years, leading to improved consent forms, more targeted recruitment, clearer language and a more streamlined screening process. RPAG member surveys indicate a greater understanding of clinical research challenges, critical health issues, and how research can benefit them. The WE C-RAB has improved community recruitment efforts, as well as survey and study design. Researchers highlight the importance of feedback in creating greater study participant engagement, indicating deeper understanding of the community/participant perspective and how to work "with" community. Ongoing WE C-RAB-faculty partnerships have led to at least 3 federally funded grants. DISCUSSION/SIGNIFICANCE OF IMPACT: The 3 RPAGs provide the versatility to meet the needs of the diverse research spectrum across the AHC. This includes the type of research as well as the level or degree of participant/community engagement needed. RPAGs create greater connection and understanding leading to better participant experiences and the promise of better health outcomes.

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Feasibility of building a community-based gardening initiative

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OBJECTIVES/GOALS: Community gardening can foster healthy behaviors among low-income communities. This project aimed to develop a community garden. The primary objectives of this project are (1) assessing the need for and perspective on a community garden at the childcare center, (2) installing the garden, and (3) engaging children in gardening education. METHODS/STUDY POPULATION: This project took place at a childcare center in Harrisburg, PA. Most (74.6%) residents identified as Black or Hispanic/Latino. Every child at the center was eligible for free or reduced lunch. A listening session was held with directly impacted community members to discuss the need for a community garden. Four caregivers, 1 early childhood educator and a master gardener (n = 6) attended the listening session, in which they shared their personal strengths and challenges in growing food. Attendees provided suggestions on what foods they wanted to grow. Children enrolled in the center's summer program (n = 50) were then invited to participate in weekly gardening activities for 9 weeks. Activities were targeted to preschoolers (3- to 5-year-olds). Older children enrolled in the summer program were welcome to participate. RESULTS/ANTICIPATED RESULTS: Feedback from the listening session was positive. Attendees provided ideas on what to grow and shared interest in expanding the garden to the broader community. Project staff installed four garden beds and planted a variety of herbs (basil, mint, and lavender), fruits (strawberry and melon), and vegetables (tomato, squash, pepper, and onion). Roughly 20–50 children were engaged in the garden each week. Eight weeks into the project, one member from the broader community noticed the garden's growth and expressed gratitude to the staff, stating "I saw you when you first started planting. This is great what you are doing for the kids." Children and the center's staff responded positively to the activities. The staff expressed verbal gratitude for the project and were enthusiastic about maintaining the garden. DISCUSSION/SIGNIFICANCE OF IMPACT: Developing a community garden was feasible in this sample and shows potential to (1) increase children's food literacy and vegetable acceptance and (2) bridge the gap from farm to early childcare education. The project's success paves way for future gardening initiatives that address food access issues within other diverse low-income populations.

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Assessing feasibility of including participants in user experience (UX) design for genetic testing digital education platform (Genesis Ai)

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OBJECTIVES/GOALS: The study is designed to co-develop a genetics education digital platform with community participants. Diverse populations, especially African American communities, are less likely to participate in genetic testing and clinical trials. To increase participation and community input, we want community participants across Louisiana. METHODS/STUDY POPULATION: A cross-sectional, mixed-methods study will be conducted to assess interest in learning about genetics through a digital education platform and to adapt the platform based on participant feedback. Specific Aim 1 will be achieved by recruiting a diverse cohort and collecting demographic data to identify participants' characteristics. For Specific Aim 2, 35 community participants will be enrolled as a co-design team to complete 5-week educational modules. Feedback from focus groups will guide iterative platform refinements, ensuring the platform is culturally tailored and user-friendly. RESULTS/ANTICIPATED RESULTS: For Specific Aim 1, we anticipate that the majority of participants will express interest in learning about genetics through the digital platform, with demographic data revealing a diverse participant pool, predominantly from African American and Hispanic communities. For Specific Aim 2, we expect that all 35 co-design team members will complete the 5-week modules. Feedback from the focus groups is anticipated to highlight the need for more user-friendly navigation, culturally tailored content, and enhanced visuals. These insights will guide the refinement of the digital platform for improved engagement and accessibility. DISCUSSION/SIGNIFICANCE OF IMPACT: This study addresses a critical translational barrier – underrepresentation of African descended communities in genetic testing. By developing a culturally tailored, digital platform to engage these populations, the project aims to reduce health disparities, enhance genetic literacy, and foster inclusivity in genomic research.

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Assessing the effects of balance training on executive functions and BDNF biomarkers in Alzheimer's disease patients

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OBJECTIVES/GOALS: As the aging population increases, maintaining cognitive and physical health becomes crucial. Executive functions (EF), including reaction time, sustained attention, and spatial memory, are essential for daily life and independence in older adults but tend to decline with age, especially in Alzheimer's disease (AD) patients. METHODS/STUDY POPULATION: Physical balance (PB) impairments further exacerbate this decline, affecting the quality of life and independence. Balance training (BT) emerges as a potential non-pharmacological intervention to enhance EF. This study aims to 1) assess the association between PB impairments and EF deterioration in older adults with AD; 2) evaluate the impact of BT on EF enhancement in this population; and 3) explore changes in brain-derived neurotrophic factor (BDNF) biomarkers before and after physical activity related to BT. This pilot study employs a cross-sectional design with older Hispanic adults (>65 years) in Puerto Rico, comparing a control group without BT intervention to an experimental group with BT intervention. Both groups will be assessed for EF and BDNF biomarkers pre- and post-physical activity. RESULTS/ANTICIPATED RESULTS: Expected outcomes include identifying significant correlations between PB impairment and diminished EF, demonstrating measurable EF improvements following BT, and evidencing sustained BDNF release post-BT despite PB impairments. By understanding the biological mechanisms linking BT and cognitive improvements, particularly the role of BDNF, this research could inform future strategies to mitigate cognitive decline in AD patients through targeted physical interventions. DISCUSSION/SIGNIFICANCE OF IMPACT: The findings of this study could provide valuable insights into the development of new preventive interventions, enhancing the quality of life and independence for older adults.

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Beyond checking the box: Engagement and capacity building of persons with lived expertise in research

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OBJECTIVES/GOALS: There has been a significant increase in the engagement of researchers with persons with lived and living experience, driven by a growing recognition of the invaluable insights and expertise these individuals bring to the research process. However, there remains a need for research teams to learn how to engage with patients and community partners. METHODS/STUDY POPULATION: The EMPOWER project is a collaborative of members with lived/living expertise of substance use during pregnancy. EMPOWER meets three times per month in support of their goals of patient-centered research, changing the narrative through conversations, and building the capacity of persons with lived experience to co-lead research. Through over 4 years of active collaboration and co-learning, EMPOWER has identified and created methods that support meaningful patient engagement and capacity building. RESULTS/ANTICIPATED RESULTS: EMPOWER has identified the following methods that support meaningful engagement and capacity building: Mind-Mapping Exercises, Personal and Collective Journey Mapping, 8-month research training curriculum, Digital Storytelling, Learning Labs, and World Cafe Meetings. These methods have led to a collaborative of 20 individuals with lived experience of substance use to identify research gaps, prioritize research questions, design data collection tools, analyze research data, disseminate research results, and consult with healthcare teams in efforts to improve clinical care. To-date EMPOWER have given over 10 invited presentations and is currently writing manuscripts. DISCUSSION/SIGNIFICANCE OF IMPACT: Meaningful patient and community engagement is critical to developing and implementing healthcare interventions. Unfortunately, engagement efforts are often lack in building capacity of patients and community, which impedes their ability to fully engage in all phases of research.

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Acceptability of a Mobile K-12 School-Based Clinic for pediatric diabetes and obesity care*

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OBJECTIVES/GOALS: To determine the acceptability of a mobile/school-based diabetes and prevention clinic to overcome transportation barriers and improve attendance at endocrinology appointments for youth with type 1 diabetes, type 2 diabetes, MODY diabetes, and obesity living in socially vulnerable communities METHODS/STUDY POPULATION: This study utilized a 3-phase implementation process focused on feasibility, demand, and acceptability. Phase 1: identified high-need areas using patient volume and disease control metrics. Collaborated with school districts to define needs, enrolled them through a memorandum of understanding, and subsequently recruited and consented existing patients attending these schools. Phase 2 piloted the program to refine logistics and workflows. Semi-structured interviews and surveys were conducted with caregivers to assess program acceptability and satisfaction. Phase 3 is ongoing and will track clinical outcomes including glycemic control, appointment attendance, hospital admissions, emergency department visits, and self-management metrics. RESULTS/ANTICIPATED RESULTS: Demand for the program was high with 91% (10/11) of approached districts agreeing to participate. District enrollment was staggered, starting with 1 district in August 2023, expanding to 5 in September, 7 in October, and reaching 8 districts by May 2024. From August 2023 to July 2024, the school-based mobile clinic conducted 355 individual clinical encounters addressing diabetes and obesity. The encounters included 180 for type 1 diabetes, 69 for type 2 diabetes, 8 for MODY diabetes, and 98 for obesity. Interviews and surveys with 36 caregivers are ongoing to evaluate program satisfaction. DISCUSSION/SIGNIFICANCE OF IMPACT: The data suggest that this innovative healthcare delivery model is feasible. District-level enrollment demonstrates a demand for the program. Results from the interviews and surveys will further characterize the program's acceptability among caregivers and lay the groundwork for future efficacy testing.

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Adversities, Distress, and Resilience in Hispanic Pregnant Women from Puerto Rico

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OBJECTIVES/GOALS: Pregnancy increases vulnerability to stress and mental health symptoms, particularly among Hispanic women in Puerto Rico (PR), a population with unique socioenvironmental adversities, such as poverty and natural disasters. This study examined the relationships between life adversities and psychological distress in this at-risk population. METHODS/STUDY POPULATION: Participants ($n = 50$) in this cross-sectional study were recruited from an obstetrician's office in Southern PR. All participants provided written consent and completed the Adverse Life Experiences Scale