

black patients had a 1% increased odds of mortality (OR 1.01;  $p < 0.01$ ). DISCUSSION/SIGNIFICANCE OF FINDINGS: Black patients have increased odds of dying from septic shock compared to white patients after controlling for age, selected comorbid conditions, and markers of illness severity. Future work is needed to move beyond demonstrating septic shock disparities and towards understanding the underlying factors.

83551

### Current implementation of expedited partner therapy for the treatment of *N. Gonorrhoeae* and *C. Trachomatis* infection: Integrating mixed methods with cost-effectiveness analysis

Emily Ann Groene Faherty<sup>1</sup>, Kumi Smith<sup>2</sup>, Christy M. Boraas<sup>3</sup>, Sarah M. Lofgren<sup>3</sup> and Eva A. Enns<sup>2</sup>

<sup>1</sup>University of Minnesota Clinical and Translational Science

Institute; <sup>2</sup>University of Minnesota School of Public Health;

<sup>3</sup>University of Minnesota Medical School

ABSTRACT IMPACT: This work will estimate current EPT implementation in Minnesota and provide cost-effectiveness analyses of different implementation scenarios to inform STI treatment policy. OBJECTIVES/GOALS: This research aims to 1) assess current implementation of Expedited Partner Therapy (EPT) as treatment for *C. Trachomatis* (chlamydia) and *N. Gonorrhoeae* (gonorrhea) among healthcare providers in Minnesota and to 2) simulate the current burden of chlamydia and gonorrhea infections to test the cost-effectiveness of increasing EPT implementation. METHODS/STUDY POPULATION: We will conduct key informant interviews (KII) and an online survey of health providers across the continuum of care for chlamydia and gonorrhea treatment. Based on experience in prior studies, the KII sample size is expected to be about 15 informants. KIIs will be carried out among providers who submitted EPT protocols to the Minnesota Department of Health to understand how EPT is currently being implemented. KII results will inform the online survey of health providers, which will estimate how many providers across the state provide EPT. We will distribute the survey through Minnesota health provider networks to achieve a sample of at least 500 health providers. The KII and survey results will inform model structure and parameter values for a compartmental cost-effectiveness model of EPT. RESULTS/ANTICIPATED RESULTS: Initial results from KII pilots suggest that EPT is primarily provided through a paper script for the sexual partner of a patient who tests positive for CT or NG by the treating provider. Less commonly, a patient's partner who is already a patient in the health system may receive notification and treatment through the provider. While EPT is legal in Minnesota, concerns about medical liability for adverse reactions and difficulty obtaining paper scripts in electronic workflows are barriers to implementation. The statewide survey will include questions to estimate the likelihood of EPT provision among providers when these concerns are addressed. These figures will be integrated into the cost-effectiveness model to simulate outcomes and costs across different EPT implementation scenarios. DISCUSSION/SIGNIFICANCE OF FINDINGS: The statewide survey will define cost-effectiveness model parameters, including the proportion of providers in the state who currently provide EPT or would be willing to provide EPT under different scenarios. Study findings will be shared with health provider networks and health departments to inform STI treatment procedures and state EPT policies.

### Clinical Trial

27646

### Spinal Control Impairments During Two Clinical Tests of Lower Limb Movement in People with and without Low Back Pain

Stacey Chen, Quenten Hooker, Vanessa Lanier, Linda Van Dillen  
Washington University of St. Louis

ABSTRACT IMPACT: Our work may be able to impact the examination and clinical decision making of a clinician to identify and target movement impairments to treat people with low back pain. OBJECTIVES/GOALS: Test if the magnitude of spinal control impairments is different in two clinical tests of lower limb movement in people with and without low back pain (LBP). The impairment is defined as the time difference between the start of limb to lumbopelvic motion. Also, test if the magnitude of impairments across tests is associated with LBP intensity and function. METHODS/STUDY POPULATION: 18 controls and 21 people with LBP (51.6% F, 34.5 ± 11.5 yrs) participated in a cross-sectional, laboratory-based study. Subjects completed the modified Oswestry Disability Questionnaire (LBP-related functional limitation measure; 0-100%) and the Numeric Pain Rating Scale (LBP intensity; average pain prior 7 days; 0-10) self-report surveys and clinical tests of hip medial and lateral rotation performed in prone. A three-dimensional motion capture system was used to capture angular lumbopelvic and hip motion across time. A 2x2 mixed model ANOVA will be used to examine the effects of group, hip rotation test, and group x hip rotation test. Separate bivariate correlations will be used to quantify the association of magnitude of the impairment to (1) average LBP intensity and (2) LBP-related functional limitation. RESULTS/ANTICIPATED RESULTS: We hypothesize that, compared to healthy controls, people with LBP will display a greater magnitude of impairment across the hip medial and lateral rotation tests. In addition, we hypothesize that the magnitude of the difference in impairment between people with LBP vs controls will be larger during the hip lateral rotation test compared to the hip medial rotation test. Finally, we hypothesize that in people with LBP the magnitude of the impairments across tests will be associated with LBP intensity and LBP-related functional limitation. DISCUSSION/SIGNIFICANCE OF FINDINGS: If our hypotheses are supported, the hip rotation tests would further be recognized as a key part of a clinician's examination and an important target for treatment of LBP.

35991

### Towards a Novel Robotic Control Scheme to Improve Lower Extremity Movement Post-Stroke

Tom Ruopp, Dr. Brian Schmit and Dr. Sheila Schindler-Ivens  
Marquette University

ABSTRACT IMPACT: Effective robotic pedaling therapy would allow stroke survivors a precision, customized, and adaptable therapy to help recover lower extremity function. OBJECTIVES/GOALS: It has been observed that people post-stroke can pedal each limb individually but not simultaneously when the bicycle is split-crank. This implies that lower extremity movement difficulties are affected more by interlimb rather than unilateral coordination deficits. This work seeks to further develop a robotic split-crank

pedaling therapy device. **METHODS/STUDY POPULATION:** This work uses a robotic split-crank pedaling device to facilitate rehabilitation of interlimb coordination, measured by continuous relative phase (CRP) and paretic neuromuscular output. The effects of three control schemes were tested: assist, resist, and assist+resist. Each limb was strapped to a pedal which was connected to a motor. The participants were asked to pedal forward while keeping the pedals antiphase. The robot aided or resisted according to the activated control scheme. Control schemes were tested on two stroke participants. The control schemes respond proportionally to phasing deviation from 180 degrees. The assist scheme assisted the lagging limb while the resist scheme resisted the leading limb. The assist+resist did both control actions. **RESULTS/ANTICIPATED RESULTS:** For the assist scheme, CRP improved for participant 1 (P1) and declined for participant 2 (P2). P1 increased paretic velocity while P2 decreased. Rectus Femoris (RF) and Biceps Femoris (BF) activity of both limbs lowered for P1. RF and BF activity of both limbs remained about the same but shifted for P2. For the resist scheme, CRP improved for P1 and declined for P2. P1 increased paretic velocity while P2 decreased. P1 increased BF activity of both limbs while RF activity remained constant. P2 increased paretic BF activity and non-paretic RF activity. For the assist+resist scheme, CRP improved for both participants. Both participants increased paretic velocity. P1 increased paretic BF activity and decreased RF activity. P2 better modulated paretic BF and RF. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** All control schemes augmented performance, however the assist+resist scheme showed the most promise in terms of CRP and muscle activity. More participants are needed to determine true effects of each control scheme. The control scheme selected will be the foundation for further improvements such as adaptive control and extrinsic feedback.

76644

### **Cognitive and Behavioral Outcomes in Adolescents with Sickle Cell Disease Before and After a Telehealth Cognitive Remediation Program to Prepare for Transition of Care**

Donna Murdaugh, Tiffany Tucker, Victoria Seghatol-Eslami, Anne Stewart, Jeffery Lebensburger, Eric Wallace, Smिता Bhatia  
University of Alabama at Birmingham School of Medicine

**ABSTRACT IMPACT:** This study is providing a telehealth intervention for the first time in patients with sickle cell disease with the goal of improving cognitive functioning and preparing adolescents for successful transition of care to adult healthcare providers. **OBJECTIVES/GOALS:** There is a high prevalence of cognitive impairment in adolescents with sickle cell disease (SCD). The purpose of this study is to test the efficacy of an individualized cognitive remediation program designed to promote not just cognitive function, but also adaptive and self-management skills necessary for successful transition to independence. **METHODS/STUDY POPULATION:** 12 participants with SCD (5 males, ages 10-16) participated in an individualized program, Cognitive-Remediation of Executive and Adaptive Deficits in Youth [C-READY], consisting of three main components: individual goal-based therapy, parent training sessions, and home skill practice. C-READY sessions occur one-on-one with a trained therapist for 8 sessions conducted over 4 weeks. Weekly parent training sessions are also conducted as part of the C-READY program. All of these sessions occurred via telehealth

video-calling between the therapist and the adolescent/parent. Participants were evaluated before and after the C-READY program using neuropsychological assessment measures and transition readiness questionnaires. Parents also completed ratings on telehealth delivery, content, and timing. **RESULTS/ANTICIPATED RESULTS:** Repeated measures ANOVA indicated significant improvement in transition readiness behaviors as rated by parents, including improved independence in medication management ( $p = 0.029$ ) and in talking with their healthcare providers ( $p = 0.019$ ). Significant improvement was also demonstrated on a neuropsychological measure related to executive function skills, specifically inhibition and switching ( $p = 0.012$ ). Results from telehealth surveys (rated on a 5-point Likert scale) indicated overall satisfaction with services (4.2/5), including visual (4/5) and voice quality (4.3/5) of telehealth equipment. Ratings also indicated feeling that their privacy was respected (4/5) and that their interactions with their therapist were appropriate and sensitive (4.5/5). **DISCUSSION/SIGNIFICANCE OF FINDINGS:** These results provide support for interventions that focus on cognitive skills to improve behaviors necessary for successful transition of care in youth with SCD. Results are also promising for delivery via telehealth in order to address barriers related to access to care. Future results will continue to be reported, as this study is currently ongoing.

77523

### **Prospective cohort study of predominantly immigrant people with chronic hepatitis B in the Baltimore-metropolitan Washington D.C. area**

Lydia Tang

Institute of Human Virology, University of Maryland School of Medicine, Program in Oncology, University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center

**ABSTRACT IMPACT:** Building a patient cohort to support clinical-translational research in chronic hepatitis B **OBJECTIVES/GOALS:** The overall objective of my KL2 project is to delineate the effect of HIV coinfection, and CHB disease stage and hepatitis B (HBV) viremia on the ability of toll-like receptor 8 agonism to restore HBV-specific immune cell function. This abstract describes the characteristics of the cohort from which research blood samples for my KL2 are collected. **METHODS/STUDY POPULATION:** HOPE is a prospective cohort study enrolling people with CHB including HIV/CHB coinfection, and resolved CHB. Participants are enrolled at primary care clinics in Maryland, Washington D.C., and Virginia. Standard-of-care antiviral treatment with tenofovir alafenamide (TAF) is prescribed through the study if indicated. Patients receiving TAF from the study are either starting treatment, or switching to TAF from another antiviral medication. If receiving TAF, participants are seen every 3-6 months for medication refills, clinical and research blood draws, and adverse event evaluations. Liver fibrosis is measured by FibroScan and a minority undergo liver biopsy. **RESULTS/ANTICIPATED RESULTS:** So far, 204 people have been enrolled, 177 with CHB (23 HIV/CHB coinfection), and 22 with resolved HBV infection. To date, 45 patients who were viremic at baseline and initiated on TAF have been enrolled. CHB predominantly affects Asian and African immigrants in the U.S, and the majority (77%) of HOPE participants are immigrants from these countries. The majority are male (70%), mean age 51 years (SD  $\pm 14$ ). So far, 86 people with CHB mono-infection have been prescribed TAF on-study.