public Health).

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UT Health San Antonio Institute for Health Promotion Research

UT Health San Antonio Mays Cancer Center

INDUSTRY PANEL

New Developments in Precision Medicine that Address Underrepresented and All Populations

BMS Global Representation and Health

Dr. Angelic Acevedo is a Clinical Development Lead for Oncology as a part of the Organization for Latino Achievement (OLA) People and Business Resource Group (PBRG) at Bristol Myers Squibb (BMS). BMS strives for innovation and outcomes for every community by emphasizing representative research and fair access to care. Representative research means advancing science that is accessible, validated, and effective for all communities. This type of research means building trial-ready communities by fostering clinical research education, awareness, and participation among medically underserved communities through collaboration with trusted members of the community. Depending on where and how the research is conducted, the trial approach must evolve. Site and patient burden should be mitigated by improving the geographic presence of clinical trial sites, considering barriers to eligibility, and capturing data to ensure accountability and transparency.

Fair access involves closing health gaps and enabling innovations to reach all who need them. Barriers specific to the therapeutic area of focus should be addressed by meeting patients where they are, improving access to screening, diagnosis, and treatment across the core pillars of multiple myeloma, lung cancer, neuroscience, and cardiovascular disease to improve patient outcomes. Access must also be expanded in middle- and low-income countries by designing and executing tailored programs to break down infrastructure and affordability barriers.

Improving Representation in Clinical Research: AIR® Is Needed Now More Than Ever

Meghan McKenzie is the Director in Population Science at Genentech. Disease pattern, clinical presentation, and therapeutic response can vary dramatically by race/ethnicity, ancestry, gender, and age. Therefore, advancing fair research via the AIR Site Alliance is important to scientific research. Genentech embeds AIR in research and provides full-time resources in order to broaden evidence generation and population insights, thereby improving medicine development for all patients and increasing participation in research studies. Pillars of this work include driving population science principles into development, assigning leadership advisors to development teams, setting industry standards, and leading strategic partnerships.

The Global AIR Site Alliance is a collaboration model that meets patients where they are, develops an ecosystem based on trust with committed leaders, builds and enhances operations performance, and advances scientific understanding. Site co-created content focuses on four approaches. The first is patient education such as educational animated videos, brochures, and postcards. The second is a physician education video series, with titles like Why Hispanic Representation Matters, Why Representation in Ophthalmology Matters, and a Healthcare Provider AIR Education Platform. The third approach focuses on patient support services, which is being piloted with Alliance Sites and is included in all US, UK, and Canadian study budgets. The fourth approach involves protocol design, including protocol simplification and more representative entry criteria recommendations. Find out more by reading about five data-informed principles for advancing representation in clinical trials from a pharma perspective here.

Gilead's Commitment and Legacy

Dr. Sabrina Meyers is the Senior Director and Head of Community Oncology Strategy, and Community Cancer Collective (CCC) Lead at Gilead Sciences. The oncology pipeline at Gilead has been built to address unmet needs in cancer care, from antibody-drug conjugates and small molecules to cell therapy-based approaches. Over the last few years, Gilead has received 7 indication approvals, started 30 active clinical programs including 11 Phase 3 trials, and initiated 13 combination studies, including 4 combination trials in Phase 3.

The core values of integrity and fairness are key to ensuring that Gilead is a trusted and reliable partner in advancing the vision of creating a healthier world for all people. Commitment to cancer care extends to patients and providers by ensuring fair representation in clinical trial populations, investigators, and trial sites, and by building strategic partnerships to support advocacy. Gilead recognizes the practical challenges faced by oncology providers outside large academic centers, including limited time, constrained resources, and reduced access to innovative treatment.

The Community Cancer Collective (CCC) at Gilead originated over 2 years ago to support providers delivering cancer care in local practice environments. The CCC is a patient-focused, cross-functional initiative designed to improve care delivery by fostering collaboration across the oncology ecosystem. Three strategic pillars are foundational for the CCC: generating evidence to bridge clinical research and real-world practice, improving healthcare access and outcomes, and enabling education for patients and providers.

Revolution Medicines

Dr. Jesse Garcia is a Director at Revolution Medicines, a late-stage clinical oncology company developing novel targeted therapies for patients with RAS-addicted cancers.

Targeting RAS(ON) has been a central focus of Revolution Medicines' research and development efforts. The company's investigational compounds are based on a tri-complex inhibitor platform and include multi-selective and mutant-selective RAS(ON) inhibitors being evaluated across RAS-driven cancers.

Pancreatic ductal adenocarcinoma (PDAC) is among the most RAS-addicted major cancers, with more than 90% of tumors harboring RAS mutations. Patients with metastatic PDAC, particularly in the second-line or later setting, continue to face a significant need for new treatment options.

From SIGNAL to Strategies: Leveraging tumor-informed ctDNA to Eliminate Healthcare Disparities

Dr. Angel Rodriguez is Senior Medical Director of Oncology at Natera. Since causes of cancer disparities are multi-dimensional, the solutions must be as well. Early detection of recurrence is especially important in minority populations, which typically present with higher tumor burden and experience either lack or delayed initiation of systemic therapy. A patient-specific shared decision strategy of circulating tumor DNA (ctDNA)-molecular residual disease (MRD) deployment for surveillance and treatment response monitoring can address some of the well-known factors associated with disparities, and should be considered and prioritized in clinical studies. Natera has initiated a prospective multi-institutional single-arm study, called SIgnatera-Guided INitiation of Adjuvant CDK4/6 inhibitor in Intermediate-Risk ER+/HER2- Breast Cancer (SIGNAL ER 101), to explore this approach.

Although diagnostics and therapeutics are rapidly evolving fields, guideline incorporation is slow. The therapeutic landscape for metastatic cancer has expanded with the development of new treatments such as immunotherapies, targeted therapies, antibody-drug conjugates (ADCs), and novel hormone therapies. However, access to these advances and timely delivery are often not equal across the population. Novel and more precise diagnostic technologies have emerged and have the potential to either narrow or widen the gap in healthcare outcomes. Clinical deployment of ctDNA-MRD is selective and not yet widely adopted, therefore guidelines for its use should be carefully framed to narrow gaps in health outcomes.

AstraZeneca

Paris Johnson is a site engagement lead at AstraZeneca, focused on improving participation in oncology clinical trials. AstraZeneca's goal in clinical trial enrollment is to ensure that innovation in oncology reaches patients across geographies, backgrounds, demographics, and lived experiences. Precision treatment for cancer patients can address individuals in a way that is specific to their needs. Precision engagement can do the same for engaging specific populations by addressing access, representative enrollment, and operational acceptance.

AstraZeneca is focused on creating tools and frameworks to ensure biomarker testing is widely distributed across populations, so that patient care can be improved through biomarker-driven strategies. Decentralized trials are a part of this approach, as well as the integration of patient insights into trial design. Offering trial materials in multiple languages and dialects is also helpful for enrollment variety. Execution of these strategies allows AstraZeneca to monitor, intervene, adjust, and scale trials in a thoughtful manner. At the core of the work is the patient, and the understanding that when site burden is reduced, patient burden is reduced. Precision without access is not precise, and precision without acknowledgment of population differences is incomplete. Sponsors, site leads, local leaders, and regional organizations must work in concert to enable precision medicine and precision engagement.

UT Health San Antonio Institute for Health Promotion Research

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CONCLUSION

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To address cancer issues in all populations, *Advancing Cancer Research for Latinos and all Populations* brought together researchers, scientists, physicians, healthcare professionals, patient advocates, and students from across the US and Latin America. These presenters shared research advancements, identified gaps, developed actionable goals, updated clinical best practices, described effective interventions, and detailed professional training programs aimed at addressing variability in cancer outcomes. In the process, many of the speakers made recommendations, either specific to their field of study or more broadly. The following are some key recommendations abstracted from their conference presentations.

Recommendations

Geriatric interventions

Geriatric assessments are recommended by the American Society of Clinical Oncology (ASCO) and can be used to obtain useful information. A geriatric assessment goes beyond the typical assessment of a cancer patient, and includes a more in-depth functional status evaluation, analyzing cognition, social support, nutrition, finances, medications, and emotional status to obtain a more complete view of the patient. [de Celis, Schiaffino]

AI may be used to abstract information about geriatric patients from unstructured notes. Unstructured electronic medical record (EMR) text contains critical age-related risk information which can be used in the absence of a geriatric or other structured assessment. AI enables the scalable abstraction of these unstructured notes in a way that supports geriatric and oncology initiatives. [Schiaffino]

Non-medical drivers of health

Non-medical drivers of health, such as insurance status, education attainment, socioeconomic status, transportation, access, and other factors must be addressed. These factors contribute to variable outcomes in hepatocellular carcinoma and other cancers. Patient navigation programs and coordination of care can help address barriers to care, building relationships between the navigator, the patient, and the caregiver. [Jones]

A financial navigator can make a powerful difference in helping patients and caregivers navigate the cost of care. Community partnerships such as legal resources can also support broader efforts to improve access to financial assistance resources. [Edward]

Individuals and healthcare systems can have an impact on polluting activities by making conscious choices about energy consumption. Increasing use of clean energy sources, especially those that are generated on site, can help reduce emissions and increase resilience to power outages from environmental change. Conscious choices about food consumption are also important in light of the high emissions associated with meat production, and the increased cancer risk associated with industrialized food consumption. [Nogueira]

After screening, follow-up care is needed. Hispanic women face barriers to follow-up care after an abnormal cervical cancer screening result. In a study of Hispanic individuals in Texas who

received an abnormal cervical cancer screening result, only 65.6% received follow-up care within an optimal diagnostic interval. [Ortiz]

Blood Cancer United is an organization that takes a holistic approach to supporting blood cancer patients. They provide community support, fund lifesaving research, and advocate for healthcare policies. Patient support also extends to caregivers, who embark on the cancer journey alongside the patient and who are the backbone of the cancer journey. [Ortiz-Ravick]

Mental health and general health interventions

My Wellness Check is an integrated electronic health record system that also assesses needs and triages patients. My Wellness Check is embedded in the patient portal, and sends the patient a questionnaire about anxiety, depression, pain, fatigue, and physical function prior to an oncology appointment. The questionnaire also assesses nutritional needs and practical needs, including childcare, transportation, financial needs, and food insecurity. [Penedo]

Yoga programs have been helpful for adult breast cancer patients. Participants show significant improvements in several quality-of-life areas such as physical functioning, vitality, mental health, social functioning, bodily pain, and general health. [Almeida]

Virtual reality simulations create an immersive and interactive artificial environment through a headset to promote physical activity. This may be helpful for individuals who report neighborhood safety concerns and transportation limitations. [Castellon-Lopez]

Just-In-Time Adaptive Interventions (JITAIs) offer seamless and uninterrupted data tailored to an individual's context and may be used in smartphone interventions to track diet, physical activity, and weight. tailored messages can be sent to participants based on the data. [Valle]

Cancer prevention must be integrated with primary care. A diagnosis of cancer does not suspend other chronic health conditions such as diabetes and hypertension, and patients who do not see a primary care physician during cancer treatment have worse outcomes than patients who do. [Cancino]

Clinical trial participation

Digital enablement and AI offer a powerful way to cut through the complexity of matching patients with clinical trials. The time required for manual methods means missed matching due to changing eligibility windows, complex sequences, or dynamic clinical changes. AI can quickly match patients with trials. [Loaiza-Bonilla]

Large language model-generated summaries offer a scalable approach to improve clinical trial communications. When paired with human oversight these summaries can also integrate patient advocate feedback with certified translations and can enhance cultural linguistic appropriateness and align with health literacy best practices. [Flores]

The SWOG Cancer Research Network Latin America Initiative (SLAI) seeks to build a bridge between US and Latin American cancer research. As a major part of the US publicly funded cancer research infrastructure, SWOG designs and conducts multi-institution clinical cancer trials

with the mission of significantly improving lives through cancer clinical trials and translational research. [Chavez Mac Gregor]

Collaboration across institutions and geographic regions allows researchers to access study samples from a broad range of patient populations. These biospecimens can then be analyzed to isolate key components and better understand disease processes. [Trevino]

To advance beyond genome-wide association studies performed in the US, expansion studies should be conducted in other countries. For example, such studies are being used to investigate the impact of known acute lymphoblastic leukemia (ALL) risk loci in populations outside of the US, potentially leading to the discovery of novel genetic associations in these populations. [de Smith]

To improve outcomes, liquid biopsies should be used to make frontline treatment decisions in patients with metastatic NSCLC. Liquid biopsies are non-inferior to tissue biopsies in identifying actionable genetic alterations in patients with NSCLC. Specifically, liquid biopsies are able to generate next-generation sequencing (NGS) results significantly faster than tissue biopsy NGS and bypass the logistical barriers of finding and shipping tissue samples for sequencing. [Raez]

Local organizations such as the Arizona Clinical Trial Network (ACTN) are able to focus on enrolling cancer patients who are typically overlooked. These organizations can also impact policy engagement. [Recio Boiles]

Community outreach and engagement (COE) can disrupt clinical trial segregation by identifying patients with cancer, providing clinical trial education, and building trust. Successful COE has several key requirements: developing a workforce reflective of the identities of the individuals served; building partnerships with local organizations; identifying and responding to the needs of the population; implementing language- and culturally tailored strategies for varying locations; and making long-term investment while fostering enduring relationships. [Guerra]

<u>Policy interventions</u>

The Affordable Care Act (ACA) is associated with positive cancer outcomes. One study found that the ACA-dependent coverage expansion provision was associated with a net increase of 7.6% in early-stage diagnosis and a net increase of 13.4% in receipt of fertility sparing treatment. [Han]

The LEAP Act is a bipartisan effort to ensure graduate students have a borrowing capacity equal to their professional peers. This will expand the pipeline for critical health professionals, support rural and overlooked populations, and improve cultural competence in healthcare. [Rios]

Another bill moving through Congress is the Dignity Act, which aims to keep families together and protect citizens in light of recent actions taken by immigration enforcement. Since 60% of non-citizen spouses are primary caregivers, this bill allows non-citizens to obtain regulatory status, excluding individuals with a criminal history or who are a security risk. [Rios]

The Nancy Gardner Sewell Medicare Multi-Cancer Early Detection (MCED) Screening Coverage Act was included in a recently passed appropriations law. This act allows MCED screenings and establishes a clear pathway for Medicare to cover FDA-approved blood-based tests that can detect multiple cancers early. [Rios]