summit brought together almost 200 individuals representing 82 local organizations to share ideas and evoke collaboration around decreasing health disparities. Attendees learned about programs within and outside of their communities and volunteered for task forces to propel the community forward. Currently, we have members committed to further this work through Action Teams within the sectors of Physical Activity, Healthy Food Access and Family and Community Engagement. DISCUSSION/SIGNIFICANCE OF IMPACT: Convening individuals from many layers of the community helps to ensure discussions are representative of the overall community voice. It is vital to facilitate effective collaboration that includes networking, identifying assets and areas of improvement, brainstorming solutions and integrating research and best practices to improve the health of a community.

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Parenting, anxiety, and adaptive function in children with chromosome 22q11.2 deletion syndrome

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OBJECTIVES/SPECIFIC AIMS: Chromosome 22q11.2 deletion syndrome (22q) has a prevalence almost as common as Down syndrome. 22q is well known for medical complications, including congenital heart disease and immune dysfunction. However, children with 22q also have borderline cognitive abilities, are at high risk for ADHD and anxiety, and have poor independent living skills (adaptive function). Parenting is one modifiable factor that has been found in typically developing populations to promote independent functioning and protect against the development of anxiety disorders. This study investigates the associations between parenting, anxiety, and adaptive function in 22q. METHODS/STUDY POPULATION: Parent-child (ages 4–11) dyads participated in an ongoing study involving observed parenting during challenging tasks plus questionnaires of parenting, child anxiety, and child functioning. In total, 52 dyads [22q = 25; typical development (TD) = 27] have enrolled to date. Parents completed questionnaires, including the Parenting Styles and Dimensions Questionnaire (PSDQ), Spence Children's Anxiety Scale, and Adaptive Behavior Assessment System for Children (ABAS-II). PSDQ dimensions of interest included Parental Psychological Control (PPC: the management of child behavior through the manipulation of emotions, expectations, and independence), Authoritative, Authoritarian, and Permissive, and the subscales of these broad dimensions. Scores were compared using t-tests and multiple regression models were used to investigate the relationships between 1-parenting and anxiety and 2-parenting and adaptive function. RESULTS/ANTICIPATED RESULTS: Mean age was 7.8 ± 2.1 years. Full Scale IQ (TD: 112.3 vs. 22q: 82; $p < 0.001$) and ABAS-II Global Adaptive Composite (TD: 102.7 vs. 22q: 69.2; $p < 0.001$) were significantly higher in the TD group. Parents in the 22q group reported higher levels of PSDQ PPC (22q: 2.3 vs. TD: 2.1; $p = 0.06$), specifically overprotection (22q: 3.7 vs. TD: 3.3; $p = 0.04$), and lower Authoritative parenting (22q: 4.1 vs. TD: 4.4; $p = 0.03$), across the subscales. There were no differences in Authoritarian or Permissive parenting. Children with 22q had higher Spence Total Anxiety scores (22q: 62.5 vs. TD: 47.4; $p < 0.001$). Self-reported PPC and group ($R^2 = 0.3$, $F_{3,48} = 8.1$, $p < 0.001$) predicted child anxiety with a main effect of PPC ($\beta = 16$, $p = 0.02$). Group tended to moderate the association between PPC and anxiety ($\beta = -17.5$, $p < 0.10$), with PPC predicting anxiety for the 22q group ($r = 0.35$, $p < 0.09$), but not the TD group ($r = -0.08$, ns). At this time, a relationship between PPC and child ABAS-II GAC in 22q ($r = -0.14$; $p = 0.5$) is not identified. DISCUSSION/SIGNIFICANCE OF IMPACT: Children with 22q are at high risk for anxiety and poor adaptive outcomes. These results suggest that parents of children with 22q use higher levels of PPC, which is correlated with increased child anxiety. These analyses also provide support for parenting interventions to improve anxiety in children with 22q and possibly mitigate the serious mental health risk in this population.

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A novel treatment delivery of acceptance and commitment therapy for chronic pain in an integrated primary care setting

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OBJECTIVES/SPECIFIC AIMS: This study seeks to test the feasibility and effectiveness of a brief acceptance and commitment therapy (ACT) treatment for chronic pain patients in a primary care clinic METHODS/STUDY

POPULATION: Primary care patients aged 18 years and older with at least 1 pain condition for 12 weeks or more in duration will be recruited. Patients will be randomized into (a) ACT intervention or (b) control group. Participants in the ACT arm will attend 1 individual visit with an integrated behavioral health provider, followed by 3 weekly ACT classes and a booster class 2 months later. Control group will receive enhanced primary care that includes patient education handouts informed by cognitive behavioral science. Data analysis will include 1-way analysis of covariance (ANCOVA), multiple regression with bootstrapping. RESULTS/ANTICIPATED RESULTS: The overall hypothesis is that brief ACT treatment reduces physical disability, improves functioning, and reduces medication misuse in chronic pain patients when delivered by an integrated behavioral health provider in primary care. In addition, it is anticipated that improvements in patient functioning will be mediated by patient change in pain acceptance and patient engagement in value-consistent behaviors. DISCUSSION/SIGNIFICANCE OF IMPACT: This pilot study will establish preliminary data about the effectiveness of addressing chronic pain in a generalizable integrated primary care setting. Data will help support a larger trial in the future. Findings have potential to transform the way chronic pain is currently managed in primary care settings, with results that could decrease disability and improve functioning among patients suffering from chronic pain.

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What is the role of race and ethnicity in the development of thionamide-induced neutropenia?

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OBJECTIVES/SPECIFIC AIMS: Thionamides are anti-thyroid drugs (ATD) that are commonly used to treat autonomous thyrotoxicosis. Although efficacious, these medications carry a risk of neutropenia or agranulocytosis in a small but finite proportion of the patients who receive them. Some risk factors for thionamide-induced neutropenia have been identified, including body mass index (BMI) and dose, but the role of race and ethnicity in the pathogenesis of this potentially life-threatening side effect is not known. We hypothesize that there will be no effect of race or ethnicity on the change in absolute neutrophil count (ANC) following initiation of thionamide therapy among adult patients with thyrotoxicosis. METHODS/STUDY POPULATION: Data from the electronic medical record at UNM HSC were obtained using a standard database query for the years 2000–2016. Inclusion criteria were the prescription of an ATD, an ANC recorded within 30 days of initiating ATD therapy (pre-ATD), and an ANC recorded between 75 and 365 days after starting an ANC (post-ATD). Patients taking other agents known to cause neutropenia and agranulocytosis, such as clozapine, allopurinol, or chemotherapy, were excluded. Patients were assigned to racial and ethnic groups as follows: Hispanic, non-Hispanic Caucasian (NHC), native American, Black, and Asian. The post-ATD ANC was defined as the nadir ANC observed after the ATD was started. "Delta ANC" was defined as [(post-ATD ANC) − (pre-ATD ANC)]. ANOVA analysis with Bonferroni-adjusted post-hoc testing was performed to examine differences in the mean changes of ANC across ethnic groups. RESULTS/ANTICIPATED RESULTS: In total, 123 adult patients met inclusion and exclusion criteria and were included in the analysis. No significant difference was found between any of the racial groups with regard to age, sex, BMI, pre-ATD ANC, or the pre-ATD to post-ATD ANC interval. The native American group showed a significantly greater post-ATD ANC (not shown) and Delta-ANC as compared with the other groups. Delta ANC Hispanic = −1.4 ± 3.3, Caucasian = −0.6 ± 3.3, Black = −0.9 ± 4.1, Asian = −3.8 ± 4.8, native American = 3.6 ± 5.1 (all units per mm³; $p < 0.001$). DISCUSSION/SIGNIFICANCE OF IMPACT: In this cohort of New Mexicans with thyrotoxicosis, native American race was protective against thionamide-induced neutropenia.

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Relationships between medical complexity factors and medication confidence and adherence among older Singaporean adults

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OBJECTIVES/SPECIFIC AIMS: To investigate whether medical complexity (indicated by multiple providers or healthcare visits) is associated with lower levels of confidence in medication use and lower medication adherence METHODS/STUDY POPULATION: Data on socio-demographics, health encounters, health status, and health attitudes and behaviors from a nationally representative sample of 1575 older Singaporean adults were utilized. The

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.

2152

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