

reported benefits (64% across all categories) that were unable to be confirmed as realized using the provided text, which either described activities not relevant to the selected benefit, or lacked critical details needed to verify that the benefit was realized. **DISCUSSION/SIGNIFICANCE:** This project demonstrates that the TSBM can be utilized to collect group-level data and to compare cohorts' real-world benefits. It also illuminates the need to improve the process for verifying self-reported benefits. Sharing data on these real-world impacts has the potential to convey the strengths of translational science to the public.

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Evaluating the Role of Service Centers in Overcoming TS Barriers: Protocol Development and Pilot Implementation

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OBJECTIVES/GOALS: Evaluation of the contributions of the CTSI core services to the science of translational science requires focused protocols that are rigorously developed and piloted. The goal of this presentation is to report on the process of protocol development and present the results of protocol pilot implementation. **METHODS/STUDY POPULATION:** Translational science' (TS) is the field of investigation focused on understanding the scientific and operational principles underlying each step of the translational process (Austin, Clin Trans Sci. 2021; 14:1629-1647). A key tenet of translational science is to understand common causes of inefficiency and failure in translational research projects (e.g., incorrect predictions of the toxicity or efficacy of new drugs, lack of data interoperability, ineffective clinical trial recruitment). The navigation steps and mapping to resources for translational researchers provides an opportunity to develop effective navigation tools and study the barriers to effective translation. **RESULTS/ANTICIPATED RESULTS:** The UF-FSU Evaluation Committee has developed and piloted an evaluation protocol that aims to assess the role of CTSI service centers in addressing specific TS barriers. The protocol is informed by interviews with CTSI service users, and is grounded in the Donabedian Framework of Quality Assessment and Lean principles. The pilot implementation of the protocol showed its relevance and applicability across multiple UF-FSU core service centers. **DISCUSSION/SIGNIFICANCE:** The barriers to translational science are not unique but addressing them is rarely within the scope of individual translational research projects. Conversely, service centers within the CTSA institutions are uniquely positioned to address TS barriers thus enhancing to the operational efficiency of the CTS enterprise and promoting the science of TS.

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Evaluating the ten-year progression of the Miami CTSI Mentored Translational Research Scholars (KL2) Program Awards

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OBJECTIVES/GOALS: The goal of Miami CTSI's Mentored Translational Research Scholars (KL2) Program is to identify outstanding early-stage investigators and prepare them to become the next generation of highly skilled independent researchers who translate fundamental knowledge and new technologies from the

laboratory to the clinic and to the community. **METHODS/STUDY POPULATION:** Evaluation of the KL2 program focused on assessing progress in the following areas: 1) scholar productivity during and after graduating from the program; 2) continued engagement of KL2 program graduates in clinical and translational research; scholar productivity during and after graduating from the program; 3) outcomes such as establishing independent research careers, obtaining research funding, and establishing collaborations; and 4) research impact. We used a developmental evaluation approach and benefits-framework model to conduct program evaluation, incorporating both in a program-specific logic model. Bi-annual surveys were used to measure scholar feedback and progress, and utilization of CTSI services. **RESULTS/ANTICIPATED RESULTS:** Since 2013, the KL2 program has trained 21 scholars, 17 of whom have completed training, and four are still in the program. Of the 21 scholars, 52% are female and 38% are underrepresented minorities (URM)—significantly higher than the 12% URM for overall CTSA KL2 scholars. Scholars have 176 total publications related to their KL2 projects and have received \$52.4m in total research funding. In addition, 50% of the projects focused on health disparities. Overall, 48% of KL2 scholars have received large subsequent federal awards including three NIH K awards and six NIH R awards. Scholars actively utilized CTSI services during and after graduation. Programmatic enhancements such as adding institutional scholars and using scholar feedback to improve program resources were also implemented. **DISCUSSION/SIGNIFICANCE:** Miami CTSI's KL2 program has demonstrated success in fulfilling its program goals. The process and outcome evaluation has provided a better understanding of program performance and progress and has demonstrated alignment with CTSI's overall goals on addressing health disparities and its commitment to diversity and equity.

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Patient perceptions of nonpharmacological pain treatment in the emergency department setting

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OBJECTIVES/GOALS: This study examined patient perceptions on the benefits, barriers, and facilitators of conventional and complementary/behavioral pain strategies that can be offered in the ED setting including physical therapy, mindfulness, acupuncture, and yoga. **METHODS/STUDY POPULATION:** We conducted and recorded semi-structured interviews with 30 patients who presented to the ED with musculoskeletal pain. Interviews focused on patients' perceptions of NP pain treatments, barriers/facilitators to utilization, and recommendations that would promote engagement. A hierarchical coding system was developed and refined using the interview guide, the Theory of Planned Behavior, and preliminary review of the transcripts. The iterative process of developing the coding system allowed us to identify preliminary themes. **RESULTS/ANTICIPATED RESULTS:** Patients believe education on pain and the mind-body connection would give a sense of pain control. Likely barriers to engaging at the ED include lights, noise, interruptions, and uncertainty of their medical status. Post-discharge NP treatment barriers are financial and logistical. Engagement can be facilitated by a desire to avoid opioids, familiarity with meditation practices, and consistent positive communication with the health care team. Patients desire evidence on effectiveness, including testimonials, and suggested NP techniques should be introduced

early, with written materials used for post-discharge referral. Patients prefer in-person treatment but would appreciate a virtual option. The initial session should occur in-person to build trust and facilitate virtual session engagement. DISCUSSION/SIGNIFICANCE: Patients are willing to engage in nonpharmacological pain treatment, however the unpredictable ED environment, uncertainty of their medical status, and financial and time constraints are significant barriers.

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Preschooler Hemoglobin and Ferritin Concentrations Were Not Affected by Parenting and Multiple Micronutrient Supplementation Interventions in Southwest Guatemala

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OBJECTIVES/GOALS: Micronutrient deficiencies contribute to poor health and childhood development outcomes. The objective of this study was to examine the independent and combined effects of responsive parenting and multiple micronutrient supplementation interventions on preschooler hemoglobin and ferritin concentrations in southwestern Guatemala. METHODS/STUDY POPULATION: We enrolled 387 preschoolers (36-52 months) at nutritional risk (height-for-age z-score < -1) (51% male; 17% indigenous ethnicity) in a double blind, 2 x 2, cluster randomized controlled trial. Participants in the parenting intervention received culturally tailored responsive parenting or nutrition education (control) curriculum, delivered over 6 home visits. Participants in the nutrition supplementation group received daily supplementation with a maize-soy product fortified with 21 micronutrients for 6 months or a control product fortified with vitamin B2 only. Linear mixed models were used to estimate changes in hemoglobin and ferritin from baseline (2015) to endline (2017) in a subsample with blood specimens (n = 218). RESULTS/ANTICIPATED RESULTS: At baseline, 14% of preschoolers were iron deficient and 11% were anemic. Preschooler ferritin significantly increased over time in most arms, with the largest increase in the combined responsive parenting + multiple micronutrient supplementation arm (ferritin = 95.6 (95% CI 46.4, 144.74)); rates of change did not differ between study arms (p = 0.16). Preschooler hemoglobin did not change over time. Further analysis will examine the moderation of intervention effects by pre-specified child and household factors. DISCUSSION/SIGNIFICANCE: Increases in preschooler ferritin did not differ between intervention and control arms. There was no effect of the intervention on hemoglobin. Future analyses will examine intervention effects on pre-specified subgroups including baseline micronutrient deficiencies.

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Reducing Physical Therapy Consults for Patients with High Functional Mobility in the Acute Medical Inpatient Setting: A Difference-in-Differences Analysis

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OBJECTIVES/GOALS: Physical therapy (PT) is key for treating functional decline that inpatients experience but is a constrained resource in hospital settings. The Activity Measure Post-Acute

Care (AM-PAC) score is a mobility measurement tool that has been used to define misallocation of PT. We aim to optimize PT referrals using AM-PAC-based clinical decision support. METHODS/STUDY POPULATION: We conducted a prospective study of patients admitted to University of Chicago Medical Center. AM-PAC scores were assessed by nursing staff every 12 hours. Clinical decision support was designed using validated AM-PAC cutoffs (> 18, a predictor of discharge to home). The tool was embedded in hospital medicine note templates, requiring providers to indicate PT referral status based on current AM-PAC scores. The primary outcome, unskilled consult, was defined as PT referral for patients with AM-PAC > 18. Data were collected for one year prior to implementation and one year after implementation for intervention (hospital medicine) and control (general internal medicine) services. Difference in differences analysis was used to assess the association between the intervention and unskilled consults. RESULTS/ANTICIPATED RESULTS: Between October 2018 and March 2021, 18,241 admissions were eligible for the study. Compared to preintervention, there was a lower rate of referral to PT for patients with high AM-PAC mobility scores in the post-intervention period [18.5% vs 16.6%; $X^2(1) = 7.02$; $p < 0.01$]. In the postintervention time period, the control group experienced a 2.6% increase in unskilled consults while the intervention group experienced a 2.3% decrease, a difference in differences of 4.9% (95% CI -0.07--0.03 for difference in differences) controlling for age sex, race, LOS, and change in mobility. Compared to preintervention, there was no statistically significant difference in mean change in mobility score post-intervention for either group. DISCUSSION/SIGNIFICANCE: Our results suggest that clinical decision support can decrease unskilled PT consults. Many functionally independent patients can mobilize with nursing or other mobilization staff. Hospitals should consider mobility score-based decision support to prioritize PT for impaired and at-risk patients.

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Scoping Review of the Health Effects of Youth Due to the September 11, 2001 Terrorist Attacks

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OBJECTIVES/GOALS: Use the World Trade Center (WTC) Health Program Health Effects Library to identify the breadth and depth of research on the health effects of youth due to exposures from the events of September 11, 2001, to track the research trajectories by study population, and to identify gaps and define needs for future research. METHODS/STUDY POPULATION: We selected references from the WTC Health Effects Library. This curated library includes research publications that measure, report, or discuss health effects of 9/11 at the three disaster sites. Articles included had to evaluate people under 18 years old on 9/11/2001, including those in-utero. Of the 1,813 references considered, 195 were included in our study. Data from each reference was extracted using DistillerSR software and organized in four topics: overview, methods, conditions, and results. Each publication was abstracted independently by a team of two health scientists and conflicts were resolved by the four-person team. All data was then exported from DistillerSR into Microsoft Excel for analysis. RESULTS/ANTICIPATED RESULTS: The 195 articles included were published between 2002 through 2021, of which 29 were funded by the WTC Health Program. The study population represented ranged from in-utero