implications for evaluation approaches in these dynamic healthcare environments. We aim to disseminate lessons learned to help inform best practices for other CTSA hubs operating under a LHS model. METHODS/STUDY POPULATION: Our investigation builds upon our prior qualitative analysis of the LHS literature and contextualization of unique challenges, and potential remedies, of a LHS in Academic Health Centers. As evaluators, we are particularly interested in understanding how evaluation work is conducted in LHSs and exploring ways to optimize the role of evaluators and their skillset in this context. For this investigation, we examined the competencies necessary for evaluators working in LHS and the specialized evaluation approaches needed to fulfill these requirements. Our approach drew from multi-faceted data and experience. We leveraged insights from our literature review, direct experience within WFUSOM CTSI, and discussions with other evaluators. This combination of data sources provided the foundation for our analysis. RESULTS/ANTICIPATED RESULTS: We expect that as more health systems move toward the LHS model, they will have an increased need for various forms of evaluation, requiring resources well beyond what they are currently dedicating to evaluation. Expectations for evaluators will be enhanced in the following distinct, yet complementary, categories: generating new knowledge and translating research knowledge into practice. Anticipated results include identifying essential competencies for evaluators in LHS, such as data proficiency, clinical understanding, and adaptive skills. We also expect to uncover various evaluation approaches specific to LHS, including quality improvement studies, pragmatic trials, and stakeholder-engaged research. DISCUSSION/SIGNIFICANCE: Understanding the evolving role of evaluators and specialized evaluation approaches in LHS is crucial. It enhances the ability to generate localized evidence, customize interventions, and improve patient care. This knowledge empowers healthcare systems to adapt, innovate and deliver high-quality care for a higher impact on patient outcomes.

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Validating a Coding Tool for Translational Science Benefits Model (TSBM) Data: Delphi Methodology

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OBJECTIVES/GOALS: To develop and validate a tool to systematically identify benefits accruing to research within the Translational Science Benefits Model (TSBM) framework. We used a Delphi panel to reach consensus among a group of experts on criteria required for a clinical, community, economic, or policy benefit to be verified as coming from research. METHODS/STUDY POPULATION: A coding tool with proposed criteria to verify each of the 30 benefits was created at UCI to confirm the TSBM benefits resulting from funded research. We convened 11 experts from 8 CTSA hubs, who consisted of evaluators (faculty and staff) with experience using the TSBM. A web-based survey was used for Round 1, followed by a panel discussion of remaining unvalidated criteria, and a Round 2 survey as the final decision for inclusion of items in the tool. Response options for each criterion were "yes, required" or "no, not required". Criteria that reached consensus (>70% agreement) were considered validated for inclusion in the final version. Panelist suggested criteria in Round 1 were also incorporated in the Round 2 survey for consideration by the experts. RESULTS/ANTICIPATED RESULTS: In the web-based survey for Round 1, all 11 experts participated and 92% of criteria reached the determined consensus level (N = 157). The remaining 8% of the criteria (N = 13) were discussed during the panel meeting. The discussion, in which 8 experts participated, was moderated by UCI and took place virtually via Zoom. All experts were sent a recording of the discussion and given the opportunity to post comments online about the remaining criteria before, during, and for a day after the discussion. Round 2 will include 50 newly proposed criteria from panelists and the 13 criteria that did not reach consensus in Round 1. Based on the results of Round 2, the criteria that reach consensus will be included in the final version of the coding tool that can be used across all TSBM benefits. DISCUSSION/SIGNIFICANCE: Using the Delphi Methodology, we will have a standardized set of criteria that may be applied to determine whether a TSBM benefit has resulted from a specific research project or program. This standardization will allow for aggregation and comparison of data across CTSA hubs and further multi-level evaluation of impact.

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Benchmarking MICHR's Clinical and Translational Science production as a continuous quality improvement initiative.

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OBJECTIVES/GOALS: In line with NCATS funding requirements, the Michigan Institute for Clinical and Health Research (MICHR) established a continuous quality improvement (CQI) process and used the process to guide the implementation of a benchmarking project to evaluate and set goals for MICHR's production of Clinical and Translational Science manuscripts. METHODS/STUDY POPULATION: We aimed to increase the number of Clinical and Translational Science papers MICHR produces and to set a reasonable goal for improvement. Benchmarking was used to obtain a baseline and inform the identification of a reasonable goal for improvement. 11 Peer institutions were identified with similar funding levels. 1,225 Publications from 2022 for all 12 CTSAs were obtained from NIH Reporter. All publications were reviewed by title to identify probable CTS content. Two staff reviewers confirmed a total of 108 CTS publications across all CTSAs, and coded each paper to characterize the theoretical approach, method (quantitative and/or qualitative), analytic method and topic. All publications that were selected for benchmarking were also tracked and compared using Altmetrics for Institutions and Overton platforms. RESULTS/ANTICIPATED RESULTS: A total of 108 CTS publications were produced by 12 benchmarked CTSAs in 2022; of those, 70% (77) regarded research infrastructure, 37% (41) regarded research methods, and 15% (16) regarded clinical care. Over half, 53% (58), of the benchmarked papers are empirical research papers; of those, 67% (39) used quantitative methods, 28% (16) used qualitative methods, and 5% (3) used mixed methods. A clear majority of the benchmarked papers, 70% (76), provided only descriptive analyses, 18% (19) provided inferential analyses, and 12% (13) provided predictive analyses. We identified an opportunity to produce more manuscripts with descriptive analyses of research infrastructure. In the long-term, we saw an opportunity to produce predictive analyses of translational

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initiatives designed to impact clinical care. DISCUSSION/SIGNIFICANCE: The benchmarking results helped MICHR identify goals for its production of Clinical and Translational Science to fill gaps in the field. Expanding the scope of this benchmarking project might achieve greater interrater reliability using larger representative sets of publications drawn from institutions across the CTSA Consortium.

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Translational Challenges and Facilitators of Health Equity Research Integrating Social Determinants of Health with Patient- and Community-Centered Technology

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OBJECTIVES/GOALS: - Illustrate findings of a translational science case study of multi-pronged research aimed at understanding of social determinants in health disparities and integrating patient-centered technology; - Illuminate translational mechanisms by analyzing and sharing research challenges, facilitators, and benefits. METHODS/STUDY POPULATION: Utilized novel TS evaluation methods and tools: - Translational Science Case Study protocol to examine translational path from innovation to practice, barriers and facilitators for that translational movement. - Translational Science Benefits Model (TSBM) Checklist for translational/research impact analysis. Triangulated diverse data sources: - Primary data: semi-structured interviews with research partners. - Secondary data: researchers' grant applications, reports, and publications; public stories/news related to their research; scientific publications; organizational/policy documents; and interviews with research stakeholders featured in published sources. RESULTS/ANTICIPATED RESULTS: Translational challenges include: culturally tailored education and outreach; data analysis and intervention planning; engaging community stakeholders in the development and implementation; addressing economic and resource-related challenges. Translational facilitators are: UMN CTSA funding and other support; access to data and resources; use of open-source materials; evidence-based/best practice approaches; diversity and collaboration between researchers, community organizations, healthcare providers; researchers' drive to translate. The research contributes to community and public health, clinical/medical, and economic benefits, health equity advocacy, catalyzing further research, and public awareness. DISCUSSION/SIGNIFICANCE: The evaluation case study contributes to translational science by providing evidence and lessons learned related to translational benefits, challenges, and facilitators of community-based, patient-centered research bringing people, knowledge, and technology together and contributing to health equity.

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Placing Participant Experiences at the Center of Improving Research by Empowering the Participant Voice

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OBJECTIVES/GOALS: Empowering the Participant Voice (EPV) is a 6-CTSA Rockefeller-led collaboration to developcustom REDCap infrastructure to collect participant feedback using the validated Research Participant Perception Survey (RPPS), demonstrate its value in use cases, and disseminate it for broad adoption. METHODS/STUDY POPULATION: The EPV team developed data and survey implementation standards, and specifications for the dashboard and multi-lingual RPPS/REDCap project XML file. The VUMC built a custom At-a-Glance Dashboard external module that displays Top Box scores (percent best answer), with conditional formatting to aid analysis, and response/completion rates. Results populate site dashboards, and aggregate to a multi-site dashboard for benchmarking. Results can be filtered by participant/study characteristics. Sites developed individual use cases, leveraging local infrastructure, initiatives and stakeholder input. Infrastructure and guides were designed for dissemination through public websites. RESULTS/ANTICIPATED RESULTS: Five sites sent 23,797surveys via email, patient portal or SMS. 4,133 (19%) participants diverse in age, race, and ethnicity, returned responses. Sites analyzed their data and acted on selected findings, improving recruitment, communication and feeling valued. Aggregate scores for feeling listened to and respected were hight (>90%%); scores for feeling prepared by the consent process were lower (57-77%) and require action. Some groups experiences were better than others. Sites differed significantly in some scores. Dissemination of EPV is underway. Infrastructure and guides are downloadable free of charge, with advice from the EPV team. In 2023, a sixth site began piloting a lower literacy survey version and syncing data to the consortium dashboard. DISCUSSION/SIGNIFICANCE: The EPV RPPS/REDCap infrastructure enabled sites to collect participant feedback, identify actionable findings and benchmark with peers. Stakeholders and collaborators designed and tested local initiatives to increase responses and diversity, address disparities, and discover better practices.

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Pace and Pitch: Predictive Factors for Seed Funding and Development

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OBJECTIVES/GOALS: Securing seed funding and external support can be a daunting process. Institutions are increasingly looks for quantitative assurance of impact and accountability. This study investigates factors predictive of seed funding selection, including pace of submissions as well as external support. METHODS/STUDY POPULATION: Using Generalized Logistic Mixed Models (GLMMs), we model factors found to be predictive of researcher success, and model demographic factors as well, to understand the complex interplay of researcher background, professional networks and preparation, and researcher persistence. The following factors were modeled as potentially predictive of researcher success: faculty rank; co-PI; h-index; rate of application; prior award funding amounts; and research-focused social media posts. RESULTS/ANTICIPATED RESULTS: After effects are finalized, we expect that pace of seed fund applications and the strength co-PIs, as measured by h-indices, to be significant predictors of researcher success for

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