

a framework for patient involvement in intervention design, we aim to create a replicable model to enhance the translation of research into practice.

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Advancing breast cancer risk identification and care in non-Hispanic Black Women

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OBJECTIVES/GOALS: This project will enrich our understanding of basal breast carcinogenesis, highlighting the distinct biological differences in breast cancer risk between non-Hispanic Black (NHB) or non-Hispanic White (NHW) women, but also has the potential to provide real-world solutions thereby contributing to reducing health disparities in breast cancer outcomes **METHODS/STUDY POPULATION:** In the biological investigation, I am utilizing a unique cohort of normal breast tissues from Mayo Clinic patients who underwent breast reduction surgery that have self-identified as NHB or NHW premenopausal women. From these tissues, we are able to subculture human mammary epithelial cells, which we will use for our consequent experiments. For the qualitative study, I aim to recruit up to 40–50 eligible NHB women identified at increased risk for breast cancer and conduct semi-structured qualitative interviews informed by the National Institute on Minority Health and Health Disparities Research Framework. **RESULTS/ANTICIPATED RESULTS:** Gene expression profiling on our cohort of 15 NHB and 40 NHW premenopausal women identified a gene expression signature in NHB women indicative of elevated Hedgehog signaling, a key factor in triple-negative breast cancer (TNBC) development and progression. I hypothesize that persistent activation of Hedgehog signaling within NHB women instigates the proliferation and transformation of basal stem cells within the breast, thus fueling TNBC development. Understanding the perceptions and experiences of NHB women that are identified as being at an increased risk for BC will aid in the identification of barriers and facilitators to their risk reduction care and in turn provide implementation strategies that could contribute to alleviating the racial disparity seen in TNBC morbidity, mortality, and preventative care. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The significance of this project lies in its dual approach, uncovering basal breast cancer mechanisms in a high-risk group using normal breast tissue and evaluating the perspectives from NHB women to enhance the practical relevance of our findings.

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Arriving at strategies to recruit and retain adolescents and young adults (AYAs) in research: A mixed-methods approach

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OBJECTIVES/GOALS: Research participation by adolescents and young adults (AYAs) is critical for advancing therapeutic interventions applicable across the life course. Identifying effective strategies to recruit and retain AYAs is challenging. This poster elucidates the

process and outcomes of working with an AYA Health Research Board and surveying AYAs. **METHODS/STUDY POPULATION:** The AYA Health Research Board established in 2022 as part of an AYA Program within the UC Davis (UCD) Clinical and Translational Science Center (CTSC). The Board is composed of youth advisers, ages 13–39, from across CA. In 2023, the Program supplemented insights from the board with a national online survey of AYAs using the Amazon Mechanical Turk (MTurk) platform. Two separate instruments were administered, one on recruitment and another on retention, each with over 400 responses. The UCD AYA Board was then engaged to provide crucial insights contextualizing the survey findings, ensuring their relevance and applicability to the AYA population. **RESULTS/ANTICIPATED RESULTS:** Overall, survey results indicate that AYAs are aware of health studies and clinical trials. Responses affirm that incentives are the biggest driver of AYA participation, while side effects were identified as the biggest reason to drop out of a study. Overall, youth appear more interested in participating in online studies versus those that require in-person appearances. Text messages, regular updates, and sharing of study results were identified as strategies to maintain participant engagement. Additional results will be available through a one-page factsheet for researchers to use as they think about retention and recruitment of AYAs. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Survey results will be made available to health researchers to help move the needle on recruitment and retention efforts of AYAs. This mixed-methods case study serves as an example of the impact AYAs can have on shaping research and validating survey findings.

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Assessing socioeconomic barriers to mental health service utilization among older adults in Puerto Rico's federally qualified health centers

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OBJECTIVES/GOALS: To evaluate the impact of social determinants of health (SDOH), specifically socioeconomic status and medical insurance coverage, on access to mental health services for adults aged 60 and older served by Federally Qualified Health Centers (FQHCs) in Puerto Rico. **METHODS/STUDY POPULATION:** A secondary retrospective analysis of electronic health records from FQHCs in Puerto Rico will be conducted to examine the relationship between SDOH needs and mental health service utilization among adults aged 60 years and older receiving primary care. SDOH data will be collected using the PRAPARE[®] tool, assessing factors such as socioeconomic status, insurance coverage, and emotional support, with a focus on identifying unmet needs. Multivariable and logistic regression models, using Stata v.17, will be employed to evaluate correlations between these SDOH factors and mental health service utilization, adjusting for age, gender, and mental health conditions. This