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Advancing impact through partnership: A community advisory board to amplify translational reach of electric bicycle injury research

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OBJECTIVES/GOALS: The objective of this study is to assemble a community advisory board (CAB) of interdisciplinary stakeholders to contextualize study results and co-create translational materials that can be used by local governments, community leaders, and community-based organizations to prevent electric bicycle (ebike) injuries. METHODS/STUDY POPULATION: This study merges community-engaged research and data science approaches. We are assembling an interdisciplinary CAB who are key stakeholders in informing ebike safety outside of the scientific research community. The CAB will advise on a retrospective observational data science study currently in progress that uses a California wide dataset to examine how features of neighborhoods and intersections impact ebike injuries. The CAB will provide context for study results based on their professional experiences and co-design translational materials (e.g., policy brief) that convey research findings for effective translation into policies and practices to prevent ebike injuries. We will track data on CAB activities, perceptions of participation from members, dissemination and reach of translational materials. RESULTS/ANTICIPATED RESULTS: We assembled a CAB of five individuals who are policymakers, local government officials, first responders, school board members, and non-profit workers. We will report data on the frequency of meetings, themes emerging from each meeting based on discussions with CAB members, and perceptions of the experience by CAB members. We will also report on the type and content of the translational products created, the process dissemination of these translational materials, and the reach of the translational materials. DISCUSSION/SIGNIFICANCE OF IMPACT: The translational aspect of this project is significant for disseminating findings to communities outside of the research realm who can implement changes that improve ebike safety. Our goal is to shorten the time for research to be translated into policies and interventions by leveraging community-engaged research and data science approaches.

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Aim 0: Researchers' perspectives on early engagement to inform research direction

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OBJECTIVES/GOALS: Outline researchers' perspectives on an "Aim 0" approach of engaging with people connected to the research topic to leverage their perspective when developing research questions. Worked with researchers at varying levels of career stage to understand their thoughts and concerns of this work. METHODS/STUDY POPULATION: Used human-centered design (HCD) methods to conduct nine semi-structured interviews with researchers at varying levels of career stage (early to senior level researchers). Interviews lasted 30–60 minutes while participants answered questions using collage cards, journey maps, and card sorting HCD methods. Questions related to communication dynamics between investigators and their population, how communication could be more population-centered, a research project journey including decisions on who and when to engage populations, and barriers and facilitators of engaging populations earlier in the research process to incorporate their voice in the development of research questions. RESULTS/ANTICIPATED RESULTS: An HCD analysis approach will be conducted to outline findings. Anticipated findings include outlined communication dynamics between researchers and their affected population. The approach of engaging with the population early in the research process to help determine research questions was thought of favorably; however, feasibility concerns, mostly around finding funding, were brought up often in the interviews. More anticipated findings include what career levels would be most beneficial for an "Aim 0" approach. DISCUSSION/SIGNIFICANCE OF IMPACT: Engaging with the affected population earlier in the process will help streamline efforts of investigators to solve issues their populations are dealing with. This adds another step to the research process, and it helps to understand researcher's perspectives of this added effort.

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Identifying needs and refining intervention components for a cognitive rehabilitation program in people with systemic sclerosis

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OBJECTIVES/GOALS: Problems with cognition are common and distressing for people with systemic sclerosis (SSc). We are developing a patient-centered cognitive rehabilitation intervention using the multiphase optimization strategy (MOST) framework. Our study aim is to identify patient needs, preferences, and priorities to help address their cognitive challenges. METHODS/STUDY POPULATION: We conducted semi-structured interviews with 15 individuals with SSc to capture in-depth perspectives on desired intervention features, potential barriers and facilitators to implementation, and overall relevance of the intervention to daily life. Transcripts were analyzed using the Rigorous and Accelerated Data Reduction technique in combination with thematic content analysis. Codes with similar content were merged and organized into subthemes and themes to understand the data. Insights from these interviews are used to inform and refine a conceptual model to guide intervention development in the MOST preparation phase, ensuring that resulting components are acceptable, feasible, and closely aligned with patients' specific needs, preferences, and priorities. RESULTS/ANTICIPATED RESULTS: Participants were 55 years old on average (100% female, 80% White). Forty percent had diffuse

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cutaneous SSc, and 53% were within 7 years of diagnosis. Participants reported cognitive challenges affecting short-term memory, attention, and processing speed. They highlighted the need for flexible online sessions (having multiple time options to choose from), extra time for discussion, and peer support (a space for connection and group discussion). Barriers to participation included symptom fluctuation, fatigue, and limited time. Facilitators included peer support and user-friendly resources. These insights will refine a conceptual model to guide development of an intervention that is acceptable, feasible, and tailored to the cognitive and lifestyle needs of people with SSc. DISCUSSION/SIGNIFICANCE OF IMPACT: We will incorporate feedback from this study to create a patient-centered cognitive rehabilitation intervention that is tailored to people with SSc. Involving people with SSc in intervention development provides the foundation to build a robust, relevant intervention for people with cognitive challenges.

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Understanding community engagement with research through a curated medical record-based database: A cross-sectional, single site study

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OBJECTIVES/GOALS: Since clinical trial participation is a key translational research initiative, the objectiveis to characterize research participants within a health system using electronic health record (EHR) data and evaluate how community-level factors influence research participation rates. METHODS/STUDY POPULATION: Retrospective, cross-sectional study of patients with ICD-10 research encounter codes (Z00.6) from 2016 to 2024 using Rush EHR data organized in the CAPriCORN Common Data Model. Research participation prevalence was the main outcome, calculated by geographic area (3-digit zip codes, Chicago community areas) and linked to Census data for neighborhood factor analysis. Variables include Area Deprivation Index (ADI), Social Vulnerability Index (SVI), education, occupation, and income. The Chi-square test compared demographics and t-tests compared mean SDOH variables between high- and low-participation community areas. RESULTS/ANTICIPATED RESULTS: Of the 1,069,226 patients seen from 2016 to 2024, 11,937 patients had research visits. Of these patients, 45.4% lived in Chicago, 65 years or above is the largest age group (29%), 62% female, 58% White, 82% non-Hispanic, and 9% non-English preferred language. Overall, the research participation prevalence was 1.12%, higher outside of Chicago (1.21%) than within (1.03%). Within Chicago community areas, prevalence ranged from 0.34% to 2.8% (mean: 1.03%, SD: 0.44%). Higher-participating communities (above median) had significantly lower ADI (39.9 vs 61.9), lower SVI (0.51 vs 0.80), lower unemployment (8.0% vs 15.3%), higher bachelor's degree attainment (43.6% vs 19.6%), higher income ($69,859 vs $36,376), and lower uninsured rates (7.4% vs 11.5%). DISCUSSION/SIGNIFICANCE OF IMPACT: This work is the first local exploration of community factors and research participation using curated EHR data. Although limited by single-center data and required entry of EHR codes, it is a step into understanding factors that may influence research participation. Local estimates could be improved by utilizing data from all CAPriCORN sites.

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Building capacity through co-design: Developing a community-engaged research 101 training

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OBJECTIVES/GOALS: Community-engaged research (CER) emphasizes equitable partnerships between academic and community partners, yet many lack structured training opportunities to develop the necessary knowledge and skills to engage. Recognizing this gap, we launched a co-design process to develop a CER 101 course tailored for both community members and academics. METHODS/STUDY POPULATION: The CER101 design process is rooted in principles of co-design. CAB members, community partners, and academics meet as part of an iterative, interactive, facilitated process to share perspectives, exchange knowledge, and co-create course content. A 2-day workshop began with a process to align visions – define the audience of the course, identify barriers to engagement with the material, and define parameters of the final product. Activities included structured discussions, brainstorming sessions, and feedback cycles. Emphasis is placed on valuing first-hand experience alongside academic expertise to ensure accessibility and relevance. RESULTS/ANTICIPATED RESULTS: The co-design process will produce a CER 101 training that reflects jointly developed foundational concepts, practical strategies for building equitable community–academic partnerships, and case studies highlighting effective CER practices. Participants are expected to demonstrate improved understanding of CER principles, enhanced ability to apply tools for collaboration, and greater appreciation for both lived and academic expertise. The training will strengthen mutual trust, expand shared capacity for CER, and inform iterative refinements to ensure sustained relevance and impact within the community of practice. DISCUSSION/SIGNIFICANCE OF IMPACT: In addition to resulting in the development of a CER 101 course that includes foundational concepts and practical strategies for engaging in CER, the co-design process will

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