

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.

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### 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

stigma beliefs compared to participants who opted-out of in-office,  $p = .001$ . Participants who opted out of in-home viewed the therapist as less credible compared to participants who did not opt of any arm,  $p = .004$ . Multiple regression analysis found that baseline patient satisfaction, stigma beliefs, and credibility beliefs were not predictive of PTSD treatment outcomes,  $p > .05$ . DISCUSSION/SIGNIFICANCE OF IMPACT: Combat PTSD patients may opt out of in-office therapy due to mental health stigma beliefs, and visibility in mental health clinics may be a concern. For patients who opted out of in-home therapy, lack of credibility may have decreased participants' desire for therapists to enter their home. Despite concerns of mental health stigma and the credibility of the therapy in certain treatment arms, patients in each treatment arm significantly improved in PTSD symptomatology. Moreover, patient characteristics, including satisfaction, stigma, and credibility of the therapy, did not significantly predict treatment outcomes, which demonstrates the robustness of Cognitive Processing Therapy.

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### Prostate cancer multiparametric MRI comparison study of 3T versus 7T in terms of lesion detection and image quality\*

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OBJECTIVES/GOALS: The goal of this study was to perform a comparative, multi-reader, retrospective clinical evaluation of prostate multiparametric MRI (mpMRI) at 3 Tesla (3T) vs. 7 Tesla (7T) primarily in terms of prostate cancer localization. Subjective measures of image quality and artifacts were also evaluated. METHODS/STUDY POPULATION: Nineteen subjects were imaged at 3T and 7T between March 2016 and October 2018 under IRB-approved protocols. Four radiologists retrospectively and independently reviewed the data, and completed a two-part assessment for each dataset. First, readers assessed likelihood of cancer using Prostate Imaging Reporting & Data System (PI-RADS) guidelines. Accuracy of cancer detection was compared to findings from prostate biopsy. The numbers of correctly or incorrectly classified sextants were summed across all four readers, then used to summarize detection performance. Second, readers assigned a score on a five-point Likert scale to multiple image quality characteristics for the 3T and 7T datasets. RESULTS/ANTICIPATED RESULTS: Sensitivity and specificity of 3T and 7T datasets for sextant-wise cancer detection were compared by paired two-tailed t-tests. Readers identified more sextants harboring cancer with the 3T datasets while false-positive rates were similar, resulting in significantly higher sensitivity at 3T with no significant differences in specificity. Likert scores for image quality characteristics for 3T and 7T datasets were compared by applying paired two-tailed t-tests to mean scores of the four radiologists for each dataset. Readers generally preferred the 3T datasets, in particular for staging and assessment of extraprostatic extension as well as overall quality of the contrast-enhanced data. DISCUSSION/SIGNIFICANCE OF IMPACT: Readers agreed 7T prostate mpMRI produced images with more anatomic detail, though with equivocal clinical relevance and more pronounced artifacts. Reader unfamiliarity with 7T images is a major extenuating factor. Forthcoming technological developments are anticipated to improve upon the results.

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### Recruiting hidden and sensitive populations: methods for recruitment of pregnant women who regularly use cannabinoids

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OBJECTIVES/GOALS: Prenatal cannabinoid use is increasing and more studies are needed to describe the neurodevelopmental impact on the fetus. However, pregnant cannabinoid users are a "hidden population," which makes identification of these individuals for research difficult. Our study will employ three methods of recruitment and evaluate the success of each method. METHODS/STUDY POPULATION: We will recruit a total of 40 women in the third trimester of pregnancy who regularly use cannabinoid products thought to contain tetrahydrocannabinol (THC) and/or cannabidiol (CBD) throughout their pregnancies, and 20 control pregnant women who do not use those products. The purpose of this study is to evaluate the effects of prenatal cannabinoid use on the neurodevelopment of their offspring over the first year of life. We will employ three recruitment methods. First, targeted recruitment will occur in two university-based obstetrical clinics, where the obstetrician will present the study material and contact information. Second, we will utilize social media advertisements targeted to a specific demographic of Facebook users. Finally, we will employ the traditional method of distributing flyers in a non-targeted manner. We will track methods of recruitment success and gather information from the mothers on their preferences for recruitment approaches. RESULTS/ANTICIPATED RESULTS: Recruitment will start in January 2020 and continue for several months. We anticipate that the targeted method will yield the highest number of participants, and participants with the best fit for the inclusion criteria. However, it is possible that those women will be deterred by fear of having their drug use status revealed to their care providers, even though all research activity will occur independently from clinic visits and will not be transmitted to the electronic health record. The inclusion of a control group will also help foster "anonymity" for participants. The social media method has the potential for the greatest reach, but we expect many of these potential participants will fail to meet inclusion/exclusion criteria, as this is not as targeted as the first method. We anticipate a similar issue with the flyer-based approach. DISCUSSION/SIGNIFICANCE OF IMPACT: Optimizing recruitment of hidden and sensitive populations is crucial for clinical and translational research. Our goal is to identify strategies that can lead to best practices for engagement of those populations. Our conclusions could be applied in recruitment of sensitive populations for other clinical and translational research projects.

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### Relationship between recent drinking history, subjective response to alcohol, and sex in HRV in non-dependent drinkers

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OBJECTIVES/GOALS: Previous research has shown acute and chronic alcohol effects on cardiac function, including elevated heart