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**OBJECTIVES/SPECIFIC AIMS:** Objective: The Rockefeller University Center for Clinical and Translational Science (RU-CCTS), Clinical Directors Network (CDN), and Carter Burden Network (CBN), a multisite senior services organization serving East Harlem, NY, formed a community-academic partnership to examine the use of a simple validated surrogate measure of overall health status and frailty in this population. Many CBN seniors are racial/ethnic minorities, low-income, and suffer from multiple chronic conditions, depression and food insecurity. Multiple biological, musculoskeletal, psychosocial and nutritional factors contribute to frailty, which has been defined variously in senior health outcomes research. The CTSA-funded Pilot Project aims to: (1) Engage CBN seniors and stakeholders in priority-setting, joint protocol development, research conduct, analysis, and dissemination; (2) Characterize the health status of the CBN seniors using validated measures; (3) Establish database infrastructure for current and future research; (4) Understand how health and senior activities information can be used to create programs to improve senior health. **METHODS/STUDY POPULATION:** Methods: (1) CEnR-Navigation, a collaborative program/process that consists of semistructured meetings and activities facilitated by expert Navigators, was used for partnership development and to engage Carter Burden seniors to refine priorities and research questions, provide feedback on study design and conduct, and analyze and disseminate results. (2) Standard physical measurements and validated survey instruments were used to collect health information; target enrollment is 240 seniors across 2 sites (1 hosted within a subsidized housing facility and Social Model Adult Day Program). (3) A REDCap-based platform was designed for data capture and import. Individual attendance at senior activities for the prior year was extracted from existing records. The primary outcome is frailty, as measured by validated walk/balance tests (Short Physical Performance Battery). Secondary outcomes include measures of engagement, and association of use of services/activities with the primary outcome. **RESULTS/ANTICIPATED RESULTS:** (1) In total, 29 residents and 14 other stakeholders engaged in partnership-building, study design and implementation. (2) From May to November 2017, 98 participants were enrolled from site 1 (a residential site). Enrollment at site 2 (a senior center), begun in November, is projected for February completion. Characteristics of site 1 participants: median age = 63.6 years; Hispanic, 44.90% (44); White, 13.89% (10), Black, 62.50% (45); Asian, 4.17% (3); American Indian or Alaskan Native, 2.78% (2), and Other, 16.67% (12). Educational attainment: 51.04% (49) had not completed high school; 19.79% (19) were high school graduates; 18.75% (18) completed some college, and 10.42% (10) were college graduates. For the 85 participants reporting annual income: 64.71% (55) reported < \$10,000; 28.24% (24) reported \$10,000–\$15,000; 7.06% (6) were among the ranges from \$15,000 to \$50,000. The average body mass index (BMI) was 30, which is obese. For 83.67% (82) of site 1 participants, the BMI was in the range of overweight or obese. Half of participants (49) reported health literacy barriers in the Single Item Health Literacy Survey. Demographics and Frailty assessments (walk and balance tests) for participants enrolled at both sites will be reported. (3) Activity participation data for July 2016–November 2017 were recovered for 507 sessions at site 1 and are being analyzed. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Here we report progress in developing a sustainable community-academic partnership, infrastructure and research capacity with the CBN senior services organization, and characterizing this at-risk population, of whom 71% have a high school education or less, 93% live in extreme poverty, and 84% are overweight or obese. A simple validated frailty measure in seniors will enable the acceleration of community-based translational research addressing senior health, and examine changes in this measure in relationship to the utilization of senior services.

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**OBJECTIVES/SPECIFIC AIMS:** Clostridium difficile infection (CDI) is the most common cause of antibiotic-associated diarrhea and an increasingly common infection in children in both hospital and community settings. Between 20% and 30% of pediatric patients will have a recurrence of symptoms in the days to weeks following an initial infection. Multiple recurrences have been successfully treated with fecal microbiota transplantation (FMT), though the body of evidence in pediatric patients is limited primarily to case reports and case series. The goal of our study was to better understand practices, success, and safety of FMT in children as well as identify risk factors associated with a failed FMT in our pediatric patients. **METHODS/STUDY POPULATION:** This multicenter retrospective analysis included 373 patients who underwent FMT for CDI between January 1, 2006 and January 1, 2017 from 18 pediatric centers. Demographics, baseline characteristics, FMT practices, C. difficile outcomes, and post-FMT complications were collected through chart abstraction. Successful FMT was defined as no recurrence of CDI within 60 days after FMT. Of the 373 patients in the cohort, 342 had known outcome data at two months post-FMT and were included in the primary analysis evaluating risk factors for recurrence post-FMT. An additional six patients who underwent FMT for refractory CDI were excluded from the primary analysis. Unadjusted analysis was performed using Wilcoxon rank-sum test, Pearson  $\chi^2$  test, or Fisher exact test where appropriate. Stepwise logistic regression was utilized to determine independent predictors of success. **RESULTS/ANTICIPATED RESULTS:** The median age of included patients was 10 years (IQR: 3.0, 15.0) and 50% of patients were female. The majority of the cohort was White (89.0%). Comorbidities included 120 patients with inflammatory bowel disease (IBD) and 14 patients who had undergone a solid organ or stem cell transplantation. Of the 336 patients with known outcomes at two months, 272 (81%) had a successful outcome. In the 64 (19%) patients that did have a recurrence, 35 underwent repeat FMT which was successful in 20 of the 35 (57%). The overall success rate of FMT in preventing further episodes of CDI in the cohort with known outcome data was 87%. Unadjusted predictors of a primary FMT response are summarized. Based on stepwise logistic regression modeling, the use of fresh stool, FMT delivery via colonoscopy, the lack of a feeding tube, and a lower number of CDI episodes before undergoing FMT were independently associated with a successful outcome. There were 20 adverse events in the cohort assessed to be related to FMT, 6 of which were felt to be severe. There were no deaths assessed to be related to FMT in the cohort. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The overall success of FMT in pediatric patients with recurrent or severe CDI is 81% after a single FMT. Children without a feeding tube, who receive an early FMT, FMT with fresh stool, or FMT via colonoscopy are less likely to have a recurrence of CDI in the 2 months following FMT. This is the first large study of FMT for CDI in a pediatric cohort. These findings, if confirmed by additional prospective studies, will support alterations in the practice of FMT in children.

2092

### A multicenter study of fecal microbiota transplantation for Clostridium difficile infection in children

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2250

### Barriers to healthcare after the Affordable Care Act: A qualitative study of Los Angeles safety net patients' experiences with insurance and healthcare

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**OBJECTIVES/SPECIFIC AIMS:** N/A. **METHODS/STUDY POPULATION:** Over a million people gained insurance in Los Angeles (LA) County under the Affordable Care Act (ACA). The vast majority gained Medicaid—government sponsored insurance with low-cost sharing. LA County also made significant investments in the safety net including a program called MyHealthLA, which provides primary and tertiary care for the residually uninsured including poor undocumented individuals at specific sites. Despite this insurance expansion,

approximately 3 quarters of a million people in the county remain uninsured. Regardless of insurance status, nearly a quarter of LA County residents reported having difficulty obtaining needed medical care, and among those making less than the poverty level, 43% had difficulties. There is still much to understand about barriers to obtaining insurance and accessing healthcare in Los Angeles in the post-ACA era. Our primary objective was to understand how safety net patients are obtaining, maintaining and using their insurance after the ACA. Specifically we hope to understand the barriers and drivers of these three processes. **RESULTS/ANTICIPATED RESULTS:** We conducted a qualitative study of 34 safety net patients with 3 different insurance types in LA County. We conducted in-person interviews with adult patients (ages 18–64 years), who had either MediCal, MyHealthLA, or were uninsured. Our interview guide was based on existing literature, a previous qualitative study conducted in Massachusetts and input from experts in the field. We pilot tested our interviews in English and Spanish and then recruited our participants from 3 sites: LAC+USC (a publically funded county hospital), The Wellness Center (a resource center for safety net patients), and White Memorial Medical Center (a private safety net hospital). We approached patients in the ED and urgent care waiting rooms and obtained informed consent for this IRB approved study. We excluded patients who were non-English and non-Spanish speaking or too ill to interview. We recorded interviews, which were then transcribed and translated into English by a contracted agency. We analyzed our interviews using a framework approach, which included a set of a priori codes from the literature as well as emerging codes from patient responses. We will check a sample of our transcripts for coding consistency (aiming for an inter-rater reliability of > 80%). **DISCUSSION/SIGNIFICANCE OF IMPACT:** We recruited a diverse group of patients that were demographically representative of those who gained insurance under the ACA (childless adults making less than 138% of the Federal Poverty Level). Our preliminary results (based on 17 transcripts), suggest that patients, regardless of insurance type have difficulty accessing primary care. We identified seven domains under the broader theme of barriers to accessing primary care: finding a primary care clinic or physician (PCP), getting timely appointments, geography and transportation, continuity of care, using the Emergency Department (ED) or urgent care as a PCP, switching PCPs or clinics, and cost or coverage.

2206

### Chicago Kids Advisory Board: A novel approach to engaging adolescent students in pediatric clinical research

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**OBJECTIVES/SPECIFIC AIMS:** Stakeholder engagement has been proposed to help realign clinical and translational research with the needs of clinicians, patients, and policymakers. Increasingly, funders and researchers seek to partner with stakeholders to inform study design, execution and dissemination of results. Kids and families Impacting Disease through Science (KIDS) is a program of the American Academy of Pediatrics that seeks to engage youth in clinical research. United States KIDS programs participate in International Children's Advisory Network activities. The Chicago KIDS Advisory Board program at Walter Payton College Preparatory School, a Chicago Public School, was initiated in 2015 to foster and develop interest in careers in science, research and healthcare and provide youth perspectives to academic and industry researchers on the design and development of pediatric research studies. This project engaged youth advisors in creation and evaluation of a video explaining clinical research and informed consent for Ann & Robert H. Lurie Children's Hospital, a clinical partner of the Northwestern University Clinical and Translational Sciences Institute. **METHODS/STUDY POPULATION:** The Payton program advisory board sessions are 1.5hr interactive seminars held on 1–2 school days each month. During the 2016–2017 school year, students participated in 3 stakeholder sessions, led by Lurie Children's hospital researchers, to advise development of a script, storyboards, and ultimately an animated video that informs children and families about participation in clinical research to aid in the decision-making process. Qualitative research methods were used to examine attitudes towards clinical research and assess the video on content objectives, clarity of concept, and appropriateness for a pediatric audience. Following production, students from the 2017–2018 advisory board viewed the final video and presurvey and postsurvey were administered to assess the effect of video on the comprehension of 8 key concepts of informed consent on a 5-point Likert scale. The Wilcoxon signed-rank test was used to compare median pretest and post-test ranks. Results of this analysis were reviewed in seminar and students provided written contribution to this abstract. **RESULTS/ANTICIPATED RESULTS:** In total, 11 Walter Payton high school students participated in video development and 27, who were naïve to development, participated in the pre and post evaluation sessions. Students ranged from Freshman to Seniors and reflected the diverse ethnic and racial background of Chicago. A positive change from pre to post-test survey was observed in all questions presented assessing comprehension of key concepts of

informed consent. The median post-test ranks were statistically significantly higher than the median pre-test ranks for all questions ( $p < 0.01$  in all). **DISCUSSION/SIGNIFICANCE OF IMPACT:** Chicago KIDS youth advisors were engaged in all aspects of the design of the research tool and gained experience in stakeholder contribution from study design to evaluation and publication. The students will next be involved in the design of a prospective randomized study to test the efficacy of the video compared with standard recruitment and consent practices. Given the difficulty of recruiting youth for clinical trials, development of effective engagement practices in is critically important. Our findings demonstrate the feasibility of utilizing youth advisors in a public school based setting.

2381

### Childhood adversity, attachment style, and home visiting engagement

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**OBJECTIVES/SPECIFIC AIMS:** This case-control study aims to determine the relationships among childhood adversity, attachment style, and the likelihood of accepting or declining a referral for HV. The study will serve as a pilot to inform the power analysis of a subsequently proposed full-scale study. **METHODS/STUDY POPULATION:** Using a case-control study design, 25 women who decline HV referral (cases) will be compared with 25 women who accept HV referral (controls) on their exposure to childhood adversity and attachment style. Women who are eligible for the study are English-speaking mothers who have been offered HV services by Health Care Access Maryland. Surveys are administered in-person, either in the participant's home or at another location (e.g., public library), based on participant preference. The dependent variable is participant's verbal response to the HV referral (accept/decline). The independent variable, childhood adversity, will be measured using the Philadelphia Urban Adverse Childhood Experiences (ACEs) Survey and the Attachment Style Questionnaire (ASQ). Control variables include demographics (i.e., age, race, education, employment, housing, marital status), obstetric history (i.e., previous preterm birth, miscarriage, fetal death, infant death, abortion), and current psychosocial risk factors (i.e., history of substance use, intimate partner violence, depression). Descriptive comparisons will be done for the independent and control variables in controls versus cases. Bivariate analysis will examine associations between the odds of being a case and ACE score and ASQ score. Multivariate logistic regression models will be used to examine the relationship between ACE total and ASQ score; exposure to ACE in cases versus controls; and the odds of an avoidant and anxious attachment styles in cases versus controls. **RESULTS/ANTICIPATED RESULTS:** We hypothesize that (a) higher ACE scores will be positively associated with a higher level of avoidant attachment; (b) higher ACE scores will be positively associated with declining a HV referral; and (c) higher levels of avoidant attachment will be associated with declining a HV referral. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Racial inequities in birth outcomes are pervasive and unjust. Non-Hispanic Black women experience births that result in infant mortality, fetal mortality, preterm birth, and low birth weight babies at more than double the rate of non-Hispanic White women in Baltimore and nationally. Prenatal and early childhood home visiting programs have been found to decrease maternal smoking and hypertensive disorder which are associated with PTB, reduce closely spaced births which is associated with fetal and infant death, and improve women's long-term economic self-sufficiency, child health and social outcomes. However, as community-based programs, these services are not reaching the majority of eligible women in low-income urban settings—women who are also disproportionately burdened with poor pregnancy-related health outcomes. Considering the potential to improve outcomes, the importance of eliminating health disparities, and the national and local investment in HV services, it is vital to understand why some women are not enrolling in prenatal HV programs. The findings from this and subsequent studies will inform the translation of evidence-based HV program outreach efforts for women with complex social history. It will inform the design of enhanced outreach and engagement efforts of HV programs to more reliably engage women.

2438

### Community-based research networks: Providing infrastructure for clinical and translational research in the State of Michigan

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**OBJECTIVES/SPECIFIC AIMS:** As the sole Clinical and Translational Science Award (CTSA) site in Michigan, the Michigan Institute for Clinical & Health