

association of medical complexity factors with self-reported medication confidence and adherence was analyzed using logistic regression analysis controlling for age, gender, ethnicity, education, and number of health conditions. **RESULTS/ANTICIPATED RESULTS:** The survey had a 60% response rate. The mean age of respondents was 72, and 42% were male. We found no significant association between number of visits and either confidence about usage (OR = 1.07, 95% CI 0.95–1.20) or medication adherence (OR = 1.01, 95% CI 0.90–1.13). We similarly found no significant association between number of providers and either confidence about usage (OR = 1.03, 95% CI 0.90–1.18) or medication adherence (OR = 1.05, 95% CI 0.93–1.20). Lower confidence about medication use was less likely among males (OR = 0.60, 95% CI 0.44–0.80), those with more education (OR = 0.29, 95% CI 0.20–0.42) or more comorbidities (OR = 0.89, 95% CI 0.82–0.96) and more likely with increasing age (OR = 1.06, 95% CI 1.04–1.08). Nonadherence was more likely among Indians (OR = 1.62, 95% CI 1.06–2.48) and those with more comorbidities (OR = 1.10, 95% CI 1.02–1.18). **DISCUSSION/SIGNIFICANCE OF IMPACT:** Having more healthcare visits or providers were not independent correlates of lower medication confidence or adherence. Seniors with less education may benefit from interventions to improve confidence about medication use. Participants with more comorbidities expressed greater confidence but admitted to lower adherence. The role of other potential contributors to nonadherence in complex patients (eg, cost and access, patient preference, competing demands) should be evaluated next.

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Adipose tissue measurements of computed tomography scan studies as a possible predictor of cancer recurrence after radical prostatectomy

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OBJECTIVES/SPECIFIC AIMS: The goal of this pilot study is to provide a reliable anatomical algorithm for the measurement of adipose tissue within the pelvic cavity as a predictor of prostate cancer aggressiveness and recurrence after radical prostatectomy. **METHODS/STUDY POPULATION:** We will conduct a retrospective analysis of men treated with radical prostatectomy between 2012 and 2016 at the VA Caribbean Health Care System. Clinical variables, pathology reports, and computed tomography will be reviewed. Pelvic and periprostatic fat (PF) will be measured to determine association between PF and cancer aggressiveness and recurrence. **RESULTS/ANTICIPATED RESULTS:** We expect a positive association between PF and cancer aggressiveness and recurrence among patients who underwent radical prostatectomy. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Measurement of subcutaneous and PF within the pelvic cavity can provide a reliable anatomical measure which can be used as a proxy measure to identify those with higher risk of recurrence and develop better prevention and treatment strategies, especially in Hispanic men.

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The impact of *Clostridium difficile* infection on disease severity in patients with inflammatory bowel disease

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OBJECTIVES/SPECIFIC AIMS: Inflammatory bowel disease (IBD) patients are at an increased risk of *Clostridium difficile* infection (CDI) but the impact of CDI on disease severity is unclear. The aim of this study was to determine the effect of CDI on long-term disease outcome in a cohort of IBD patients. **METHODS/STUDY POPULATION:** We analyzed patients enrolled in a prospective IBD natural history registry. Patients who tested positive at least once formed the CDI positive group. We generated a 2:1 propensity matched control cohort based on risk factors of CDI in the year before infection. Healthcare utilization data (emergency department use, subsequent hospitalizations, telephone encounters), medications, labs, disease activity, and quality of life metrics were temporally organized. **RESULTS/ANTICIPATED RESULTS:** A total of 198 patients (66 CDI, 132 matched controls) were included [56.6% female; 60.1% Crohn's disease (CD), 39.9% ulcerative colitis (UC)]. Groups were not significantly different in the year before infection in all metrics but in the year of infection, having CDI was significantly associated with more steroid and antibiotic exposure, elevated C-reactive protein or erythrocyte sedimentation

rate, and low vitamin D (all $p < 0.01$). Infection was associated with increased disease activity metrics (UC: $p = 0.036$, CD: $p = 0.003$), worse disease-related quality of life ($p = 0.003$), and increased healthcare utilization ($p < 0.001$). In the next year after infection those with prior CDI continued to have increased exposure to vancomycin or fidaxomicin ($p < 0.001$) and all other antibiotics ($p = 0.01$). They also continued to have more clinic visits ($p = 0.006$), telephone encounters ($p = 0.001$), and worse disease-related quality of life ($p = 0.03$), but disease activity and biomarkers of severity were not significantly different between groups. **DISCUSSION/SIGNIFICANCE OF IMPACT:** CDI infection in IBD is significantly associated with various surrogate markers of disease severity, increased healthcare utilization and poor quality of life during the year of infection. CDI patients continue to experience poor quality of life after infection with increased clinic visits and antibiotic exposure while disease activity is no longer significantly increased. These findings suggest that CDI infection may have a lasting effect on healthcare utilization beyond the acute treatment period.

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Patient preferences and attitudes regarding next-generation sequencing results: scoping review of the literature

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OBJECTIVES/SPECIFIC AIMS: Although the clinical utility of whole genome sequencing (WGS) is increasing, a gap exists between what WGS can deliver in quantity of genomic information and what results can be interpreted that patients and community members would find meaningful. Given the potential for incidental findings and variants of uncertain significance, an emphasis should be placed on understanding patient preferences towards receiving WGS results. To identify the current knowledge base on WGS preferences, we performed a scoping review. **METHODS/STUDY POPULATION:** A search on PubMed using terms "WES," "WGS," "genome sequencing," "attitudes," and "preferences" identified survey research between 2012 and 2016. Summaries of population, sample, variables, and results were tabulated. **RESULTS/ANTICIPATED RESULTS:** Of 13 studies identified, 6 surveyed community members, 6 included medical professionals, and 2 surveyed cohorts with a specific medical condition. Only 1 study used a nationally representative sample and no study focused on a medically underserved population. Patients were most interested in receiving medically actionable results, yet preferred to have access to all available data if desired. Genetics professionals are more conservative with the return of incidental and uncertain findings. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Existing surveys have limited representation of the US public. Future studies focused on medically underserved populations would provide a deeper understanding of attitudes and preferences toward WGS.

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Evaluating the association among biological, social, and nutritional status on adolescent pregnancy rates, physiology and birth outcomes using electronic health records data

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OBJECTIVES/SPECIFIC AIMS: To build a multisite deidentified database of female adolescents, aged 12–21 years (January 2011–December 2012), and their subsequent offspring through 24 months of age from electronic health records (EHRs) provided by participating Community Health. **METHODS/STUDY POPULATION:** We created a community-academic partnership that included New York City Community Health Centers ($n = 4$) and Hospitals ($n = 4$), The Rockefeller University, The Sackler Institute for Nutrition Science and Clinical Directors Network (CDN). We used the Community-Engaged Research Navigation model to establish a multisite deidentified database extracted from EHRs of female adolescents aged 12–21 years (January 2011–December 2012) and their offspring through 24 months of age. These patients received their primary care between 2011 and 2015. Clinical data were used to explore possible associations among specific measures. We focused on the preconception, prenatal, postnatal periods, including pediatric visits up to 24 months of age. **RESULTS/ANTICIPATED RESULTS:** The preliminary analysis included all female adolescents ($n = 49,292$) and a subset of pregnant adolescents with offspring data available ($n = 2917$). Patients were mostly from the Bronx; 43% of all adolescent females were overweight (22%) or obese

(21%) and showed higher systolic and diastolic blood pressure, blood glucose levels, hemoglobin A1c, total cholesterol, and triglycerides levels compared with normal-weight adolescent females ($p < 0.05$). There was a statistically significant association between the BMI status of mothers and infants' birth weight, with underweight/normal-weight mothers having more low birth weight (LBW) babies and overweight/obese mothers having more large babies. The odds of having a LBW baby was 0.61 (95% CI: 0.41, 0.89) lower in obese compared with normal-weight adolescent mothers. The risk of having a preterm birth before 37 weeks was found to be neutral in obese compared to normal-weight adolescent mothers (OR = 0.81, 95% CI: 0.53, 1.25). Preliminary associations are similar to those reported in the published literature. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This EHR database uses available measures from routine clinical care as a "rapid assay" to explore potential associations, and may be more useful to detect the presence and direction of associations than the magnitude of effects. This partnership has engaged community clinicians, laboratory and clinical investigators, and funders in study design and analysis, as demonstrated by the collaborative development and testing of hypotheses relevant to service delivery.

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Collective capacity building tool (CCBT): A unique instrument and process supporting community-campus partnerships for translation

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OBJECTIVES/SPECIFIC AIMS: (1) Provide an innovative tool used to accelerate and evaluate T3-T4 research; (2) describe the collective capacity building tool (CCBT) methodology—both programmatic and evaluative applications; and (3) share insights about the process and outcomes of community-engaged research. **METHODS/STUDY POPULATION:** Academic and community-based partners complete the assessment together at the beginning and conclusion of their Community Engagement pilot projects. Further, they are encouraged to use the tool and the associated insights/priorities that emerge as the basis for data-driven coaching with Community Research Liaisons throughout the 12-month grant cycle. **RESULTS/ANTICIPATED RESULTS:** Pre/post results with 4 cohorts of pilot grantees consistently demonstrated the most positive change in relation to 1 item: overcoming previously identified barriers to community engagement (eg, language, mistrust, scheduling conflicts). Other key findings: (1) networks of reciprocal ties expand, providing structures to support dissemination of information and interventions. (2) Partners leverage expanded networks to pursue follow-on funding and extend the scope/reach of their efforts geographically and/or with new populations. (3) Projects enhance trust in the research process by developing group processes that facilitate the respectful sharing of diverse (often alternative) viewpoints and through culturally-responsive project implementation. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The CCBT can be used at multiple points in time to help project partners achieve the deliberate integration of CBPR principles in practice and advance community-engaged translational research efforts for sustainability and scalability. The CCBT is sensitive enough to document the iterative nature of partnership development and CBPR. An example: a great deal of variability was found in how formally partners defined roles. Further, partner roles often changed as projects evolved. Still, results indicated a general trend toward achieving greater clarity in partner roles over time. Further, the tool captured set-backs due to partner turn-over and partnerships regaining momentum after new staff came on board. Results have strong face validity: more mature partnerships reported stronger community connections and previous successes to build upon. Perhaps most importantly: the tool and associated process was well-received by academic and community-based partners alike.

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The SDM learning loop model

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OBJECTIVES/SPECIFIC AIMS: (1) To propose an iterative decision-making model of care planning for CSHCN. (2) To identify targets warranting measurement in future studies of SDM in care planning for CSHCN. **METHODS/STUDY POPULATION:** Conceptual model developed by a multi-disciplinary team iteratively considering the complex relationships among diverse factors affecting care planning for CSHCN, informed by clinical and implementation science experience and a scoping literature review of medical and cognitive sciences literature addressing interpersonal decision-making,

communication, negotiation, and trust among children, their parents, and their clinicians. **RESULTS/ANTICIPATED RESULTS:** Decision-making interventions in pediatrics tend to focus narrowly on single acute decisions, providing minimal guidance for decisions related to chronic disease management over time. Few models account for the role of the child in the decision-making process, despite their ongoing development. Therefore, we propose a model of shared decision-making in the context of managing chronic illness in children that recognizes all actors and can support both the design of clinical care and research. This model—The SDM Learning Loop Model—highlights the dynamic iterative nature of exchanges between and among the clinical team and the parent-child dyad and recognizes the child as the center of each decision-making cycle. The model accounts for key practice, family, experiential, and emotional contexts influencing the decision-making encounter. In this model, change in child health status and developmental capacity resulting from a given cycle's care plan will directly influence the relationship between clinician and parent-child dyad (eg, mutual trust, attunement) and impact each party's engagement in the next round of decision-making. The relationship between experience and outcome stimulates learning. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Our proposed SDM Learning Loop Model suggests that increasing the shared nature of decision making is not only likely to optimize care planning, but creates "buy-in" that can both reinforce the impact of positive outcomes, and moderate the negative impact on relationships when the outcome is other than desired. We hypothesize that this model can guide care planning and shape research to the benefit of both clinical outcomes and clinician-family relationships. Future work should focus on the development and validation of measures to account for the experiential and emotional contexts in which such decisions are made, and the outcomes of care in this population.

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Screening for diabetes in high-risk women: Building the data infrastructure to study postpartum diabetes screening among low-income women with gestational diabetes

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OBJECTIVES/SPECIFIC AIMS: Women with GDM have a 7-fold higher risk of developing T2DM, and rates of GDM are higher among racial and ethnic minorities and women of lower socio-economic status. There are no data on postpartum diabetes screening after the first postpartum year or among women receiving care in FQHCs. We aim to address this gap in the literature by (1) defining the rates of follow-up screening for T2DM at 6–12 weeks and 1–3 years postpartum and (2) characterizing patient, provider, and healthcare system attributes that are associated with lack of follow-up screening for T2DM in a population of low-income women with GDM. **METHODS/STUDY POPULATION:** This is a retrospective cohort study of women with GDM during pregnancy receiving care in Missouri FQHCs from 2010 to 2015. Electronic health records (EHR) data from 26 FQHCs is housed in a central repository through the Missouri Primary Care Association (MPCA). This includes patient demographic, lab, and medication information as well as encounter level patient and provider data for the prenatal and postpartum period. EHR data does not include accurate delivery information, however. Pregnancies during the study time frame were identified using CPT and ICD9/10 codes. Deidentified data on individuals with a pregnancy was utilized to identify a subpopulation of "GDM candidates," using a broad definition of glucose abnormalities as follows: ICD-9/ICD-10 codes for diabetes, medications and testing supplies used for diabetes, infant birth weight ≥ 4000 g or 8 lb or 13 oz, or abnormal glucose labs [defined as fasting glucose ≥ 95 , gestational glucose screen ≥ 130 , 1 h test ≥ 130 (or ≥ 180 if 2 h test and 3 h test recorded on same day), 2 h test ≥ 155 , 3 h test ≥ 140 , A1C ≥ 6 , any glucose ≥ 130 , or any positive urine glucose]. This subpopulation was then linked to Medicaid administrative claims data [housed at the University of Missouri Office of Social and Economic Development Analysis (OSED)], providing detailed information on delivery, to further characterize patients with GDM in the time frame and provide all dates necessary to classify pregnancy and postpartum periods. **RESULTS/ANTICIPATED RESULTS:** From the de-identified pregnancy data set including 45,810 individuals, we identified 8008 "GDM candidates." EHR data were linked to Medicaid claims data for these individuals from 2010 to 2015. Utilizing the enhanced data set, we are defining a pregnancy for each individual by the delivery date in the Medicaid record and an algorithm using lab and ultrasound record dates to define gestational age at delivery. This will result in a pregnancy level data set linked with individual encrypted identifiers with each record representing 1 pregnancy and postpartum period. GDM in pregnancy will be