

related to the outcome (HR 1.4, 95%CI, 0.6-3.0). **DISCUSSION/SIGNIFICANCE OF IMPACT:** Young and middle-aged individuals with MSIMI after MI have a >2-fold higher likelihood of recurrent MI and CV mortality compared with those without MSIMI. In this patient group, MSIMI is a better risk indicator than ischemia with a conventional stress. These findings point to psychological stress as an important determinant of risk in this patient population. Ischemia induced by mental stress is a potent risk indicator in young post-MI patients. Stress-reduction interventions may be especially beneficial in patients who show this abnormal response.

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### On the loss of individual joint controllability and the organization of muscle synergies in the impaired arm following a stroke: A pilot study

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**OBJECTIVES/GOALS:** Damage to the sensorimotor cortex areas or/and motor/sensory pathways after a stroke could lead the motor system to a loss of controllability for joints. We investigate the loss of individual joint controllability called a loss of individualization during arm movement, which would provide an insight into abnormal motor coordination. **METHODS/STUDY POPULATION:** We recruit 12 chronic stroke survivors with Fugl-Meyer score between 26 and 50. A robotic exoskeleton with minimum mechanical resistance is equipped to measure the movements of the shoulder, elbow and wrist joints, respectively. Surface EMGs on muscles related to the joints are recorded using 11 wireless pre-amplified electrodes. Participants are asked to move the shoulder, elbow, or wrist joint individually throughout their range of motion, without moving the other joints voluntarily. **RESULTS/ANTICIPATED RESULTS:** It would be expected that participants show more difficulty in individualization of the distal joint in comparison with the proximal joint. A reduced joint range of motion would be observed in a descending order of the wrist, elbow and shoulder. These results are in line with the proximal-to-distal gradient of motor deficits after a stroke. Intention of moving the distal joint would induce a greater deviation in the position of the proximal joint than that of the distal joint when moving the proximal joint. A non-negative matrix factorization algorithm would reveal a decreased number of muscle synergies in the groups with a loss of individuation in comparison with the groups with no loss. **DISCUSSION/SIGNIFICANCE OF IMPACT:** We demonstrate that a stroke leads to a lack of individual joint controllability, with a greater deficit on the distal joint, and that it is related to a decreased number of muscle synergies across the corresponding joints. **CONFLICT OF INTEREST DESCRIPTION:** N/A.

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### Plan for a Retrospective Evaluation of a Multi-Modal Weight-centric Prediabetes Intervention.

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**OBJECTIVES/GOALS:** To determine if a multi-modal, interdisciplinary intervention delivered to a group of prediabetic patients will result in reduced rates of diabetes progression. This project is a retrospective evaluation that will exam the feasibility and possibly efficacy of this intervention. **METHODS/STUDY POPULATION:** We will

evaluate outcomes of 50 participants for the clinic, aged 21-60 inclusive. Patients will have a Body Mass Index >25kg/m<sup>2</sup> with a diagnosis of prediabetes. Patients must be non-pregnant, using approved contraception, and agree to not become pregnant for 1 year after enrollment. After enrollment, the initial treatment period is for 1 year and includes a 12 week low calorie diet plan, a 6-month intensive behavioral and lifestyle modification plan followed by a 6 month behavior reinforcement extension. Weight management medications may be used if appropriate for the patient from a clinical perspective during the 6-month intensive behavioral/lifestyle modification. **RESULTS/ANTICIPATED RESULTS:** It is anticipated that there will be decreased weight with a mean weight loss goal of approximately >10%. Furthermore, it is expected that there will be improvement of other markers of metabolic disease. These include improvement of lipid values (LDL-C, HDL-C, Triglycerides, Total Cholesterol) as well as blood pressure with expected blood pressures of below 130/80 in greater than 50% of participants. Finally, It is expected that 50% or greater participants will have improvement of glycemic control. It is anticipated that greater than 50% of participants will have improvement of glycemic control and achieve normoglycemia. These values will be determined based upon fasting glucose or A1c. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The significance of this intervention is enormous. By demonstrating feasibility in this trial, we can work toward both assessing efficacy and possibly dissemination of this model program. If these interventions provide durable changes at scale, this could help slow the epidemic of obesity and obesity related comorbid conditions.

4036

### POSITIVE EXPERIENCE OF INFORMED CONSENT UNDERSTANDING AT A METROPOLITAN MULTI-INSTITUTIONS CTSA HUB

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**OBJECTIVES/GOALS:** There is not much known on how to improve informed consent understanding and there are no effective interventions that have been identified to improve understanding rates of information. This study seeks to assess participants understanding of the informed consent. **METHODS/STUDY POPULATION:** We studied a non-probability sample of 245 participants, 57% female, with age range from 6 to 84, currently enrolled in clinical trials conducted at an urban city, multi CTSA institution. A self-administered questionnaire approved by IRB was utilized. Redcap database was utilized for data entry. The items in the questionnaire reflected understanding of the informed consent (e.g., purpose for the study, participants' rights, risks, benefits). Participants completed the survey during their first visit to the research centers or on a follow-up visit. Data were collected from July 2018 to November 2019. Data were analyzed descriptively by summary statistics. **RESULTS/ANTICIPATED RESULTS:** African Americans were 44%, Non-Hispanic Whites were 36%, Hispanic 6%. Others 13%. 52% married, 12% completed High school, 74.8% completed College, 13% less High school. 91% read the form themselves. 99% knew the purpose of the study; 99% knew they could quit the study at any time. While (113) 47% indicated knowledge of the potential risk, only (12)10.6% could not list any associated risk. 98% stated they had information on who to call with questions regarding the study. (204)86% knew of a potential benefit, only (11)5% could

not name some study benefit. 38% were unsure/did not know the total number of visits study required of them. 74% knew the duration of the study. DISCUSSION/SIGNIFICANCE OF IMPACT: Extended discussion and more time on one-one by the study teams in this CTSA tend to increase trust. This approach has been reported to be most effective in improving participant understanding of informed consent process and may result in the positive experience.

4298

### Prediction models for pulmonary tuberculosis treatment outcomes: a systematic review

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OBJECTIVES/GOALS: Many clinical prediction models have been developed to guide tuberculosis (TB) treatment, but their results and methods have not been formally evaluated. We aimed to identify and synthesize existing models for predicting TB treatment outcomes, including bias and applicability assessment. METHODS/STUDY POPULATION: Our review will adhere to methods that developed specifically for systematic reviews of prediction model studies. We will search PubMed, Embase, Web of Science, and Google Scholar (first 200 citations) to identify studies that internally and/or externally validate a model for TB treatment outcomes (defined as one or multiple of cure, treatment completion, death, treatment failure, relapse, default, and lost to follow-up). Study screening, data extraction, and bias assessment will be conducted independently by two reviewers with a third party to resolve discrepancies. Study quality will be assessed using the Prediction model Risk Of Bias Assessment Tool (PROBAST). RESULTS/ANTICIPATED RESULTS: Our search strategy yielded 6,242 articles in PubMed, 10,585 in Embase, 10,511 in Web of Science, and 200 from Google Scholar, totaling 27,538 articles. After de-duplication, 14,029 articles remain. After screening titles, abstracts, and full-text, we will extract data from relevant studies, including publication details, study characteristics, methods, and results. Data will be summarized with narrative review and in detailed tables with descriptive statistics. We anticipate finding disparate outcome definitions, contrasting predictors across models, and high risk of bias in methods. Meta-analysis of performance measures for model validation studies will be performed if possible. DISCUSSION/SIGNIFICANCE OF IMPACT: TB outcome prediction models are important but existing ones have not been rigorously evaluated. This systematic review will synthesize TB outcome prediction models and serve as guidance to future studies that aim to use or develop TB outcome prediction models.

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### Predictors of mortality among non-severe hemophilia A patients in the United States

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OBJECTIVES/GOALS: To determine predictors of mortality in non-severe hemophilia A (NSHA) patients. METHODS/STUDY POPULATION: The ATHN dataset was used to identify NSHA patients who have authorized the sharing of their demographic and clinical information for research. Factors examined included race,

ethnicity, hemophilia severity, Hepatitis B, Hepatitis C and HIV infections. A mortality rate was calculated for each factors examined. The relative risk of death between patients in different categories of the factors was assessed by using the ratio of these mortality rates. To adjust for the effects of all of the studied factors with mortality, a multivariate analysis was performed using logistic regression. All hypothesis testing was two-tailed, with a significance level of .05. RESULTS/ANTICIPATED RESULTS: A total of 6,606 NSHA patients were followed for an average of 8.5 years. During 56,064 person years of observation, 136 (2.1%) NSHA patients died; 20% of deaths were malignancy-related. Mortality rates were similar across racial group. Hispanic patients were 60% less likely to die than non-Hispanic patients ( $p = 0.006$ ). Patients with Hepatitis C infection and HIV infection were 7 times as likely to die compared to those without infections ( $p < 0.001$ ). After adjusting for the effects of all examined factors in a multivariate analysis, patients with hepatitis C and HIV infection remain significantly associated with increased mortality at 6.1 times and 3.6 times the risk, respectively. DISCUSSION/SIGNIFICANCE OF IMPACT: Despite significant improvement in the therapeutic approaches for infectious diseases, Hepatitis C and HIV infections remain strong predictors of mortality in this NSHA cohort. CONFLICT OF INTEREST DESCRIPTION: N/A.

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### Preferences, Expectancies, and Stigma among Treatment Seeking Combat PTSD Patients

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OBJECTIVES/GOALS: Cognitive Processing Therapy (CPT) is a cognitive behavioral treatment for posttraumatic stress disorder (PTSD). CPT is effective in treating combat-related PTSD among Veterans and active duty service members. It is unknown whether improvement in PTSD is related to accommodation of patient preference of the modality of therapy, such as in-office, telehealth, and in-home settings. An equipoise-stratified randomization design allows for complete randomization of participants who are interested and eligible for all three treatment arms. It also allows participants to reject one treatment arm if they are not interested or eligible. Participants who elect to opt out of one arm are randomized to one of the two remaining treatment arms. The primary aim of this study was to evaluate differences in patient satisfaction, treatment stigma beliefs, and credibility beliefs based on patient treatment modality preference. The second aim of this study was to examine if baseline satisfaction, stigma beliefs, and credibility beliefs predicted PTSD treatment outcomes. METHODS/STUDY POPULATION: Active duty service members and veterans with PTSD ( $N = 123$ ) were randomized to one of three arms using an equipoise stratified randomization. Participants underwent diagnostic interviews for PTSD at baseline and post-treatment and completed self-report measures of satisfaction, stigma, credibility and expectancies of therapy. RESULTS/ANTICIPATED RESULTS: A series of ANOVAs indicated that there were group differences on patient stigma beliefs regarding mental health,  $F = 5.61$ ,  $p = .001$ , and therapist credibility,  $F = 5.11$ ,  $p = .002$ . Post hoc analyses revealed that participants who did not opt of any treatment arm demonstrated lower levels of