

hypothesize that a PHSI will be a valuable tool for stratifying patients in future research studies, as well as aiding prognosis in clinical situations. **DISCUSSION/SIGNIFICANCE OF IMPACT:** A validated composite PHSI would be a major advance in clinical hydrocephalus research and practice. A PHSI would allow investigators to stratify patients based on initial presentation for clinical research studies, which may in turn lead to the establishment of more standardized treatment guidelines. It would also facilitate studies investigating differential utilization of healthcare resources based on disease severity. Clinically, a PHSI would better equip physicians to counsel parents on what to expect for their child or future healthcare resource requirements.

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### PTSD: Understanding differences in trauma cognitions, memory, and emotional regulation

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**OBJECTIVES/SPECIFIC AIMS:** Low-income, urban adolescents experience high rates of interpersonal and community violence and consequently post-traumatic stress disorder (PTSD). Memory theory purports that the development of PTSD can be explained by dysfunctional trauma cognitions, high sensory and poor articulation of trauma memories, and poor emotional regulation. The purpose of this paper are as follows: (1) to describe trauma experiences and PTSD symptoms of a high-risk sample of low-income urban youth and (2) to explore if post-traumatic cognitions, trauma memory quality, or emotional regulation means differ in participants screening positive for PTSD as compared with those that did not screen positive. **METHODS/STUDY POPULATION:** A preliminary sample of low-income, urban adolescents (ages 16–21) at risk for homelessness took a web-based, self-report survey responding to questions related to their experiences of trauma and mental health ( $n=48$ ). PTSD was measured with the PTSD Checklist for DSM-5 criteria (PCL-5). A cut-off of 33 was used as a positive screen for PTSD. Post-traumatic cognitions was measured with the post-traumatic cognition inventory (pcti) with higher scores representing greater dysfunctions and negative cognitions. Trauma memory was measured with the Trauma Memory Quality Questionnaire (TMQQ) with higher scores representing more sensory-based and poorly verbalized memories. Emotional regulation was measured using the Difficulties in Emotional Regulation Scale (DERS) with higher scores representing greater difficulties with emotional regulation. All 3 variables conceptually represented theoretical constructs of the development of PTSD. Initial data from the baseline survey was used conducted a 1-way ANOVA to compare the difference in post-traumatic cognition, quality of trauma memory, and emotional regulation in those that screened positive for PTSD as compared with their peers. **RESULTS/ANTICIPATED RESULTS:** The majority of this population (80%) experienced at least 1 traumatic life event. This sample experienced an average of 10.5 lifetime traumas ( $SD=10.6$ ). Of those experiencing trauma about 20% ( $n=8$ ) reported a positive PTSD screen (PCL-5). There were significant group differences among those screening positive for PTSD and their peers in the following variables: (1) pcti ( $F_{1,24}=10.43, p<0.004$ ), (2) TMQQ ( $F_{1,29}=11.02, p<0.002$ ), and (3) DERS ( $F_{1,36}=19.68, p=0.000$ ). The majority of this population (80%) experienced at least one traumatic life event. This sample experienced an average of 10.5 lifetime traumas ( $SD=10.6$ ). Of those experiencing trauma about 20% ( $N=8$ ) reported a positive PTSD screen (PCL-5). There were significant group differences among those screening positive for PTSD and their peers in the following variables: 1) pcti [ $F(1,24)=10.43, p<0.004$ ], 2) TMQQ [ $F(1,29)=11.02, p<0.002$ ], [ $F(1,36)=19.68, p=0.000$ ]. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This sample reported high rates of trauma and PTSD. Constructs representing memory theory (cognition dysfunction, quality of memory, and emotional regulation) all significantly differed among participants with PTSD compared with their peers. Consequently, it may be useful for trauma interventions to target the maladaptive post-traumatic cognitions, quality of traumatic memories, and emotional regulation in this population. These results will inform work that aims to explore if a trauma intervention, based on the memory theory can improve PTSD symptoms. Anticipated data collection completion in March 2017 ( $n=120$ ).

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### “Pipa” means early death: Obesity and cardiovascular disease (CVD) risks perception, knowledge and behavior among minority NYC cab drivers— A qualitative analysis

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**OBJECTIVES/SPECIFIC AIMS:** More than 2 out of 3 adults in the United States are overweight or obese. Obesity disproportionately affects minority

populations. There is limited data on obesity and CVD risks among inner-city minority cab drivers in New York City (NYC). The goal is to study perceptions, knowledge and health behaviors of Hispanic livery cab drivers of NYC that contributes to obesity. **METHODS/STUDY POPULATION:** We conducted an observational study of focus groups related to perception, knowledge, or behavior among Latino livery cab drivers of NYC. Direct transcription of the taped recordings into concepts were grouped into themes and common themes were categorized. The sample size of the focus groups was based on the saturation point where common themes emerged. **RESULTS/ANTICIPATED RESULTS:** In total, 25 Latino livery cab drivers were enrolled. Of those, 24 were men. Mean age is 53 years (21–69); body mass index (BMI) is 31 (22.8–38.7)  $kg/m^2$ ; 50% had hypertension and 27% had diabetes. Eight dominant themes emerged. Cab drivers were aware of their increased risk for CVD which most of them attributed to work stress, sedentary lifestyle, and poor eating habits “on-the-go”. In particular, they mentioned a tendency of having “Pipa,” a Spanish term denoting increased abdominal girth, which they equated to early death. Family and social support was an important facilitator in changing unhealthy behaviors. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Our study shows that minority cab drivers are generally obese or overweight and aware of their personal risk factors for CVD including central obesity. Social and family support may be key to improving their lifestyle. An evidenced-based health model that includes family education and decision support will be tested in our next study phase to understand if it can improve body weight.

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### Characterizing delayed transition to adult care in children with chronic kidney disease

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**OBJECTIVES/SPECIFIC AIMS:** As part of a larger effort to create a longitudinal record of care for patients with chronic kidney disease (CKD) in Delaware, we assessed transitions of care from pediatric to adult care. This study examined the length of time between last pediatric contact and first contact in the adult system in order to determine characteristics associated with delayed transition to adult care. **METHODS/STUDY POPULATION:** Patients who receive pediatric care at the Nemours/Alfred I. duPont Hospital for Children (Nemours) are transitioned to adult care between the ages of 18 and 21. Our study population consists of all patients seen in the Nephrology unit at Nemours for CKD, hypertension (HTN), or diabetes who turned 21 years old between 2007 and 2013. Records of office visits from Nemours, Christiana Care Health System (CCHS), and Nephrology Associates, P.A. (NAPA) were transformed into the OMOP common data model and merged. Patients who had at least 1 record in the Nemours EHR of pediatric care before age 21 and had at least 1 record in the CCHS or NAPA adult EHRs were considered transitioned. To identify characteristics associated with delayed transition to adult care, we compared gender, race, ethnicity, age, comorbidities, and level of kidney function at the last pediatric visit between patients whose transition gap was less than 1 year and patients whose gap was 1 year or more. Kidney function was estimated by calculating glomerular filtration rate (GFR). Nemours estimates GFR in children using the revised Schwartz equation, which is based on serum creatinine and height. To calculate adult GFR, we used the CKD-Epi equation, which is based on serum creatinine, age, sex, and race and is widely used to derive adult GFR. As kidney function declines, GFR decreases. We used Fisher exact test to compare categorical variables and t-test to compare age and GFR. **RESULTS/ANTICIPATED RESULTS:** We found only 109 (25%) patients who had records in our adult offices out of the 440 Nemours patients in our data set. Of the 109 transitioned patients, 54 had office visits at CCHS, 37 at NAPA, and 18 at both locations. Examining the office visits of the 109 transitioned patients, 34 (31%) had an overlap in visits defined as an office visit at CCHS or NAPA before the last office visit at Nemours, and 75 (69%) did not have an overlap. The median gap between last pediatric and first adult office visit for the 75 patients without an overlap was 615 days (range 8–3495 d). Only 6 (6%) of the 109 transitioned patients had overlapping GFR measurements from pediatric to adult care, and all of the adult GFR calculations (CKD-Epi) were greater than the pediatric GFR calculations (Schwartz). The difference between child and adult GFR ranged from 8.2 to 87.1  $mL/minute$  per  $1.72 m^2$ . **DISCUSSION/SIGNIFICANCE OF IMPACT:** During the transition from pediatric care to adult care, many young adults with CKD experience declines in health outcomes and comorbidities such as diabetes and HTN complicate self-management. Lack of overlap between pediatric and adult care office visits indicates a delay in executing this transition. In our population of 109

transitioned patients, 69% did not have an overlap in care, and 50% of those without overlap had a gap of more than 615 days (1 y, 8 mo). Our analysis suggests that young adults who are younger at last pediatric office visit are more likely to delay transitioning to adult care. Transitioning from the nurturing environment of pediatric care to adult care is a complex process and could be challenging for young adults with CKD. Transition clinics may be necessary to improve the coordination of care and help these young adults keep their physician appointments.

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### Qualitative study of CVS risks perception, knowledge, and behavior among hypertensive African-Americans in South Bronx, NY

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**OBJECTIVES/SPECIFIC AIMS:** Compared to others, African-Americans (AA) have a higher prevalence of hypertension. Although, hypertension control has been well studied in clinical settings, a significant number of AA patients have uncontrolled hypertension. We conducted a qualitative study on CVD risk perceptions, knowledge, and behaviors among hypertensive AA in the South Bronx, NY. **METHODS/STUDY POPULATION:** Hypertensive AA participants, 18 years and older were recruited at a community-based hospital clinic. Focus groups with open-ended questions on CVD knowledge, perception, and behaviors was conducted. Responses were transcribed and transcript was analyzed using open code method. Concepts were formulated, which were then categorized into dominant themes. The sample size was based on the saturation point related to emerging common themes. **RESULTS/ANTICIPATED RESULTS:** There were 21 patients participated in 3 focus group sessions. The median age was 59 years; BMI median of 31.5 kg/m<sup>2</sup>; 76% were female. In total, 57% had controlled BP and 67% were diagnosed with diabetes mellitus; 8 themes emerged of which unhealthy diet was dominant. Participants acknowledged eating fried foods and meat seasoned with salt contributed to their hypertension. Their food choices were based on family tradition and economical cost more than nutritional value. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This study reveals that inner city hypertensive AA patients have misperceptions, gaps in knowledge, and barriers to healthy behaviors. We propose to partner with them using shared decision making to raise awareness, knowledge and change in behaviors to prevent CVD in community settings.

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### A checklist for developing and implementing a high-impact monitoring and evaluation system in clinical and translational science programs

Boris Volkov

**OBJECTIVES/SPECIFIC AIMS:** This presentation will highlight the framework and domains of the monitoring and evaluation (M&E) System Checklist created in response to the need for practical guidelines and intended to improve the quality, efficiency, and consistency of monitoring and evaluation of the clinical and translational work. The recently published NCATS Strategic Plan (2016; p. 18) presents the following objectives and guidelines that implicitly suggest the need for sound M&E: "Objective 4-1: Continually assess and optimize internal business practices" and "Objective 4-2: Ensure all scientific programs and operational activities are conducted in a rigorous, robust and data-driven manner." Given the complexity of clinical and translational work and associated monitoring/evaluation processes and the dearth of practical tools in the CTR evaluation area, the need for such a checklist is clear. A "checklist" (a detailed list of items/steps required, things to be done, or points to be considered) is a type of informational job aid used to improve performance, reduce failure, deal with complexity, and ensure consistency and completeness in carrying out work. Checklists are popular in many fields—due to their brevity, concreteness, order, implicit (and sometimes explicit) mandate to do things right, and expectation for a checklist's being grounded in good practices and/or strong theory. A notable example is the famed WHO Surgical Safety Checklist (2008). The proposed M&E Checklist has been developed based on the author's extensive experience in internal evaluation, checklist development and use, and working with the Clinical and Translational Sciences Awards (CTSAs)—as the UMN CTSI M&E Director, ACTS Evaluation SIG Chair, and a Co-Lead of the Evaluators Working Group within the NCATS CTS Common Metrics Initiative. Although there is no "golden" algorithm that

will totally suit every organization, the M&E checklist provides useful guidelines for building M&E. The Checklist presents the key concepts and important issues in M&E development and implementation. It also incorporates a synthesis of 3 grounded frameworks: King and Volkov's Framework for Building Evaluation Capacity (2005), Simister's Framework for Developing M&E Systems for Complex Organizations (2009), and the award-winning CDC Framework for Program Evaluation in Public Health (1999). For the purposes of the proposed Checklist, an M&E system (or framework/approach) is understood as "a series of policies, practices and processes that enable the systematic and effective collection, analysis and use of monitoring and evaluation information" (Simister, 2009; p. 1). A well-designed M&E system ensures a consistent approach to the collection, analysis, and use of information, while allowing considerable scope for different parts of an organization to develop and apply their own solutions in response to their particular situations. The M&E Checklist structured around 3 key domains (adapted from the Volkov and King ECB Checklist, 2007): (1) M&E/organizational context: taking advantage of the internal and external organizational context, administrative culture, and decision-making processes. (2) M&E structures: creating structures—mechanisms within the organization—that enable the M&E development and use. (3) M&E resources: making M&E resources available and used. For each domain, the Checklist has a number of associated categories and activities. Specifically, the checklist adopts and adapts the following useful steps from Simister's approach: "Define the scope and purpose," "Perform a situational analysis," "Consult with relevant stakeholders," "Identify the key levels and focus areas," and "Integrate the M&E system horizontally and vertically," as well as the CDC Framework's steps "Engage stakeholders," "Focus the M&E Design," and "Ensure use and share lessons learned." With slight modification, the organizations can also utilize the Checklist as a rubric/assessment tool to gauge the status of their M&E capacity. **METHODS/STUDY POPULATION:** A case study of methodological/implementation tool development. There are no human subjects in this study, thus, Study Population is not applicable to this study. This study is not subject to IRB review. **RESULTS/ANTICIPATED RESULTS:** The proposed checklist approach shows sound promise to not only impact individual programs and their M&E systems but to also enhance internal evaluation capacity, critical thinking, learning, strategic management, and improvement within clinical and translational science organizations. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The ultimate goal and impact of the proposed checklist is to help ensure that organizations and their M&E teams consistently follow a few critical steps and thereby maximize the quality, efficiency, and consistency of monitoring and evaluation of the clinical and translational work. The checklist's impact is significant in that it fills the current gap in the practice, literature, and methodology and provides practical guidance for CTR (and other) organizations and programs striving to improve the quantity and quality of evaluation.

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### Long-term stability of cortical language sites following resective epilepsy surgery

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**BACKGROUND:** Of the ~50 million cases of epilepsy worldwide, an estimated 80% originate from cortical areas implicated in language. Although the precise language loci can vary significantly across individuals, electrical stimulation mapping for eloquent areas has become standard of care in resective surgery for