

publications, subsequent grant applications submitted & awarded, presentations given, and return on investment for ICTS granted funds. Less traditional metrics include number of students trained, new tools or databases created, knowledge disseminated, and advances in clinical care. Since 2020, Translational Science Benefit Model metrics have been collected on community, policy, economic, and clinical domains. Since 2015, data on each CCRI partnership has been collected at the start and end of each project, with questions about attributes of each partner, trust, community engagement principles, and anticipated/actual impact of each project. **DISCUSSION/SIGNIFICANCE:** Organizing outcomes from the data collected will provide deep understanding of important components, functioning, and types and reach of partnered health research. This understanding will inform future action of the CCRI program in terms of what can be accomplished with a given amount of funding, and the constitution of successful partnerships.

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### **Couples' Daily Health in Breast Cancer Survivorship: Dyadic Associations in Psychological, Physical, and Relational Health**

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**OBJECTIVES/GOALS:** Breast cancer survivors who experience psychological and physical symptoms after treatment ends have an increased risk for comorbid disease development, reduced quality of life, and premature mortality. However, survivors in satisfying marriages report lower stress and better health than those in dissatisfying marriages. **METHODS/STUDY POPULATION:** Research is needed to identify how survivors' marriages provide these health benefits across the cancer continuum. Including both survivors and their partners' perspectives can identify key pathways connecting relationships to better health. This study examined survivors' and their partners' psychological, physical, and relational health. Breast cancer survivors (stage 0-III) and their partners (n=34 individuals, 17 couples) completed a baseline online survey followed by a 7-day diary study with three ecological momentary assessments across the day. Questionnaires assessed their cancer-related communication, relationship distress, and psychological and physical symptoms. **RESULTS/ANTICIPATED RESULTS:** Survivors reported poorer sleep quality and greater fatigue than their partners. Survivors also reported disclosing more thoughts, feelings, and information about cancer compared to their partners. For both survivors and partners, feeling more satisfied with each other's cancer-related discussions and reporting lower relational distress correlated with fewer physical symptoms, sleep problems, fatigue, and psychological distress. **DISCUSSION/SIGNIFICANCE:** For both survivors and their partners, feeling more satisfied with how often they talked about survivorship and the cancer experience was associated with better psychological and physical health. This research demonstrates the health benefits and importance of open communication for both survivors and their partners across the cancer continuum.

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### **Drawing on Arts-Based Methodologies to Elicit Transgender and Gender Diverse (TGD) Children's Experiences in Health Care**

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**OBJECTIVES/GOALS:** Understand how prepubescent TGD children experience pediatric care with a dual purpose of informing clinical practice and presenting alternative methods for research with children. Centering their perspectives is critical to improving care for this age group, ultimately improving TGD health. **METHODS/STUDY POPULATION:** A participatory arts-based study involving drawing, photo elicitation, and narrative interviews with prepubescent TGD children (n=15) in the Pacific Northwest. Participants will make photos and draw a picture of their most recent pediatric visit. Participants guide the analysis and interpretation of their artwork, informing subsequent interviews. Interviews are coded and interpreted using inductive thematic analysis at the semantic level, and verified by participants and near-peer community partners. The combination of multiple data sources that represent both stimuli and verifiers of perceptions provide methodological triangulation. **RESULTS/ANTICIPATED RESULTS:** Early pilot data with community partners suggest that TGD children do not feel sufficiently supported in pediatric settings, which impacts their sense of safety and agency in the clinical context. Findings will inform changes to clinical practice to improve gender affirmation for prepubescent children, positively impact child-caregiver relationships, and ultimately improve health care and wellbeing for TGD people. Observations related to the implementation of novel methodologies will inform future research practices intended to include younger children as active agents in the knowledge production process. **DISCUSSION/SIGNIFICANCE:** There are missed opportunities to positively impact children's health and caregiver-child relationships when gender affirming care is overlooked in the pediatric context. This study provides first-hand multi-media perspectives to inform improvements in prepubescent gender affirming pediatric care.

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### **Virtual community and partner-engaged panels - We can do them, but should we?**

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**OBJECTIVES/GOALS:** We describe the transition of ShAred Resource Panels (ShARPs) within the Center for Community Health (CCH) at Northwestern University's Clinical and Translational Sciences (NUCATS) Institute to virtual sessions and explore ongoing practices. **METHODS/STUDY POPULATION:** Restrictions placed during the COVID-19 pandemic led to changes in community-engaged health equity research, such as the transition of community and partner-engaged panels from in-person to virtual. ShARPs have occurred since December 2015. The model includes research team members, community members, community

co-facilitator, and CCH staff. These custom panels bring together 8-10 community members familiar with a research topic or community of focus, offering feedback on adaptations that can improve research relevance and feasibility. Until the COVID-19 pandemic, all ShARPs were conducted in person. From March 2020 to January 2023, panels occurred virtually. From 2023, the option of virtual or in-person ShARPs has been available. Count data and informal interview data were reviewed. RESULTS/ANTICIPATED RESULTS: The number of ShARPs peaked in 2019 and has remained stable. The first virtual ShARP occurred on April 22, 2020, and all subsequent sessions have been virtual. As of October 2023, 6 ShARPs have occurred, with no research teams pursuing an in-person session despite its availability. Participants described virtual ShARPs as convenient and accessible. Academic teams cited concern about low community member participation should they opt for an in-person session. DISCUSSION/SIGNIFICANCE: It is feasible to conduct ShARPs virtually and is the current preferred modality. Whether virtual ShARPs enhance, neutralize, or detract from the effectiveness of the session is unknown and guides our future work. More research is needed, including discussion, and learning from our CTSA colleagues.

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### Defining the Role of Hedgehog Signaling in Breast Cancer Risk of non-Hispanic Black Women

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OBJECTIVES/GOALS: The molecular basis of increased risk of triple negative breast cancer in non-Hispanic Black women represents a critical knowledge gap that this research is designed to address; successful completion of this work could lead to better prevention, earlier stage diagnoses, and possible discovery of novel therapeutic strategies for this population. METHODS/STUDY POPULATION: We have recently generated a living tissue cohort of 11 non-Hispanic Black and 25 non-Hispanic White women who underwent breast surgery at Mayo Clinic. Gene expression profiling of normal breast tissue from this cohort has identified a pattern of gene expression differences that have been associated with the development of basal breast cancer and are also reflective of Hedgehog (Hh) signaling. We will identify protein-based biomarkers for Hedgehog signaling within normal breast tissue using immunohistochemistry methods. We will culture primary human mammary epithelial cells and further separate luminal and myoepithelial cells using flow cytometry to then decipher Hedgehog signaling. RESULTS/ANTICIPATED RESULTS: We anticipate identifying and localizing protein-based biomarkers for Hedgehog signaling within myoepithelial cells of non-Hispanic Black women. Using our findings, we aim to create a biomarker risk model for triple negative breast cancer and validate this model within a separate and larger cohort of women to predict breast cancer risk. DISCUSSION/SIGNIFICANCE: In addition to immediate benefits from improved risk prediction, the proposed work has the potential to provide new insight into the driving forces underlying basal breast carcinogenesis and the distinct biological differences that distinguish non-Hispanic Black women from non-Hispanic White women.

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### Gender Disparities in the Acquisition of Lower Extremity Prosthetics Following Major Limb Amputation

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OBJECTIVES/GOALS: The time between lower extremity amputations and prosthetic acquisition profoundly influences patient rehabilitation and mortality outcomes. Our primary outcome was time to prosthetic acquisition following major limb amputation. We hypothesize that women face an increased time lag between amputation and prosthetic acquisition compared to men. METHODS/STUDY POPULATION: We used the 2015-2021 Truven Marketscan Medicare and Commercial Claims Administrative dataset to identify individuals with lower extremity amputations based on CPT codes. We excluded patients < 18 years old, those with prior/concurrent major extremity amputations, and those with ≤ 31 days discontinuity in enrollment. To estimate time to prosthetic acquisition after initial amputation, Weibull Accelerated Failure Time multivariable regression models were used to estimate unadjusted and adjusted time ratios and 95% confidence intervals comparing men to women. We adjusted models for age, Medicare supplement/commercial payer, Metropolitan Statistical Area (MSA), amputation type, social deprivation index, and Elixhauser comorbidities. RESULTS/ANTICIPATED RESULTS: We identified 4,054 patients with major lower extremity amputations (75% below knee and 25% at or above knee). Patients were predominantly male (72%). For patients who received prosthetics, 39.06% of men and 31.28% of women received prosthetics within the first three months of amputation ( $p < 0.001$ ). Time ratios > 1 indicated longer time to prosthetic acquisition between comparison groups. The adjusted time ratio for women compared to men for the time to acquisition of prosthetics was increased; this was statistically significant (TR 1.3281, 95% CI 1.1667, 1.5118). This time ratio suggests that if a man received a prosthetic in 100 days, a woman would receive her prosthetic in 133 days. DISCUSSION/SIGNIFICANCE: We found a significant difference in the time to prosthetic acquisition following major limb amputation and acquisition rate in the first three months of amputation among men and women. Successful rehabilitation, quality of life, and healthcare costs are influenced by the timeliness of prosthetic acquisition.

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### The Appalachian Translational Research Network (ATRN) Newsletter: Supporting Communication and Collaboration among Academic and Community Partners to Improve Health in Appalachia

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