collected315 samples from escitalopram-treated patients (N=288) and 265 samples from sertraline-treated patients (N=255). In youth, escitalopram and sertraline exposure (concentrations over time) and specific pharmacokinetic parameters (e.g., clearance) were influenced by CYP2C19 phenotype, concomitant CYP2C19 inhibitors, and patient-specific characteristics. Escitalopram and sertraline concentrations from remnant blood samples were 3.98-fold higher and 3.23-fold higher, respectively, in poor metabolizers compared to normal metabolizers (escitalopram, $p<0.001$) and compared to normal, rapid, and ultrarapid metabolizers combined (sertraline, $p<0.001$). DISCUSSION/SIGNIFICANCE: Combining remnant blood sampling with pharmacogenetic-integrated EMR data can facilitate large-scale population PK analyses of escitalopram and sertraline in youth. This real-world approach can be used to rapidly develop precision SSRI dosing strategies, including slower titration and reduced target doses in CYP2C19 poor metabolizers.

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Investigations of Clinical and Translational Science Roadblocks: a Survey of a Private Medical School and a Large Public University

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OBJECTIVES/GOALS: Clinical and translational science needs to address roadblocks to translational processes. We conducted a survey at two institutions, a private medical school and a large public university, to understand the frequency and distribution of barriers and roadblocks to research. METHODS/STUDY POPULATION: We reviewed the literature to compile a pool of barriers and roadblocks and convened a panel of relevant stakeholders to develop a 20-item questionnaire. Survey respondents were asked to select and prioritize the five leading clinical and translational roadblocks, provide information regarding their academic degrees and rank/position, complete open-ended items regarding their areas of research, and optionally add additional remarks in a comment box. The survey was disseminated in August 2022 via REDCap to faculty and staff with active research protocols at Baylor College of Medicine and the University of Houston. RESULTS/ANTICIPATED RESULTS: In total, 227 respondents completed the survey. Their disciplines were basic science (29.5%), translational research (52.9%), clinical research (55.5%), community-engaged research (9.7%), and educational research (9.7%). Respondents identified 1) lack of access to trained research coordinators, 2) lack of understanding about different resources that facilitate research, 3) complex regulatory environment and delays, 4) fragmented infrastructure for administrative and fiscal processes, and 5) inadequate funding for pilot projects to foster new research. Other roadblocks included lack of established community stakeholder partnerships, inadequate access to medical record data, and limited biostatistical support. In the comments, several respondents noted that all items included were important. DISCUSSION/SIGNIFICANCE: Research workforce recruitment/training was the highest priority followed by lack of access to information and administrative bottlenecks. We are building an online portal to increase awareness and simplify access to competency-based training and research services. Initiatives are underway to address other roadblocks.

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Feasibility of a Home-based Physiotherapy Program to Increase Physical Activity Levels in Older Adults with Diabetes Mellitus

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OBJECTIVES/GOALS: The objective of this study is to assess the feasibility and preliminary impact of a physiotherapy protocol for developing an individualized home-based physical activity program to increase physical activity (PA) levels in sedentary older adults with Type II Diabetes Mellitus (T2DM) living in Puerto Rico (PR). METHODS/STUDY POPULATION: This will be a pilot study with two phases. In phase 1, we will design a novel patient-centered home-based PA program protocol for adults ≥65 years with T2DM based on the Information-Motivation-Behavioral Skills model. Its content validity will be assessed through focus groups with 10 experts and 10 older adults and analyzed using a directed content analysis. Phase 2 we will be program implementation using a one-group, repeated measures design with 12 adults ≥65 years with T2DM. PA levels will be assessed by recording active minutes with a Fitbit. Risk of falls, balance, strength, and physical function will be assessed through standardized tests validated for this population. Statistical analysis will include descriptive statistics, comparisons via chi-square/Fisher's exact test, and non-parametric tests. RESULTS/ANTICIPATED RESULTS: We expect to recruit a minimum of 12 participants and to administer the program for 12 weeks at a frequency of two visits per week. We anticipate that implementing and supervising the home-based PA protocol will be feasible as determined by recruitment and retention rates, patients' satisfaction, and compliance with the program. We also expect that this protocol will increase physical activity levels, improve general strength, balance, physical function, and reduce the risk of falls in sedentary older adults with T2DM. DISCUSSION/SIGNIFICANCE: As the third cause of death in PR, T2DM represents a public health challenge. An effective home-based PA program may decrease morbidity and mortality rates in older adults by increasing PA and functional health. This study will provide data for planning a randomized controlled trial to assess its effectiveness in the outcomes of interest.

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Two Newly Developed Frontiers CTSI Applications to Support Recruitment and Trial Management: The Frontiers Trial Finder Mobile App and a Predictive Accrual Web-based App

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OBJECTIVES/GOALS: Frontiers CTSI developed applications to ensure its science teams have technological tools to advance their community engagement and trial management. The Trial Finder app is a mobile application that allows users to navigate available trials. The Accrual app will help study teams monitor their

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