



Platform Session I

Sunday, October 4, 2015 from 10:45am – 12:00noon

Cohiba 6-7

Abstract 1: Safety of Stimulant Medication in Children with Attention Deficit Hyperactivity Disorder (ADHD) and Congenital Heart Disease (CHD)

Pon Trairatvorakul, MD, Jareen Meinzen-Derr, PhD, Karen J. Mason, MD, Julia S. Anixt, MD, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Purpose:Children with CHD are at high risk for ADHD. However, fears about the risk of cardiovascular side effects and sudden cardiac death limit stimulant medication use. The purpose of the study was to determine if children with CHD + ADHD treated with stimulant medication were at increased risk for death or changes in cardiac vital signs compared to those with similar heart lesions not treated with stimulants. **Methods:**A case control study with 1:3 matching was performed using electronic health record (EHR) data. Cases had CHD + ADHD treated with stimulant medication through a specialty cardiac neurodevelopmental clinic. Controls were matched to cases by CHD diagnosis code and age. Vital signs including blood pressure (BP), pulse and oxygen saturation were extracted from EHR at baseline and at a median follow up time of 24 months. Cases'pre/post stimulant ADHD symptom scores on Vanderbilt scales were obtained by manual chart audit and compared using paired analyses. Differences in vital sign measures between groups were tested using mixed models to account for the matching. **Results:**We matched 44 cases to 116 controls with mean (SD) age of 8 (4) years. Subjects were 53% male, 81% Caucasian and 52% publically insured. Stimulant medication use was not associated with cardiac death (0 cases, 1 control death) or changes in vital signs. At follow up, mean systolic BP (95% CI) was 110 (106, 114) in cases and 110 (107, 113) in controls ($p = 0.93$) and pulse was 86 (82, 91) in cases and 84 (81, 87) in controls ($p = 0.36$). There were also no significant differences between groups for diastolic BP and oxygen saturation. Median total symptom scores on Parent Vanderbilt decreased from 31 at baseline to 24 at follow up 6-12 months later ($p < 0.05$). **Conclusion:** Stimulant medication can be safely and effectively used to treat ADHD in children with CHD with appropriate follow up, monitoring and care coordination between developmental pediatricians and cardiologists.

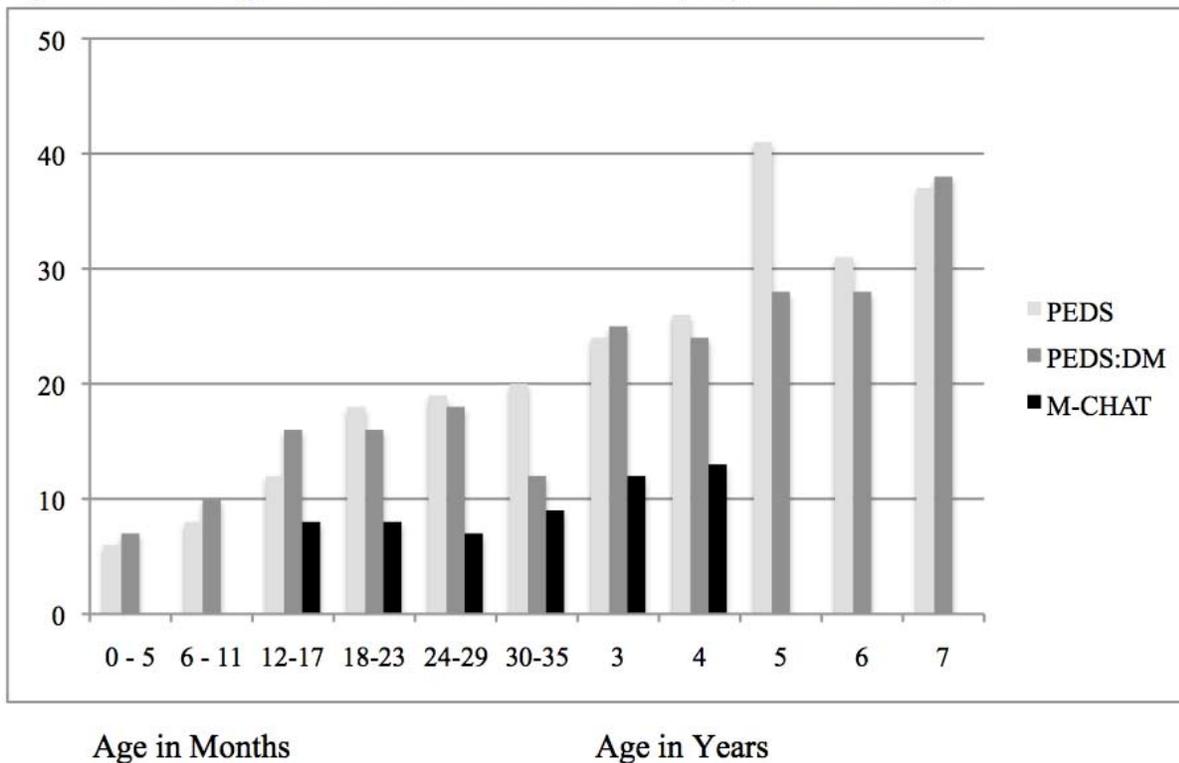
Abstract 2: Why the American Academy of Pediatrics Should Recommend Developmental-Behavioral Screening Beyond 30 Months of Age

Frances Page Glascoe, PhD, Pediatrics, Vanderbilt University, Nashville, TN

Purpose:American Academy of Pediatrics policy on early detection stipulates administration of formal screening tests at 9, 18, 24 or 30 months. Although the AAP gently exhorts general pediatricians to develop a pattern of practice and attention&that continue[s] well beyond 3 years of age, many private payers and State Medicaid Agencies do not reimburse for screening after 30 months. Should they?

Should the AAP recommend well-visit screening for older children? **Methods:**Participants were 21,354 children receiving care in 86 general pediatric and family practice clinics in 19 US States. All providers deployed the same web-based service providing validated screens for the 0-8 year age range. Per AAP recommendations, the screens focused on parents concerns, childrens milestones, plus an autism-specific measure. IRB approval was obtained for analysis of existing anonymized data. **Results:**Problematic screening results were found in more than 1 out of 6 children. Children 32 months and older were almost twice as likely to fail one or more screens than were children in the birth through 31 month age range [OR = 1.8, 95%CI(1.67-1.94), $p < .0001$]. After adjusting for SES differences, significant main effects remained for screening tests failures by age [$F(5, 21,348) = 362.541$, $p < .0001$]. **Conclusion:** Development develops and developmental-problems do too. The most common delays and deficits, such as language impairment and learning disabilities rarely manifest before 3 or more years of age. The adverse impact of psychosocial risk factors is often not visible until well after 24 months of age. Mental health and behavioral problems may not arise until children who did not receive needed early intervention begin to fail in school. Clearly, validated screening tests should be used well beyond the 30 month age range -- and preferably at every well-visit.

Figure 1. Percentage of Problematic Performance by Age and Screening Test



Abstract 3: Revision of a parent-completed social-emotional screening assessment for preschool children: Ages & Stages Questionnaires: Social-Emotional, 2nd ed.

Jane Squires, PhD, Early Intervention/Center on Human Development, University of Oregon, Eugene, Oregon

Purpose: Ages and Stages Questionnaires Social-Emotional-2nd Edition (ASQ:SE-2) is a parent-completed monitoring system focused on social-emotional and behavioral competence. A revision of the ASQ:SE had 5 objectives: 1) establish cutoff scores based on updated representative normative sample; 2) examine psychometric properties including validity, reliability, utility; 3) improve or add to item pool to address social-communication, adaptive behaviors; 4) expand age range to 1-72 months; and 5) modify scoring system. **Methods:** 16,394 ASQ:SE-2 were collected, via pencil-paper and on line. Measures included the 9 ASQ:SE age intervals, a demographic form asking about the child and family variables. Convergent measures included the Devereux Early Childhood Assessment for Infants and Toddlers, the Infant Toddler Social Emotional Assessment, and the Child Behavior Checklist 1.5-5. Internal consistency (coefficient alpha) and test-retest reliability (two identical questionnaires completed in 1-3 week interval) were measured. Screening cutoff points were calculated using ROC analyses; agreement of ASQ:SE-2 outcomes was compared with outcomes on convergent measures. **Results:** To measure internal consistency, coefficient alpha was calculated for each age interval and ranged from .71 to .90, with an overall alpha of .84. Test-retest reliability was determined by comparing the results of two questionnaires completed by parents (N = 281) at 1 to 3 week interval, and was .89; overall intraclass correlation was .91. Sensitivity ranged from 76% at 2 months to 84% at 24 months, with 78% overall sensitivity. Specificity ranged from 90% to 98%, with 86% overall specificity. Percent agreement varied from 77% to 89%. Under-referral ranged from 1.8% to 10.9% while over-referral ranged from 0.8% to 19.4%. Finally, utility data suggested the questionnaires were easy for parents to complete within an acceptable time frame. **Conclusion:** With this large convenience sample of U.S. parents and their children, the psychometric properties of the ASQ:SE-2 were studied. Study findings confirm positive outcomes supporting the validity, reliability, and utility of this parent-completed social-emotional screening tool. Future research with more diverse parent-child dyads as well as continued study of its psychometric properties are needed.

Abstract 4: Refugee Community Perspectives: A Qualitative Study Informing Standardized Developmental Screening

Abigail Kroening, MD, Pediatrics, Jessica Moore, PhD, Psychiatry, Therese Welch, PhD, Susan L. Hyman, MD, Pediatrics, University of Rochester Medical Center, Rochester, NY

Purpose: Refugee children are at high developmental risk. Standardized developmental screening is difficult and unstudied in this population. Key-informant interviews (KII) and focus groups (FG) with medical interpreters, healthcare providers, community collaborators, and refugee parents were studied to examine cultural and community-specific values and practices related to child development and disability, as well as barriers and facilitators to standardized screening. **Methods:** We conducted 19 KII and 2 FG involving 29 subjects representing Nepali, Burmese, and Somali families from the Center for Refugee Health in Rochester, NY. Subjects were identified through purposive sampling until data saturation. Interviews were recorded, coded, and analyzed using the qualitative framework technique. **Results:** We identified 21 themes in 4 major concepts: values/beliefs about development/disability, practices around development/disability, healthcare knowledge, and feedback specific to the Parents' Evaluation of Developmental Status (PEDS). Most subjects denied a word for development in their languages of origin. All noted limited cultural awareness for tracking specific

developmental milestones and a high threshold for parent concern unless speech or behavior problems were present. Physical disabilities were easily recognized but not seen as problematic. Subjects cite community resignation to disability, resulting in families bearing the burden of care. Perceived barriers to early identification of delays include limited parental education, poor healthcare knowledge, language barriers, and traditional healing practices. Facilitators include community advocates, trust in a healthcare provider, in-person interpretation, visual supports, and guidance on American parenting practices. All subjects generally supported PEDS use. **Conclusion:** Refugees have a unique perspective on child development, and acculturation appears to impact beliefs and practices for parenting, education, and disability management. Despite challenges, standardized screening was supported

Abstract 5: When Good Tools Go Bad: Real-World Autism/Developmental Screening and Quality Improvement in Primary Care

Cy B. Nadler, PhD, Lisa Pham, DO, Christina Low-Kapalu, PhD, Developmental & Behavioral Sciences, Kristi Williams, MD, Ginny Rahm, MS/MA, Pediatrics, Sarah S. Nyp, MD, Developmental & Behavioral Sciences, Children's Mercy Kansas City, Kansas City, MO

Purpose: To investigate provider adherence to AAP developmental/autism screening recommendations and published screening administration standards using a quality improvement (QI) framework in the primary care clinics of a large urban hospital. **Methods:** Electronic health records (EHRs) for 9, 18 and 24/30 month well child visits over 13 months (n = 4419) were manually coded to quantify the extent to which providers (faculty, residents, and nurse practitioners) correctly administered the M-CHAT/PEDS and referred children who screened positive. Plan-do-study-act (PDSA) cycles to improve screening practices included educational interventions, clinic process changes, and prompts in the EHR. **Results:** At baseline, parents completed the M-CHAT and PEDS at >80% of eligible visits. However, failure to correctly score and interpret the forms led to poor provider sensitivity, correctly identifying only 21.4% of positive M-CHATs and 22.5% of positive PEDS. Only 14.3% of children with positive M-CHATs and 27.5% with positive PEDS were referred. After one year and multiple PDSA cycles, M-CHAT sensitivity (23.5%) and referral (11.8%) remained poor. PEDS sensitivity (47.1%) and referral (41.2%) improved, but remained well below acceptable clinical standards. **Conclusion:** Clinics that routinely use evidence-based screening tools may unknowingly use these forms incorrectly. Quality monitoring can identify implementation problems, but first-line solutions (education and process changes) appear insufficient to rectify them. Barriers to improvement included lags in quality monitoring, competing demands on providers, and misunderstanding of the developmental surveillance/screening distinction. Efforts to improve screening at this hospital are ongoing, but the quality of screening administration is universally overlooked in clinical and research settings elsewhere. Consistent with the call to apply QI approaches in DBP (Chung et al., 2014), we propose a QI framework to augment AAP screening recommendations for clinical settings, and invite researchers who use screening tools to quantify their adherence to published administration standards.



Platform Session II

Sunday, October 4, 2015 from 10:45am – 12:00noon

Cohiba 10-11

Abstract 6: Friend to Friend : Impact on the Urban Classroom Learning Environment

Stephen S. Leff, PhD, Pediatrics, Children's Hospital of Philadelphia & Univ. of Penn, Philadelphia, PA, Tracy E. Waasdorp, PhD, Brooke S. Paskewich, PsyD, Pediatrics, The Children's Hospital of Philadelphia, Philadelphia, PA

Purpose:The Friend to Friend relational aggression prevention program is a 20 session pull-out group intervention that was designed to be effective for urban relationally aggressive African American girls (Leff et al., 2007; 2009). Results from a recent RCT demonstrated that aggressive girls in F2F decreased their levels of relational aggression and increased their knowledge of social problem solving skills as compared to similar girls randomized to an attention control intervention group (Homework, Study Skills, and Organization, HSO). Each of these findings was maintained at the one-year follow up (Leff et al., in press). Given that girls in F2F have the opportunity to co-facilitate 10 classroom sessions based upon what they have learned in the group, in the current analyses we wished to determine whether the program had an impact at the classroom level. **Methods:**There were 848 total students (50% female, 91% African American or Biracial) who provided consent that were in the classrooms with girls who were selected to be involved with F2F or HSO. Of the 848, 441 individuals were in HSO classrooms and 407 were in F2F classrooms. **Results:**Results indicate that boys and girls in classrooms randomized to F2F had improved teacher closeness $F(1,763) = 35.6, p < .001$, while boys also had decreased teacher conflict $F(1,374) = 4.83, p < .05$. Results also indicate that boys and girls in classrooms randomized to F2F showed increases in leadership $F(1,816) = 5.43, p < .05$, friendships $F(1,816) = 27.52, p < .001$, and prosocial behavior based on peer ratings $F(1,816) = 18.02, p < .001$. Further, in classes randomized to F2F, boys and girls showed decreases in rumor spreading $F(1,815) = 7.28, p < .01$. Boys in classrooms that were randomized to F2F had decreases in leaving others out $F(1,402) = 4.22, p < .05$ and physical fighting based on peer ratings $F(1,402) = 4.46, p < .05$. **Conclusion:** The paper will focus upon how F2F appears to impact not only at-risk urban aggressive girls but also the broader social learning climate within classrooms, thereby helping to promote positive social and emotional learning.

Abstract 7: Child Neurodevelopmental Functional Characteristics Mediate Apparent Effects of Neurodevelopmental Diagnosis on Child and Family Outcomes

Anton R. Miller, MD, Pediatrics, Jane Shen, MS/MA, Developmental Neurosciences & Child Health, Louise C. Mâsse, PhD, Pediatrics, University of British Columbia, Vancouver, BC, Canada

Purpose:Health conditions (diseases/disorders) and disability are distinct entities but often are used interchangeably in planning and policy-making for children with neurodevelopmental disorders/disabilities (NDD/D). This study investigated how diagnosed health condition and

neurodevelopmental functional characteristics each contribute to selected child and family health-related outcomes among children with NDD/D. **Methods:**Secondary analysis of a population-based Canadian dataset from the 2006 Participation and Activity Limitation Survey (PALS) which involved parent-reported child and family functioning for children with disabilities (weighted $n=120,700$; average age 10 ± 2.7 yr). Structural equation modeling was used to examine how diagnosis status (autism spectrum disorder (ASD)/not ASD), a range of functional characteristics, and especially impairments in speech, cognition and emotion and behavior, along with other covariates, related to child participation and family health and wellbeing (physical, psychological and economic). **Results:**Child diagnosis status was significantly associated with child and family outcomes. When child functional characteristics were added, they fully mediated the relationship between child diagnosis and child and family outcomes (standardized path coefficients (SPC), ranging from .01 to .14 in magnitude, were no longer significant). In contrast, all direct effects between child functional characteristics and child and family outcomes were significant ($p<.05$; SPC with family health/wellbeing = .73, SPC with child in school participation = .54, and SPC with child out of school participation = .25). **Conclusion:** A child's neurodevelopmental functional characteristics play a critical role in explaining the impact of a health condition on child and family health, and hence should play a more prominent role in formulating policies affecting resource allocation and services delivery for this population, despite the traditional focus on specific diagnoses.

Abstract 8: To Examine if Parent Child Interaction Therapy has Differential Effects for Children with and without Autism Spectrum Disorder

Kimberly Zlomke, PhD, Kathryn Jeter, MS/MA, Garet Edwards, MS/MA, Rachel Hoadley, MS/MA, Emily Corley, MS/MA, Psychology, University of South Alabama, Mobile, AL

Purpose:Many children diagnosed with ASD present with comorbid behavioral difficulties such as oppositionality, non-compliance, and aggression. Parent-Child Interaction Therapy (PCIT) is an established treatment for young children with disruptive behaviors. This paper describes the effectiveness of PCIT for children with ASD ($n=14$) compared to typically developing peers ($n=14$). **Methods:**Twenty eight parent-child dyads (ages 3-8; mean=4.29 year; 75% male) presenting with significant behavior problems completed PCIT. Participants were assessed at pre-treatment and post-treatment for improvements in child disruptive behavior, parenting stress, parent usage of taught skills, and child compliance. Parent-child dyads participated in an average of 18.2 sessions of PCIT (range 13-22), with no difference in the total number of sessions required to meet competency indicators between groups. **Results:**On the Eyberg Child Behavior Inventory, both groups demonstrated statistically and clinically significant decreases in parental report of disruptive behavior with large effect sizes (ASD $d=2.82$; Typ $d=2.61$). Child compliance also increased, although larger increases were seen in the typical group ($d=-2.35$) than the ASD group ($d=-.72$). Total parenting stress also demonstrated statistical significance and clinical improvement over the course of treatment for both groups. The ASD group also demonstrated significant improvements in functional communication ($d=-1.27$), adaptability ($d=-1.00$), and atypicality ($d=.90$) on the Behavior Assessment System for Children- greater so than their typically developing counterparts. **Conclusion:** PCIT is an effective treatment for disruptive behavior in ASD and effects are comparable to those seen in typically developing children. PCIT may be an important adjunctive or gateway intervention to allow for greater success in other therapy and education services for children with ASD.

Abstract 9: Parent and Child Factors Associated with Transition Planning in Individuals with Developmental-Behavioral Conditions

Charina Reyes, MD, Shanna Kralovic, DO, Developmental-Behavioral Pediatrics & Psychology, UH-Rainbow Babies & Children's Hospital, Cleveland, OH, H. Gerry Taylor, PhD, Pediatrics, Case Western Reserve University, Cleveland, OH, Steven Wexberg, MD, Thomas Frazier, PhD, Pediatrics, Cleveland Clinic, Cleveland, OH, Adam Perzynski, PhD, Center for Health Care Research and Policy, CWRU at MetroHealth, Cleveland, OH, Nancy Roizen, MD, Developmental-Behavioral Pediatrics & Psychology, UH-Rainbow Babies & Children's Hospital, Cleveland, OH

Purpose:The purpose of this study is to determine whether an individual's current functional level and presence of problem behaviors are associated with parental plans for adulthood, and to assess the participation of pediatricians in transition planning from the perspective of parents. **Methods:**This multi-site study consisted of 172 parents of children aged 10-22 years with autism, ADHD and/or other developmental-behavioral conditions completing a survey on transition to adulthood (86% response rate). The majority (55%) had a child with autism spectrum disorder. Parent-rated child functional status was measured using a six item scale which demonstrated good reliability (Cronbach's $\alpha=0.90$). **Results:**Multivariate logistic regression controlling for age, sex and problem behaviors revealed that the odds of transition planning decreased by 1.15 for each additional 1-point decrease in the child's independence with functional skills ($p=0.046$), indicating that children who need more assistance with functional skills have parents who are less likely to be planning for transition to adulthood. Lower functional status (OR 0.65, 95%CI 0.53-0.79, $p<0.01$) and presence of problem behaviors (aggression, sexual behaviors and safety issues) (OR 0.54, 95%CI 0.34-0.85, $p<0.01$) were associated with lower odds of parents thinking that their child will live independently at age 35. Among parents of children age 14+ in pediatric care, 14% (7/51) reported having a discussion about transitioning to an adult provider and 76% were unsure if their pediatrician had an office transition policy. In response to open-ended questions, parents recommended that pediatricians discuss transition issues early on and provide families with a list of adult medical providers. **Conclusion:** Despite awareness of the difficulties their children will face, less child independence with self-help skills was associated with lower odds of their parents planning for transition to adulthood. This suggests that families most in need of planning are the least prepared, and that focused resources and support for transition care are needed.

Abstract 10: Resiliency and Stress in Caregivers of Children with Autism Spectrum Disorder

Amy Newmeyer, MD, Pediatrics, Matthew Gillen, BS/BA, Eastern Virginia Medical School, Norfolk, VA, Lauren Miley, BS/BA, University of Virginia Medical School, Charlottesville, VA

Purpose:Caring for a child with special health care needs (SHCN) may expose caregivers to additional stressors. Previous studies have reported higher parenting stress in this population, with even higher levels of stress when caring for a child with autism spectrum disorder (ASD). In contrast, higher levels of resiliency may ameliorate caregiver stress. This study compared stress and resiliency between caregivers of children with ASD and other SHCN. **Methods:**Caregivers of children with SHCN ages 0 to 17 years were recruited from a developmental pediatrics clinic. Caregivers completed the Parenting Stress Index-Short form, REMAP Resiliency Scale, Perceived Stress Scale, and a demographic sheet. Data was analyzed with SPSS-22. **Results:**293 participants were recruited, 113 were caregivers for children with ASD. Mean child age was 6.36 years. Among the entire study group, logistic regression analysis supported the prediction that caregivers with higher perceived stress have lower resilience ($r = -0.601$; $p < 0.001$). A similar effect was found for parenting stress and resilience ($r = -0.547$; $p < 0.001$). When

comparing caregivers of children with ASD and other SCHN, caregivers of children with ASD had higher parenting stress as indicated by the Parenting Stress Index-Short Form total score ($-p < 0.05$), and the Difficult Child sub-score ($-p < 0.005$). A two-way ANOVA identified a significant interaction between the REMAP sub-score category question score and diagnosis. Caregivers of children with ASD scored lower ($p < 0.05$) in the REMAP Relational engagement category for 2 of 3 questions: "I feel supported by friends"; and "I attend social functions". **Conclusion:**Caregivers of children with SHCN reported higher than normal levels of perceived and parenting stress, but their resiliency levels were similar to the normative population. Caregivers of children with ASD reported higher levels of parenting stress and lower levels of relational engagement than caregivers of children with other SHCN. These findings will be utilized to develop parent support programs for children with ASD.



Poster Symposium I: DBPeds Potluck

Monday, October 5, 2015 from 9:00am – 10:30am

Discussant: Pam High, MD

Cohiba 6-7

Abstract 11: A DBPNet Study of Academic Developmental-Behavioral Pediatrics: Limited Research Time and Potentially Changing Expertise

Nancy J. Roizen, MD, Pediatrics, Case Western Reserve University School of Medicine, Cleveland, OH, Pamela High, MD, Pediatrics, Brown, Providence, RI, Ruth Stein, MD, Pediatrics, Einstein/CHAM, Bronx, NY, Marilyn C. Augustyn, MD, Department of Pediatrics, Boston University School of Medicine, Boston, MA, Ellen J. Silver, PhD, Pediatrics, Albert Einstein College of Medicine, Bronx, NY, DBPNet Steering Committee, MD, Pediatrics, Children's Hospital of Philadelphia, Philadelphia, PA

Purpose:To describe the areas of interest and expertise (I/E) of developmental-behavioral (DB) pediatricians who finished training in the last 10 years compared to those who trained more than 10 years ago prior to board certification. **Methods:**We conducted a survey of DBP/NDD faculty at 12 DB academic sites (n=50). Due to the small sample sizes, we report on trends indicated by p-values less than 0.10. **Results:**Developmental specialists were mostly DBPs (94%), female (84%), with a mean age of 50.15 years. They were more than 10 years post-fellowship (60%), assistant professors (42%), and working full time (FT) (74%). The mean 50.2 hr week for FT was mostly clinical work (23.2 hrs) and supervision (5.9 hrs) in 4.5 sessions/wk, with 8.8 hrs of research, 5.2 hrs administration, 1.5 hrs teaching and other/advocacy being the remainder. Only 5 of 50 had more than 20 hr/wk of research time. Reported (I/E) was highest in ADHD (94%) and/or ASD (94%), with 60-80% having an I/E in behavior, LD, and/or sleep. Trends for those <10 years out of fellowship were for less I/E in chronic illness (p=.063) and parenting (p=.063) and more in autism (p=.052). Types of clinics varied widely, with 74% of DBPs practicing in a General DBP Assessment Clinic followed in frequency by clinics for: ASD (36%), Toddlers (22%), School Aged (22%), ADHD (20%), Infants (18%), and Preschoolers (16%). **Conclusion:** DBPNet DB faculty are most active in clinical care and supervision. Focus of faculty I/E has shifted in the last 10 years with more specialized expertise and less interest in primary care topics. Research time is limited with few faculty having time for a strong research focus. This data should provide information to inform future program development in field.

Abstract 12: General Pediatrician-staffed Behavioral/Developmental Access Clinic Decreases Time to Evaluation of Early Childhood Developmental Disorders

Meghan Harrison, DO, Developmental Medicine, Nemours/Al duPont Hosp for Children S Kimmel Med Col, Wilmington, DE, Persephone Jones, MD, Developmental Medicine, Iman Sharif, MD, Matthew D. Di Guglielmo, MD, General Pediatrics, Nemours/Al duPont Hospital for Children, Wilmington, DE

Purpose:Earlier diagnosis and treatment of children with developmental disorders is associated with improved outcomes. Children referred for developmental assessments often wait several months for

evaluation with fellowship-trained developmental pediatricians (DP). Creation of a Behavioral/Developmental Access Clinic (BDAC) sought to decrease time from referral to initial developmental evaluation. **Methods:**In 2014, we opened the BDAC, staffed by a general pediatrician with specific training in early childhood development, a developmental psychologist, and a social worker. Parents of children under 5 referred for developmental assessment (including those waiting for their scheduled appointment with DP) were given the opportunity to schedule an appointment with the clinician in BDAC. Retrospective data collection focused on wait time for initial evaluation, referrals made, diagnoses given, and recommended follow up for patients seen in BDAC. We used two-tailed t tests to compare the mean time to initial evaluation in BDAC vs. DP. **Results:**63 children were seen in BDAC from July-December 2014. Referrals from BDAC included: physical/occupational/speech therapy (71%), psychology (35%), audiology (25%), genetics (14%), and neurology (8%). Five patients (8%) were given a new diagnosis of an autism spectrum disorder (ASD). Compared to time to DP appointment (327 days), mean time from initial referral to developmental assessment was shorter for the 45 patients who accepted earlier appointments in BDAC (159 days) and for the 18 children seen in BDAC as new referrals (10.7 days), $p < 0.001$. Of the patients seen in BDAC who had future appointments with DP, 11 (24%) canceled and 2 (0.05%) did not show. Follow up with DP was recommended for 9 (50%) of the new patient referrals evaluated in BDAC. **Conclusion:** BDAC allows for earlier developmental assessment of young children, with potential for earlier diagnosis and treatment of developmental disorders, including ASDs. Opportunity for initial evaluation in BDAC could decrease the number of patients requiring evaluation by DP, improving access to this subspecialty.

Abstract 13: Integrating Behavioral Health into Community-Based Pediatrics in the Bronx, NY

Miguelina German, PhD, Pediatrics, Montefiore Medical Center, Bronx, New York, Michelle Joaquin, MS/MA, Brittany Gurney, BS/BA, Ashley A. Jenson, MS/MA, Lauren A. Haliczzer, MS/MA, Rahil Briggs, PsyD, Pediatrics, Montefiore Medical Center, Bronx, NY

Purpose:Disparities in accessibility and stigma against behavioral health are significant concerns among health care providers working with high-risk populations. While pediatric primary care is well-established as a gatekeeper in this area, fewer than 20% of youth in need of services are referred from pediatrics to behavioral health. While the feasibility of adult integrated behavioral health programs has been established in the literature, there is less evidence of the feasibility of large-scale, pediatric integrated behavioral health programs. **Methods:**The current study collected feasibility data on a pediatric Behavioral Health Integration Program (BHIP) at Montefiore Medical Center in the Bronx, NY. BHIP integrated 7 psychologists and 4 psychiatrists across 8 primary care sites that serve 50,000 youth with the goals of providing screening, assessment, treatment, consultation, and psychiatric medication management. **Results:**In the first 6 months of the BHIP program (September 2014-February 2015), primary care providers conducted 4853 well child visits during which a behavioral health screening tool, the Pediatric Symptom Checklist-17, was administered to help identify patients with externalizing, internalizing or attention problems. BHIP providers received 1187 referrals representing a 24.5% referral rate. The majority (42%) of referred children were young (i.e., 6-9 years), had Medicaid insurance (65%), and identified as Hispanic (56%). The most frequent PCP referral reasons were problems with attention (24.6%), behavior (17.5%), depression (12.6%), and adjustment (12%). Moreover, of those patients referred, 59.2% attended at least one behavioral health session, which exceeds national rates of follow-up to mental health services (approximately 20%). **Conclusion:** These statistics provide initial evidence of the feasibility of an integrated model, which not only supports identification of children in need of mental health services, but also creates the opportunity for the provision of those services. Additional feasibility data will also be presented.

Abstract 14: Perceived Mentoring Practices in Developmental-Behavioral Pediatrics Fellowship Programs

Charina Reyes, MD, Elizabeth Diekroger, MD, Katherine Myers, DO, Shanna Kralovic, DO, Nancy Roizen, MD, Developmental-Behavioral Pediatrics & Psychology, UH-Rainbow Babies & Children's Hospital, Cleveland, OH

Purpose: Junior physicians report mentorship to be beneficial and describe mentoring relationships as integral to their career development and success. Despite this, current evidence suggests that it continues to be under-utilized although there is substantial interest from trainees. The purpose of this study is to describe the mentoring practices in developmental-behavioral pediatric (DBP) fellowship programs and identify mentoring needs of DBP fellows and recent graduates. **Methods:** Developmental-behavioral pediatric fellows and recent graduates who were less than 5 years out of training from a US-based DBP fellowship program were contacted through their program directors from January to April 2015 to complete a survey on their mentoring experiences in their fellowship training and early career. **Results:** A total of 112 respondents completed the survey (response rate=45%), including 58 current DBP fellows and 54 recent graduates. Only 52% of respondents reported having a formal faculty mentor in their fellowship training. Thirty-two percent of those with a formal faculty mentor reported they met weekly with their mentor, while 34% met monthly and 28% met quarterly. Among recent graduates, 55% reported that they do not currently have a mentor, although majority (83%) without a current mentor expressed that they would like to have a mentor at this time in their career. The areas most lacking in mentoring in DBP fellowship training were career development (34%) and research (29%). **Conclusion:** Results suggest a need for improved mentoring practices in DBP fellowship programs, particularly in the areas of career development and research. Results also suggest that there is a significant need for mentorship among recent graduates. Findings from this study can be utilized for program improvement in mentoring for DBP fellows and recent graduates.

Abstract 15: Trends in Early Intervention following a community-based approach to implementation of Universal Developmental Screening

Diane E. Liebe, MD, Emily McPhee, BS/BA, Developmental and Behavioral Pediatrics, Children's Village, Yakima, WA

Purpose: Universal Developmental Screening (UDS) has been shown to lead to earlier identification of children with developmental and behavioral needs. The American Academy of Pediatrics (AAP) recommends administration of a standardized developmental screen at 9, 18, and 24-30 months. This study examined the impact of a community-based approach towards training medical providers and early learning centers (ELC) in UDS, specifically using the Ages and Stages Questionnaire (ASQ), on the local Early Intervention (EI) program. **Methods:** Beginning in 2010, a Developmental and Behavioral Pediatrician and UDS Coordinator began training local primary care providers and assisting them with implementation of UDS. Local Early Learning Centers (ELC) were trained in UDS as well by the UDS Coordinator and community partners. A total of 9 medical practices, including 48 medical providers, and 7 ELCs were trained. 8 of the medical practices and all of the ELCs went on to implement UDS by the end of 2013. The county in which this program was implemented has a single point of entry into EI services, residing with the local Neurodevelopmental Center. A retrospective chart review was conducted for referrals made into EI for the months of January to June in 2010, in comparison to January to June 2014. Numbers of referrals, type of referent, numbers of developmental screens, numbers of EI evaluations

completed, and eligibility rates were examined. **Results:** EI referrals increased 9.9% from 2010 to 2014. The percentage of EI referrals from medical providers increased from 36% to 61% of total referrals and referrals from ELCs increased from 5% to 8%. Eligibility rates for children referred into EI increased from 71% in 2010 to 88% in 2014, which corresponded to an increase in average number of children in EI of 38.6% between 2010 and 2014. **Conclusion:** This study confirms the impact that UDS has on referral trends into EI. Overall referral numbers into EI increased with a higher percentage coming from medical providers/ELCs trained in UDS. In addition EI eligibility rates increased in those referred, indicating that referrals are more accurate, with providers referring those of concern and monitoring strategically those at risk. Ultimately training community providers in UDS promotes earlier identification and entrance into services for children with developmental and behavioral concerns.

Poster Session 1

Sunday, October 5, 2015 from 6:00 pm – 7:00 pm

Cohiba 6-7

Abstract 16

Sluggish Cognitive Tempo is Associated with Suicide Risk in Psychiatrically Hospitalized Children

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Purpose: Sluggish cognitive tempo (SCT) is characterized by a range of symptoms including excessive daydreaming, confusion, lethargy, and drowsiness (Becker, 2013). Numerous studies conducted with children and adolescents show that SCT symptoms are distinct from depression and other mental health symptoms. As such, research has begun to evaluate whether SCT is uniquely associated with children's adjustment and functional impairment. One important outcome that has not been examined in SCT research to date is suicide risk. Suicidal behaviors are a leading cause of death among youth worldwide (Nock et al., 2013). Although numerous risk factors for suicide have been identified, depressive symptoms are strongly linked to suicide risk (Fite et al., 2011; Hetrick et al., 2012). Since SCT is associated with depressive symptoms, as well as social withdrawal, lowered self-esteem, and emotion dysregulation (Becker et al., 2015; Flannery et al., 2014), it is plausible to hypothesize that SCT symptoms may be associated with suicidal risk, even when controlling for depressive symptoms. **Methods:** Participants were 105 children (ages 8-12; 72% male) admitted to a child psychiatric inpatient unit. Parents completed the DSM-based Affective Problems subscale and SCT items of the Child Behavior Checklist (Achenbach, 2001). Children completed the Child Depression Inventory-2 (Kovacs, 2011) and Risk of Suicide Questionnaire (Horowitz et al., 2001). **Results:** A hierarchical regression analysis was conducted, with both parent- and child-reported depressive symptom entered at Step 1 and SCT entered at Step 2. As expected, both parent- and child-rated depression were significantly associated with increased suicide risk at Step 1 ($p < .05$). When SCT was added to the model, child-rated depression remained significantly associated with suicide risk ($p < .001$). However, when SCT was added to the model in Step 2, parent-rated depression was no longer associated with suicide risk and SCT was significantly associated with increased suicide risk ($p = .04$). **Conclusion:** This is the first study to evaluate SCT in relation to children's suicide risk. Findings demonstrate that assessing SCT may be important in order to identify children at risk for suicidal ideation and behaviors.

Abstract 17

Developing Skills for Developmental Disabilities; evaluation of a new educational intervention for pre-clinical medical students.

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Purpose: Medical trainees in the USA and Canada report little formal training in cognitive disabilities (Jurczyk & Kelly, 2009; Burge et al., 2008). This may impact community doctors ability to recognize developmental disabilities (DD) and organize referrals. Many medical schools have implemented educational interventions to improve disability knowledge. To our knowledge, none are specific to childhood DD. We created a module to give medical students practical exposure to DD. Our objective was to improve student confidence in interacting with children with disability. To determine efficacy, students completed a confidence survey before and after the module. **Methods:** DSDD is a 12 hour module comprised of 6 hours each of didactic and clinic sessions. Pre-clinical medical students (years 1 and 2) enroll on a voluntary basis. Didactic sessions included normal and abnormal development, behavioral regulation strategies, and common disability aids. Clinical placement was in a developmental intervention program. Students worked with children and families affected by DD. A confidence survey consisting of 10 Likert-scale questions was administered at start and end of the module. Scores were compared pre and post intervention. Data was analyzed using PRISM software. **Results:** We had a 91% completion rate (20 out of 22 students); all 22 gave consent for data analysis. A statistically significant ($p < 0.05$) increase in self-reported scores of confidence was seen in 9 of 10 survey questions. The group average of all 10 questions showed an increase in confidence scores ($p < 0.0001$). **Conclusion:** DSDD is an educational module designed to improve medical student's confidence about DD. Comparison of self reported scores pre and post intervention showed improved

confidence after completion of DSDD. Our preliminary results suggest DSDD is an effective tool for pre-clinical medical students. Limitations of this study are lack of control group, and lack of long-term follow-up to determine impact on clinical competence. A future focus will be to determine how DSDD translates to early recognition of DD.

Abstract 18

Receipt of Early Intervention and Therapeutic Services Prior to Autism Diagnostic Evaluations in Children Referred to a Regional Autism Clinic

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Purpose:The estimated lifetime cost to care for individuals in the US with autism spectrum disorder (ASD) is \$35 billion or \$3.2 million per person. However, when early interventions are implemented, studies have shown potential savings of up to \$208,500 per child across 18 years of education. Increasing recognition of ASD behaviors by families and primary care providers has led to long wait lists at tertiary ASD diagnostic clinics and delays in formal ASD diagnoses. Whether such wait lists delay referral to early interventions has not been previously investigated. Our purpose was to determine the prevalence of receipt of early intervention and therapeutic services prior to diagnostic ASD evaluation. **Methods:**The electronic medical records of all children 5 years of age and under evaluated at a regional ASD clinic between September 2012 and June 2014 were reviewed. Information regarding type of services, clinical diagnoses, and demographic information was abstracted for each patient. **Results:**561 children (mean age = 44 months [SD 10 months]; 80% [N=450] male; 20% [N=111] female) completed a diagnostic ASD evaluation. Of these children, 498 (89%) were already receiving early intervention services. Receipt of services did not vary based on race, ethnicity, insurance type, or primary language. Children who were already receiving services were more likely to receive an ASD diagnosis (67% [N=333]) than those not receiving services (43% [N=27]; $p = .0002$). **Conclusion:** Despite concerns that long wait lists for diagnostic ASD evaluations may delay initiation of critical early interventions, our data indicate that a majority of children are receiving early intervention services prior to their diagnostic ASD evaluations, particularly if an ASD diagnosis is confirmed. This may be attributable to increased awareness among primary care providers and families of the importance of early interventions. Further investigation into access to more intensive and costly interventions (such as Applied Behavioral Analysis) once an ASD diagnosis is established is warranted.

Abstract 19

Sit Down and Play: A Primary Care Intervention To Enhance Positive Parenting Practices In Low-Income Children

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Purpose:There are significant disparities between parenting practices that promote early childhood development among economically advantaged and disadvantaged parents. The primary care office offers an ideal setting to promote positive parenting behaviors. How to more efficiently leverage the pediatric primary care office to provide a practical, effective, and sustainable intervention to support early child development in low-income families remains a challenge. Utilizing the most effective components of parenting programs identified by the Centers for Disease Control, we designed Sit Down and Play (SDP) a brief, low-cost primary care intervention to facilitate positive parenting behaviors through take-home play activities. **Methods:**A prospective 1-month study was conducted in an urban hospital-based clinic. SDP was administered to 30 caregivers of 6-12 month old children while waiting for their well-child appointment in the waiting room. Parenting practices related to child development (STIMQ PIDA, PVR) were measured and their changes were analyzed using paired t-test and linear mixed effects models. Caregivers completed baseline and 4-week follow-up self-report surveys. Open-ended interview questions regarding acceptability and usefulness of SDP were administered and analyzed using content analysis. **Results:**The majority of caregivers were mothers (90%), received Medicaid (87%) and were non-white (97%). There were significant increases in parent reports of practices related to child development ($p < 0.0001$), in particular among families who received Medicaid ($p < 0.0001$), reported lower incomes (i.e. $< \$25,000$, $p < 0.0001$), and received a high-school education or less ($p < 0.004$). Three main themes emerged from the interview data that demonstrate the impact of the intervention: noticing a change, showing parents what they were missing, and reinforcing existing positive behaviors. **Conclusion:** This preliminary study suggests that SDP is a feasible and acceptable primary care intervention to enhance parenting practices that promote child development for at-risk families. Further studies are needed to determine the effectiveness of SDP on parenting behaviors and developmental outcomes.

Abstract 20

Effects of Race and Ethnicity on Parent-Reported Developmental Regression in Children with Autism Spectrum Disorder

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Purpose: According to parent report, ~25-33% of children with Autism Spectrum Disorder (ASD) experience developmental regression. Information about the effects of race and ethnicity on the prevalence of regression in children with ASD is limited. Our objective was to determine the effects of race and ethnicity on parent-reported developmental regression in children with ASD in the Simons Simplex Collection (SSC) database. **Methods:** Data were analyzed for children with ASD in the SSC (N=2695; mean age at study participation =9.0 years). Regression status was ascertained via the Autism Diagnostic Interview-Revised (ADI-R) and operationalized for this study as any loss of language and/or social engagement at or before 36 months of age. Logistic regression was used to explore possible associations with regression by race/ethnicity, maternal education, annual household income, and age at first concern. **Results:** The prevalence of developmental regression was 28% across the entire sample, 26% for Non-Hispanic White participants, 42% for Non-Hispanic Black participants, and 37% for Hispanic participants ($p < 0.001$). In unadjusted analyses, developmental regression was associated with race/ethnicity ($p < 0.001$), age at first concern ($p < 0.001$), and maternal education ($p = 0.013$), but not annual household income ($p = 0.818$). When controlling for age at first concern and maternal education, race/ethnicity was significantly associated with developmental regression ($p = 0.0002$). Non-Hispanic Black children were twice as likely to experience regression as Non-Hispanic White children (95% CI 1.3-3.1; $p = 0.002$). Hispanic children were 1.6 times more likely to experience regression than Non-Hispanic White children (95% CI 1.2-2.1; $p = 0.001$). **Conclusion:** In the SSC sample, Non-Hispanic Black and Hispanic children with ASD were at increased risk of parent-reported developmental regression compared to Non-Hispanic White children, when controlling for maternal education and age at first concern. This finding is similar to what we previously reported in preschool-age children with ASD in the Autism Treatment Network (ATN) database. Further studies are needed to evaluate whether these differences in race/ethnicity among children with ASD and regression are related to cultural differences and/or genetic differences possibly resulting in different phenotypes of ASD.

Abstract 21

Caregiver Needs in Fetal Alcohol Spectrum Disorder

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Purpose: We explored the needs and stress of caregivers supporting individuals with FASD across the age spectrum, as well as the impact of other demographic variables (age and gender of child, caregiver type, length of time in care, income, location, etc). We also examined whether caregiver needs were associated with caregiver stress. **Methods:** Canadian caregivers ($n = 125$) of individuals with FASD (aged 0-18+) completed an online survey. The survey was open to any caregiver residing in Canada caring for an individual with FASD. The survey included basic demographic questions, a modified Family Caregiver Survey (FCS) measuring needs, concerns, and supports, and the Perceived Stress Scale (PSS). **Results:** Descriptive data revealed that caregivers reported a wide range of needs and concerns, and high levels of stress. There was an overall effect of age group on caregiver well-being, $F(2, 117) = 10.32$, $p < .001$, and across many of the well-being subtests, concerns tended to be higher among caregivers with adolescents and adults, compared to those with children. Foster parents reported fewer well-being concerns than biological/kinship, and adoptive parents $F(3, 121) = 3.34$, $p < .05$. Caregivers who cared for the individual with FASD for longer periods of time reporting more well-being concerns and less satisfaction with the supports they were receiving, $ps < .05$. There were no significant effects of reported income on the well-being and support sub-scales of the Family Caregiver Survey, $ps > .13$, however, caregivers with the lowest income levels reported significantly higher levels of stress than those with higher incomes, $F(2, 101) = 4.15$, $p = .02$. Higher reported stress was highly correlated with more needs/concerns (rs ranged from .22 to .60). Finally, caregivers reported varying degrees of satisfaction with the levels of support they were receiving. **Conclusion:** Caregivers of individuals with FASD have a significant amount of needs, and experience high levels of stress. These findings have important implications for policy/practice regarding supports and services available to caregivers of individuals with FASD.

Abstract 22

Development and Initial Testing of the Parent Beliefs about Early Childhood Social-Emotional Development Instrument

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Purpose:The goal of the current study was to develop and test an instrument to measure parent beliefs related to social-emotional development in early childhood. There is no existing instrument to measure this important variable. **Methods:**From the literature, the authors defined the attributes of positive parenting to include warmth, lack of hostility, provision of a safe and stimulating environment, encouraging exploration, discipline, and avoiding spoiling. Based on the Theory of Planned Behavior (TPB), 84 items were created that addressed each component. Mothers (n=200) were recruited from the waiting room of two academic primary care pediatric offices in the southern U.S. **Results:**Data support our initial supposition of 5 distinct factors based upon the TPB. The 5 factors account for 65.5% of the total variance and are represented by 47 manifest variables. The total scale had moderate interrater reliability (Cohens kappa = 0.718), high intrarater reliability (intraclass correlation coefficient = 0.826), and good internal consistency (Cronbachs alpha= 0.692). The internal consistency of each subscale varied (Cronbachs alpha = 0.612 for normative beliefs, 0.648 for attitudes, 0.696 for intentions, 0.883 for self-efficacy, and 0.926 for controllability). **Conclusion:**The Parent Beliefs about Early Childhood Social-Emotional Development Instrument demonstrates strong initial psychometric properties and is ready for further testing. With accurate descriptive data about parent beliefs, appropriate interventions can be developed. The study is limited by consideration of parental beliefs in mothers only and in a limited geographical area. Further evaluations should include a more diverse sample.

Abstract 23

Parental Concern About ADHD in their Premature Infant

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Purpose:Prematurity has been identified as a risk factor for ADHD. Very preterm (VP)infants are 2-3 times more likely to develop ADHD than the full term population and extremely preterm (EP)infants to be as much as 4 times more likely to develop ADHD. This risk decreases as gestational age (GA) increases. The purpose of our study is to assess parental concern about their premature infant developing ADHD and to identify association between GA category (EP, VP, Moderate or Late[MLP] preterm) and parent concern about ADHD. **Methods:**A questionnaire was administered to parents of premature infants in NICU Follow-up Clinic. The questionnaire asked parents to rate their degree of concern about their premature infant developing ADHD on a 5-point Likert scale. Results were paired to the infants GA category from a chart review. The prevalence of concern about ADHD was compared across GA category using a Chi-Square Test of Independence. **Results:**Of 60 infants (55% male), 27% were EP (d 28 weeks), 40% were VP (28-31 weeks), and 33% were MLP (32-36 weeks). Of all parents, 68% were not concerned that their baby would have ADHD. There was not a significant difference in the percentage of parents who were concerned about ADHD between EP infants (40%), VP infants (25%), and MLP infants (35%).**Conclusion:** Our results suggest that parents of premature infants are underinformed about the risk and association between ADHD and prematurity. Contrary to expectations, parents of EP infants were not significantly more concerned compared to parents of MLP infants. Pediatricians need to inform parents of the prematurity-associated risk of ADHD in order to facilitate the acquisition of appropriate educational and therapeutic services.

Abstract 24

Parental Perception of Risk Associated with Prematurity

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Purpose:Premature infants (PI) are at higher risk for adverse medical/developmental outcomes (AMDO), with AMDO increasing with degree of prematurity. Studies show that parents of PI worry about AMDO; yet, little attention has focused on the extent and appropriateness of parental concern (PC) related to gestation-related risk. The purpose of our study was to examine the association between true risk level for AMDO and degree of PC and to determine if differences exist between Extremely Preterm (EP, d 28 weeks), Very Preterm (VP, 28-31 weeks), and Moderate/Late Preterm(MLP, 32-36 weeks) PI **Methods:**Parents of PI in a NICU Clinic rated their degree of PC about 11 specific AMDO associated with prematurity on a 5-point Likert scale. PC for each of the 11 AMDO were designated as supported or unsupported based on each infant's diagnoses at NICU discharge (e.g., if a child was diagnosed with chronic lung disease, PC was supported for asthma, but unsupported for liver damage.) Distribution of parental under-concern

(UC: no PC, but risk was supported), appropriate concern (AC), and over-concern (OC: PC but risk was unsupported) were compared across Gestational Age (GA) categories using a Chi-Square Test of Independence. **Results:** Sample consisted of 60 PI (55% male); 27% EP 40% VP, & 33% MLP. The 3 GA groups didn't differ in prevalence of UC (EP=28%, VP=24%, MLP=20%), OC (EP=22%, VP=18%, MLP=29%), or AC (EP=50%, VP=59%, MLP=51%). Figure 1 depicts the percentage of parents with inappropriate levels of concern for the 11 specific risks. There was no significant difference in the overall % of appropriate concerns (EP = 50%, VP = 59%, MLP = 51%) vs. the % of inappropriate concerns (EP = 50%, VP = 42%, MLP = 49%) between the 3GA categories. Furthermore, there was no significant difference in the overall prevalence of under-concerns (EP = 28%, VP = 24%, MLP = 20%) and over-concerns (EP = 22%, VP = 18%, MLP = 29%) across GA categories. **Conclusion:** Though MLP infants are at lower risk for AMDO compared to EP and VP, parents of MLP infants are as likely to have inappropriate levels of PC. All parents, regardless of their infant's GA, had misconceptions about their child's risks. Whereas a large percentage of parents were UC about risks for feeding problems and asthma, many were OC about adverse developmental outcomes. When discussing AMDO risks, it's imperative to address both pertinent positive and negative issues.

Abstract 25

Raising Wired Readers: Parental Awareness of Electronic Reading Alternatives for Children with ADHD

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Purpose: Electronic reading alternatives have been shown to have many benefits for children with learning disabilities, including raising attitudes toward reading for children with ADHD. While electronic reading alternatives have been introduced in many classrooms it is unknown whether these alternatives are being utilized in the homes of children with ADHD. This study sought to investigate parent and child reading habits, as well as to assess parent awareness of the benefits and availability of electronic reading alternatives for children with ADHD. **Methods:** 40 parents/legal guardians of children previously diagnosed with ADHD completed an anonymous questionnaire about their family's reading habits and usage of electronic reading alternatives after being given a short demonstration of audiobooks and e-books at their doctors office. **Results:** 56% of respondents indicated their child's reading level as being at or below average, and 49% believed that their child's knowledge of their reading level impacted their self esteem. 49% of caregivers believed e-books would help their child with their self-esteem regarding reading, and 41% stated that audiobooks could be helpful. Despite these responses, paper books were found to be more heavily utilized than both e-books and audiobooks combined. (77% paper books compared to 37% for e-books, and 12% for audiobooks.) In addition, 77% of respondents indicated checking out paper books from their local library, while only 12% indicated checking out e-books or audiobooks from their local library. **Conclusion:** Although many parents reported beliefs that electronic reading alternatives would be beneficial for their child with ADHD, very few cited the usage of such devices. These findings are significant considering the large emphasis schools and educators place on strong reading skills, and current research suggesting the great impact electronic reading alternatives can have on children with ADHD. More emphasis needs to be placed on reading alternatives as an additional resource for children with ADHD in order to improve not only academic reading skills but self esteem. This study contributes to literature discussing technology as a means of education as well as studies concerning the self-esteem of children with learning disabilities.

Abstract 26

Adolescent Connectedness with Parents, School and Community Promotes Resilience among Homeless Youth

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Purpose: The purpose of this study is to examine the association between homelessness and internal assets, a set of competencies, skills, and self-perceptions that promote healthy youth development, and whether this association is moderated by adolescent connectedness with parents, school and community. **Methods:** Data on 79,339 students in grades 9 and 11 were obtained from the 2013 Minnesota Student Survey. Multiple linear regression was used to investigate whether living in a shelter in the past 12 months affected internal assets, a mean score of 14 developmental items. We tested whether this association was moderated by (i) adolescent-parent connectedness, a binary variable of high versus low levels, (ii) adolescent-school connectedness, a mean score of student response to 6 items and (iii) adolescent-community connectedness, a mean score of days per week of involvement in community activities. **Results:** Among the respondents, 4 percent (N=3,627) reported living in a shelter in the last 12 months. The internal assets score for the overall sample ranged from 1 to 4 (mean=3.0, S.D. =0.58). After adjusting for race, gender, grade, school location, free lunch and family structure, living in a shelter was associated with a reduction in internal assets by 0.28 units. This association was strongly modified by levels of parent connectedness (P-value <0.001), school connectedness (P-value <0.01) and community connectedness (P-value <0.01). The decline in internal assets of students who lived in a shelter and had high

parent connectedness was half that experienced by students who lived in a shelter and had low parent connectedness. Increased mean community activity involvement from 0 to 5 days was associated with a 4-percentile point increase in internal assets score. A unit increase in school connection was associated with a 10-percentile point increase in internal assets score. **Conclusion:** Living in a shelter can have a negative effect on healthy youth development. Strong connections with a parent, school or community can reduce the risk significantly, playing an influential role in promoting healthy development among homeless youth.

Abstract 27

Evaluation of the PROMIS Pediatric Psychological Stress Experiences Measure in Children with Autism Spectrum Disorder: A DBPNet Study

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Purpose: Psychological stress predisposes children to developing physical and mental disorders. Underlying impairment in social interaction and communication alters experiences of psychological stress in those with Autism Spectrum Disorder (ASD). Currently there is no gold standard measure of psychological stress in children with ASD. The objective of this study was to validate the PROMIS measure of children's psychological stress as a potential measure of parent report in 5-12 year old children with ASD, and test the hypotheses that higher levels of ASD-specific symptom severity, parenting stress, and parental depression are associated with higher levels of psychological stress. **Methods:** 121 children with an ASD diagnosis confirmed by Autism Diagnostic Observation Schedule or Childhood Autism Rating Scale were identified at 3 academic medical centers. Parents completed data collection via computer including demographics, the PROMIS measure, the Social Responsiveness Scale 2nd Ed., Parenting Stress Index 4th Ed. Short Form, and PROMIS adult measure of depression. The PROMIS measures provide T-scores that are normed on the US population of typically developing children (mean=50±10). **Results:** Subjects: mean age 8.0 years (range 5-12), 87% male. Psychological stress T-scores were normally distributed (mean 58.8, median 59.4, SD 8.0, 95% CI [57.4,60.2]); children with ASD scored almost 1 SD higher than typically developing children. One way ANOVA indicated that children with moderate to severe ASD symptoms on the SRS-2 had higher psychological stress T-scores than children with lower SRS-2 scores, 60.8±7.1 vs. 51.3±6.8 ($p < .0001$). Higher levels of parenting stress ($r = .62$) and parental depression ($r = .46$) were positively correlated with higher child stress ($p < .0001$). **Conclusion:** The PROMIS psychological stress measure performed as expected among children with ASD. Scores were elevated compared with typically developing children and correlated as hypothesized with other measures. These findings support its validity and utility as a parent report measure of psychological stress in children with ASD.

Abstract 28

Are Privately Insured and Medicaid Referrals Different? A DBPNet Study

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Purpose: Children on Medicaid generally have less access to care and worse overall health than privately insured children, but it is unknown how this affects their presentation for evaluation at developmental behavioral (DB) sites. **Methods:** DB pediatricians at 12 DB academic sites each recorded anonymous data on 15 consecutive new patient visits. We compared those on Medicaid to those who were privately insured. **Results:** Of 784 children, 309 had private and 393 Medicaid insurance only. Children on Medicaid tended to be slightly older (5.8 v 5.3 yrs; $p = .07$), and were significantly less likely to be white (30 v 63%) or Asian (4 v 14%) and more likely to be Black (27 v 8%) or Hispanic (36 v 12%) ($p < .001$). Their parents were significantly less likely to go beyond high school graduation (43 v 92%) and to speak English (89 v 97%) and more likely to speak Spanish (28 v 5%) (all $p < .001$). Referral patterns were similar, except for self-referral, which occurred more among privately insured (21 v 12%; $p < .001$). At the time of referral, they averaged 3 concerns of a list of 24 common concerns (private 2.9 v Medicaid 3.1; $p = .06$) and these were generally similar between the two groups with speech and language delays, autism spectrum disorder, and attention deficit hyperactivity disorder, being most frequent (each ~40%). However, those on Medicaid presented more often with speech and language delays (45.8 v 39.2%; $p < .05$), cognitive impairment (29.5 v 19.7%; $p = .002$), and other behavior problems (14.4 v 7.4%; $p = .004$) than privately insured children, while privately insured children were more likely to present with concerns about anxiety/depression/mood disorders (12.6 v 7.4%; $p = .01$) than those on Medicaid. **Conclusion:** These data suggest that all patients referred to DB pediatricians present with multiple complex concerns and that patients on Medicaid have somewhat more complex

problems at the time of referral.

Abstract 29

A Qualitative Analysis of the Experiences of Minority Parents of Children with Autism Spectrum Disorder

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Purpose: Although the prevalence of autism spectrum disorder (ASD) is invariant across racial and ethnic groups, research suggests the largest increase in the diagnosis within the U.S. is among Hispanic and Black children. Culturally diverse families often present specific challenges for practitioners in providing care to families of children with ASD. Cultural variables affect how parents think, behave, and interact with others—including the educational system and medical community and influence the families' adaptation to the diagnosis of ASD. The perception of a child's developmental milestones, social behavior, and communication/language may be viewed differently across families from diverse backgrounds. This is an important point of difference, as parental perceptions and reports of such abilities are critical to the early and accurate diagnosis of ASD. **Methods:** The current study involved the qualitative analysis of interviews with six culturally diverse families of children with ASD. A purposeful sample of minority parents (5 African American, 1 Hispanic) of children with ASD were recruited. A semi-structured interview guide, developed out of the Roy Adaptation Model with a focus on communication and adaptation, was followed. **Results:** A number of themes were identified from the data, including spiritual support, stress, family teamwork, coping strategies, culture, resources, and future. Specific embedded categories within each theme will be presented and discussed within the context of working with culturally diverse families. The identified themes demonstrated parent efforts to adapt to the difficulties of dealing with the stresses related to caring for children with ASD. **Conclusion:** This study suggests that a family's culture can affect the communication efforts among family members, within their community, and to providers. Healthcare providers and researchers need to understand the cultures of the children with ASD and their families with whom they are working.

Abstract 30

Use of Developmental Screening Tool in Screening and Prioritizing Referrals for Autism Spectrum Disorder

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Purpose: AAP Policy Statement on Developmental Screening recommends screening for developmental problems and autism spectrum disorders (ASD) at 18 and 24-30 months of age. Personal Social and Communications skills are frequently delayed with ASD. Objective to test the association of Screening Test for Autism in Toddlers (STAT), a standardized diagnostic tool for ASD, with the particular domains of Ages and Stages Questionnaire 3rd Edition (ASQ3), an age-specific developmental screen. **Methods:** Children 18-42 months old were referred to an early diagnostic clinic for evaluation of concerns based on a failed MCHAT. Children had developmental screening with ASQ3 and diagnostic testing with the STAT. Descriptive statistics and Fisher's Exact test were performed with SAS 9.3. **Results:** Of children referred for a failed MCHAT (n=133), 35.5% were diagnosed with ASD and 79.6% with particular developmental delay. 20.3% passed both the ASQ3 and the STAT; 38.4% failed both ASQ3 and STAT. 36.8% failed the ASQ3 but passed the STAT. Only 4.5% of children who failed STAT passed the ASQ3. Among children who passed both the ASQ3 and the STAT (no diagnosis of ASD), the majority had disruptive behaviors and sleep problems. There was no significant relationship between a failed STAT and the gross motor, fine motor, or problem-solving domains of the ASQ3. Failing the Communication (75.9%) and Personal Social (39.1%) domains of the ASQ3 were significantly associated with failing the STAT. In particular, failed Personal Social Domain had PPV=69.2%, NPV=74.1%; while failed Communication: PPV=48.5%, NPV=76.5%. **Conclusion:** A failed MCHAT identifies children with ASD and non-autism spectrum developmental disorders. Use of a pediatric developmental screening tool (ASQ3) after failed MCHAT allows for further identification of children at risk for ASD by pediatric primary care providers. Failed Personal Social Domain on ASQ3 in toddlers that already failed MCHAT has high PPV and high NPV for diagnosis of ASD.

Abstract 31

Evaluation of the PROMIS Pediatric Parent-Proxy Peer Relationships Measure in Children with Autism Spectrum Disorder

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Purpose: Children with Autism Spectrum Disorder (ASD) frequently have challenges with peer relationships. Prior research has

shown that children with ASD who have more severe ASD symptoms and lower IQs have more social difficulties. There are few tools to efficiently measure peer relationships in children with ASD. The NIH Patient Reported Outcomes Measurement Information System (PROMIS) initiative has developed a freely available measure of peer relationships that can be administered efficiently using computerized adaptive testing (CAT). The purpose of the study is to evaluate the PROMIS pediatric parent-proxy Peer Relationships measure in 5-12 year old children with ASD. **Methods:** Participants were parents of 5-12 year old children with ASD at one of three participating Developmental-Behavioral Pediatrics Research Network (DBPNet) sites. These parents completed a demographic form, the pediatric parent-proxy Peer Relationships measure, and the Social Responsiveness Scale 2nd Edition (SRS-2). The Peer Relationships measure was completed using CAT, minimizing the number of items administered while maintaining measurement precision. **Results:** Ninety-seven parents participated in the study. The mean age of the children was 8 years (SD 2), and 89 percent were male. The mean IQ was 85 (range: 39-138). The SRS-2 Total T-score mean was elevated (76, SD 11). The CAT for the pediatric parent-proxy Peer Relationships measure required just 5 items in 95 of the 97 participants to achieve adequate levels of precision (equivalent to a reliability coefficient of >0.90). The T-scores for the Peer Relationships measure were normally distributed but shifted to the left. The mean T-score was 35 (95% CI [31.5, 38.5]; approximately 1.5 SD below the mean in the PROMIS measure's standardization sample). There was a moderately strong negative correlation between the pediatric parent-proxy Peer Relationships measure and the SRS-2 Total T-score ($r = -0.58$, $p < 0.0001$). **Conclusion:** The PROMIS measure captured a range of peer relationships in children with ASD. Higher ASD severity (as measured by the SRS) correlated with lower scores on the Peer Relationships measure. The PROMIS pediatric parent-proxy Peer Relationships measure may therefore be an efficient, precise, and valid measure of peer relationships in 5-12 year old children with ASD.

Abstract 32

Substance Use Patterns and Knowledge of Alcohol and Marijuana Use Harm among Adolescents with ADHD

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Purpose: Youth with ADHD are at increased risk for alcohol and marijuana use, which can worsen their already concerning academic, social, and behavioral functioning outcomes. The objective of this study is to describe substance use patterns and knowledge of alcohol and marijuana use harm. **Methods:** Consented youths with ADHD ages 12-18 years completed a self-administered online survey about substance use patterns, and knowledge of substance use harm related to ADHD. Prevalence and correlate risk behaviors for alcohol and marijuana use were estimated using descriptive statistics. Frequency of accurate knowledge about substances was reported, with 2 sample t-tests, Fisher's exact tests, and X2 analyses used to determine if age, gender, race, or past year drinking varied by knowledge. **Results:** Of 87 consented youth (75% response), 63% were male, 71% white, and average age was 15.6 years. Past year alcohol and marijuana use were reported by 23% and 15% of all participants, respectively; average age of first use was 13.8 years and 15 years, respectively. Older age was associated with past year alcohol (16.6 vs. 15.3 years, $p < .01$) and marijuana (16.5 vs. 15.4 years, $p < 0.05$) use. The majority of subjects (62%) said "no" or "don't know" when asked if alcohol can make ADHD symptoms worse, with older subjects ($p = 0.01$) and males ($p = 0.05$) more likely to know that alcohol can make ADHD symptoms worse, and race, past year drinking, and stimulant status not associated with knowledge. Of those on stimulant medication, 66% reported "no" or "don't know" when asked if alcohol can interfere or get in way of their medications, with older subjects more likely to report "yes" ($p < 0.01$) and no other assessed factors associated with knowledge. Past-year drinking is strongly associated with past-year marijuana use (OR: 12.89, 95% CI: 3.37, 49.25). Of those with past year marijuana use (N=13), 7 reported using marijuana to make ADHD symptoms better or help with medication side effects. **Conclusion:** Youth with ADHD use substances and they do not know the risk of harm associated with alcohol and marijuana use related to ADHD. Some may even think substance use can help with ADHD symptoms. Knowledge about substance use risks in ADHD should be included in ADHD care.

Abstract 33

Diagnosis and Treatment of ADHD among Children in Medicaid by Medicaid Eligibility Status Using Administrative Claims Data, 2013

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Purpose: To describe diagnosis and treatment patterns for ADHD among young children in Medicaid by eligibility status and compare these patterns to clinical treatment guidelines. **Methods:** 2013 MarketScan Medicaid claims data were used to identify 865,467 children aged 2-5 years, and were grouped by mutually exclusive basis of eligibility categories (poverty status, disability, and foster care). Children with 2 or more ICD-9 codes for ADHD (314.XX) were considered to have an ADHD diagnosis; similarly, 2

or more ICD-9 codes for selected internalizing (INT) and externalizing (EXT) conditions were used to determine the presence of a co-occurring mental disorder. To identify treatment for ADHD, those with one or more prescription drug claims for an FDA-approved ADHD medication were considered to be receiving medication treatment, and those with one or more claims with a qualifying Current Procedural Terminology (CPT) or Healthcare Common Procedure Coding Systems (HCPCS) code were considered to have received psychological services. **Results:**Of children aged 2-5 in Medicaid, those in foster care were most likely to have an ADHD diagnosis (13%), followed by the disability group (9%); a much lower percentage of the poverty group had an ADHD diagnosis (3%). Of those with a diagnosis, more than half had received medication treatment. Young children with ADHD in foster care were more likely to have received psychological services (69%) than children in the disability (40%) or poverty (38%) groups. Young children in foster care were also more likely to have a co-occurring internalizing or externalizing disorder (INT: 20%; EXT: 27%) than in the disability (INT: 10%; EXT: 21%) or poverty (INT: 9%; EXT: 20%) groups. **Conclusion:** Analysis of Medicaid claims data show different patterns of ADHD diagnosis and treatment in young children based on their Medicaid eligibility. Young children in foster care were the most likely to have received an ADHD diagnosis and have a co-occurring mental disorder, but are also most likely to receive psychological services, following AAP guidelines of behavioral therapy as the recommended treatment for ADHD in this age group.

Abstract 34

Psychosocial Treatment for Trauma Following a School Shooting: Program Effectiveness and Implementation Barriers

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Purpose:Mass school shootings can have emotional, psychological and physical effects on students, teachers and the community. How to best intervene to prevent or treat the symptoms of distress in the aftermath of a shooting may depend on a variety of setting and situational factors. This study describes the process of implementing a school-based psychological treatment program in a small-town school following a mass fatal school shooting. **Methods:**9 middle and high school females who were screened for PTSD symptoms completed Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox, 2004), an evidence-based, 10-week skills-based cognitive group therapy intervention for children over age 10. **Results:**Total youth reported PTSD symptoms decreased significantly from pre- to post-treatment ($t(8) = 2.86, p < .05$), and there was a significant decrease in parent-reported symptoms of child depression ($t(8) = 3.08, p < .05$). **Conclusion:** Although CBITS was an effective intervention following the school shooting, significant challenges to program implementation included parent, school and community resistance. Implications for trauma-focused treatment programs, and for the effective implementation of school-based interventions more generally, will be discussed including suggestions for optimizing parental consent and engagement and for increasing school staff investment in psychosocial programs.

Abstract 35

Free2B: The Design and Initial Evaluation of a Brief Multi-Media Bullying Prevention Program

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Purpose:Urban minority youth are disproportionately exposed to violence, a factor that perpetuates disparities in education, incarceration, and social/behavioral problems. Involvement in bullying in early adolescence has been associated with maladaptive outcomes as youth enter young adulthood. This highlights the crucial importance of bullying prevention during the middle school years for overcoming disparities related to violence. Combining state-of-the-art interactive technology, a strong theoretical foundation and a partnership-based approach with urban youth and educators, initial studies of Free2B will be examined to determine its relevance, acceptability, and initial effectiveness for 7th and 8th graders. **Methods:**The program theory explicates how the primary intervention components (3D film, inspirational videos and an interactive experience in which students participate in the program by responding to quiz questions about bullying using hand-held devices) are thought to impact both proximal (e.g., knowledge of bullying facts; prosocial attitudes about positive bystander behavior) and distal (e.g., increases in positive bystander behavior and collective action to prevent bullying) outcomes over time. **Results:**Data from a pilot study with 268 7th and 8th grade ethnic minority youth from two urban schools will be presented. Over 90% of students found the program to be acceptable and feasible. In addition, paired sample t-tests also suggest that Free2B enhanced students social problem-solving knowledge, prosocial attitudes about bullying, and confidence in resolving conflicts. **Conclusion:** Free2B highlights how researchers can collaborate with multi-media experts to develop engaging and scientifically-grounded prevention programs. Challenges for

researchers in trying to bridge the gap between theory, practice, and innovation will be highlighted, including the need for balancing the use of technology to engage students in learning best practice strategies in an entertaining way without depicting the violence commonly seen in Hollywood productions.

Abstract 36

The Prevalence of Depressive Disorders in Children with Specific Learning Disability in India

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Purpose:Children with learning disabilities are at risk for behavioral disorders, including depression. In India, diagnosis and interventions for learning disorders are limited. There is little known about the prevalence of depression and its severity in school-aged children with specific learning disability (SLD) compared to non-learning disabled peers. **Methods:**In a tertiary care pediatric neurodevelopmental centre in Mumbai, 200 children referred consecutively over twelve months for low academic performance were screened by clinical records, academic history, normal vision-hearing tests, underwent psychoeducational battery and cognitive testing, and were determined to have average intelligence, but meeting criteria for Specific Learning Disability (SLD). The controls were 100 siblings screened for SLD by curriculum based tests. We assessed depression using Hamilton Rating Scale for Depression (for 8-12 years) and Beck Depression Inventory II (for 13-14 years). Additionally parental history of mental health issues and medicinal use was obtained. We performed multivariate logistic regression to study the association between SLD and depression. **Results:**The mean (Standard Deviation) age of children with SLD was 11.9 (1.6) years and 11.2 (1.2) years in non-SLD children. A significantly higher proportion of children with SLD reported that their academic and extracurricular activities were reduced compared to children without SLD (6% vs 0%, $p<0.01$). Though a higher proportion of children with, than without, SLD reported depression (16% vs 11%, $p=0.29$), the difference was not statistically significant. About 15% of the SLD cases had mild and 1% had moderate depression. About 11% of non-SLD children had mild depression, and none of the children had severe depression. In the multivariate model, depression was more likely in older children (aged 13-14 years vs. 10-12 years; Odds Ratio [OR]: 5.2, 95% Confidence intervals [CI]: 2.4-11.1), in children from upper middle socio-economic status (SES) (OR: 6.7, 95% CI: 1.3-34.0), and in those whose parents were on psychotropic medication (OR: 5.3, 95% CI: 1.8-16.1). **Conclusion:** In an Indian tertiary center cohort, children with SLD did not have significantly higher proportion of depression than their non-disabled siblings. However, older children, those with higher SES, and parental psychopathology are significantly associated with risk of depression.

Abstract 37

Incidence of Celiac Disease in a Down Syndrome Birth Cohort

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Purpose:The rate of celiac disease (CD) among children with Down syndrome (DS) is estimated at 5% according to the 2011 AAP Health Supervision Guidelines. However, previous studies have reported rates of CD in DS that vary widely (3-10%). In addition, these previous studies have been limited by use of cross sectional cohorts of referred samples of children with DS from specialty clinics and by use of billing codes rather than laboratory confirmed cases of DS and CD. Objectives: To determine the incidence of biopsy-proven celiac disease among a birth cohort of children with Down syndrome. **Methods:**Detailed provider-linked health records of children born from 1976-2000 in Olmsted County, MN were retrospectively reviewed. Children with karyotype-confirmed DS were identified. The risk for CD was identified by positive serology and confirmed by duodenal biopsies. The incidence of CD in DS was then compared to the overall published incidence of CD for Olmsted County residents during 2000-2010. **Results:**Among children born to residents of Olmsted County from 1976-2000, 40,197 had not denied research authorization and were considered in this analysis. Of these, 49 children with DS were identified with an estimated DS incidence of 12.2 per 10,000. Follow-up was available for 46 of the 49 children. Median age at the last clinical visit was 19.6 years (IQR, 13.4-26.3). Four of the 46 patients (8.7%) with DS were identified with positive celiac serology (at ages 9, 12, 19, and 23 years). A confirmatory biopsy was performed for 3 of the 4 (6.5%). The total person-years of follow-up for the 46 subjects was 825.8 years, yielding an overall incidence of CD of 484 (95% CI, 132-1240) per 100,000 person-years. The published overall age- and sex-adjusted incidence rate of CD for Olmsted County residents during 2000-2010 is 17.4 (95% CI, 15.2-19.6) per 100,000 person-years. **Conclusion:** Rates of CD among a birth cohort of children with DS from Olmsted County, MN was 6.5% or an overall incidence of 484 per 100,000 person-years. This is considerably higher than the general Olmsted County CD incidence of 17.4 per 100,000 person years. This study, the first to use a population-based birth cohort with DS confirmed by karyotype and CD confirmed by biopsy, provides

evidence to support the AAP Health Supervision Guidelines for routine clinical screening for celiac disease in children with DS.

Abstract 38

Recommendations for Pediatric Behavioral Health Screening with Latino Farmworker Families

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Purpose: It is important to use culturally validated screening tools and surveillance within pediatric primary care to address health disparities (Zuckerman et al., 2014). The purpose of this systematic literature review is to help synthesize the research on behavioral health screeners and cultural considerations when working with Latino children and their migrant/seasonal farmworker families (i.e., predominantly Mexican American, limited English proficiency). **Methods:** We searched EBSCOhost using keywords, with a focus on peer-reviewed studies in English or Spanish. The search initially produced 2,217 articles; we narrowed these down to 142 articles. Two reviewers reviewed each published article and reached consensus about inclusion based on set criteria. Each article was then individually reviewed and coded/summarized. **Results:** A table presenting the cultural validation for specific screeners [e.g., Children with Special Health Care Needs (CSHCN), Patient Health Questionnaire (PHQ-9)] will be provided as a resource for pediatricians and integrated clinicians working with this population. We also identified themes and recommendations regarding cultural competency, and these included aspects of the relationship, clarity of communication (expectations, explanations, & referrals), language considerations, acculturation, spiritual/cultural beliefs about illness, and barriers to care. **Conclusion:** Latino children are the fastest-growing ethnic minority group in the United States, and it is estimated that by 2050 one in three children will be Latino/Hispanic (Federal Interagency Forum on Child and Family Statistics, 2012). Few pediatric behavioral health screeners have undergone cultural validation (i.e., beyond Spanish-translation) for this population. It is essential to have resources available for primary care pediatricians and integrated behavioral health clinicians that help to improve quality of care.

Abstract 39

How Do Primary Care Pediatricians Perceive the Adequacy of Their Developmental and Behavioral Pediatrics Training during Residency?

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Purpose: In recent years, primary care pediatricians (PCPs) have been expected to assume greater responsibility for the increased number of children with developmental and behavioral problems. To help PCPs better fulfill this role, a mandated rotation in DBP was added to the core curriculum for all pediatric residents. The purpose of this study was to examine the perceived adequacy of DBP training during residency. **Methods:** The Pediatrician Special Education Survey (PSES) was mailed to 3,000 PCPs across the United States for anonymous completion. Addresses were obtained through the AAP's list manager. The PSES consisted of 4 sections: demographics, PCP's general knowledge about special education, PCP's clinical practice for children needing special education services, and residency training in D-B pediatrics. Data was analyzed using descriptive statistics and the Wilcoxon-Mann test. **Results:** 460 PCPs responded from 41 states (17% response rate). 97% of PCPs were board certified. 63% were female. Median year completed residency training: 1996 (range: 1960-2014). In terms of practice setting: 29% urban, 57% suburban, and 15% rural. 79% worked primarily in a private office, 10% hospital clinic, 9% community clinic, and 2% other. With respect to their residency training, only 32% of PCPs believed they received adequate training in the evaluation of DBP issues, and 22% perceived it as adequate for management of these issues. More specifically, 38% indicated they had been adequately educated and trained regarding early intervention, 15% regarding special education services, 19% regarding psychoeducational testing, and 7% regarding IEPs, IFSPs, and 504 accommodation plans. No difference was noted in overall special education knowledge between PCPs who did and did not do a required rotation in DBP. ($p=.561$; Wilcoxon-Mann test) **Conclusion:** The overwhelming majority of PCPs do not feel their residency training in DBP was adequate, and PCPs who did a formal DBP rotation were overall less knowledgeable regarding special education issues.

Abstract 40

Social Networks of Adolescents with Type 1 Diabetes: Association with Diabetes Management and Treatment Adherence

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Purpose:Specific evidence for the role of peer relations in the promotion of effective diabetes management behaviors and glycemic control has produced mixed results (Palladino & Helgeson, 2012). The present study examined the composition of social networks of adolescents with T1DM and their association with self-management, glycemic control, and adherence.**Methods:**Participants included 142 adolescents (ages 14-19) with T1DM and their parents from three university-affiliated medical centers. Adolescents listed up to 10 individuals with whom they regularly interacted with (Bukoswki, Hoza, & Boivin, 1994), rated each individual on degree of closeness using a 4-point likert scale (1=not very to 4=very close), indicated if they discussed their diabetes with each individual and if each individual has diabetes. Adherence was measured using adolescents blood glucose monitoring frequency and parent and adolescent reports on the Diabetes Self-Management Profile (DSMP). Hemoglobin A1c was used to measure glycemic control. **Results:**Adolescents listed an average of 7 (SD=3) people in their network and indicated that they were very close to approximately 4 (SD=3) people. On average, individuals discussed their diabetes with 6 (SD=3) people in their network and an average of one (SD=2) person in each network had diabetes. Degree of closeness was significantly positively associated with adolescents($r=0.186$, $p=0.03$) report on the DSMP. The total number of people in the network who have diabetes was significantly negatively associated with parentsreport on the DSMP ($r= -0.167$, $p=0.046$). No other significant correlations were found. **Conclusion:** These findings suggest a need for clinicians to consider the nature of social networks and their association with diabetes outcomes. It may be the case that parents of adolescents who are struggling with their care may be more likely to seek out networks with others who have diabetes. Fostering close social networks may also be beneficial in promoting adolescentsdiabetes management.

Abstract 41

Do Childhood Characteristics Predict Persistence of Attention-Deficit Hyperactivity Disorder (ADHD) into Adulthood: A Population-Based Study

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Purpose:Previous research has failed to consistently identify factors that predict persistence of ADHD from childhood through adulthood. The objective of this study is to determine whether specific childhood characteristics predict persistence of ADHD into adulthood among population-based, incident cases of childhood ADHD. **Methods:**Young adults with research-identified childhood ADHD and controls from a 1976-1982 birth cohort were invited to participate in a follow-up study that included a structured diagnostic interview (MINI International Neuropsychiatric Interview-MINI). Participants included childhood ADHD cases (N=232; mean age 27.0 years; 167 males, 65 females) and controls (N=335; mean age 28.6 years; 210 males, 125 females). Adult ADHD was defined from the MINI ADHD module using a norm-referenced approach (item endorsements exceeding 2 standard deviations above the mean for the control subjects). Childhood characteristics (socio-demographic factors, gender, childhood stimulant treatment, age of diagnosis, ADHD sub-type, co-morbid learning (LD) or psychiatric (PD) disorders, receipt of special educational services, and IQ) were compared between individuals with and without persistent ADHD. The chi-square test was used to compare discrete variables, and Wilcoxon rank-sum test for continuous variables. **Results:**Subjects with persistent ADHD (N=90; 38.8%) were significantly less likely to have been diagnosed with a learning disorder before the age of 18 (61.1% vs. 74.7%; $p=0.03$) and had higher rates of childhood PD (68.9% vs. 55.6%; $p=0.04$) compared to those without persistent ADHD (N=142; 61.2%). **Conclusion:** In this prospective, population-based cohort, only the presence of co-morbid childhood PD was associated with persistence of ADHD into adulthood. In the absence of clinical predictors of ADHD persistence, monitoring and follow-up into young adulthood is important for all children with ADHD.

Abstract 42

Provider Support of Autonomy in Adolescents with Type 1 Diabetes: Association with Diabetes Management and Treatment Adherence

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Purpose:A patient's perception of their health care provider's autonomy support has been shown to relate to health outcomes. Specifically, adults with either type 1 or type 2 diabetes who perceived their diabetes care provider to be more autonomy supportive had lower HbA1c levels one year later (Williams, Freedman, & Deci, 1998). However, few studies have examined how

perceived autonomy support relates to self-management and health outcomes during mid to late adolescence. The purpose of this study was to determine how an adolescent's perception of their diabetes health care provider's support of autonomy was related to their glycemic control, treatment adherence, and self-management. **Methods:** Participants included 142 adolescents (ages 14-19) with type 1 diabetes and their parents from three university-affiliated medical centers. Adolescents completed the Health Care Climate Questionnaire (HCCQ), a measure which assessed adolescents perception of autonomy support from the diabetes care provider. Adolescents and parents also completed the Diabetes Self-Management Profile (DSMP), a measure of adolescents diabetes self-management behaviors (e.g., insulin administration, hypoglycemia management, diet). Treatment adherence was also measured using adolescent's blood glucose monitoring (BGM) frequency collected over a two-week period. Hemoglobin A1c was used as a measure of glycemic control. **Results:** Perceived provider autonomy support was significantly correlated with adolescent ($r(140) = 0.215, p < .05$) and caregiver ($r(140) = 0.235, p < .001$) report on the DSMP. Perceived support was not associated with HbA1c or BGM treatment adherence. **Conclusion:** Adolescents who perceived their diabetes care provider to be more autonomy supportive had higher scores on the diabetes self-management questionnaire as indicated by both adolescents and caregivers. Future studies should be conducted longitudinally to determine the direction of influence between perceived provider autonomy support and adherence, glycemic control, and diabetes self-management.

Abstract 43

Acceptability and Feasibility of Electronic Medication Adherence Technology in a Pediatric Hematology Clinic

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Purpose: To evaluate the acceptability and feasibility of a novel electronic medication monitoring system, the Wise device, to measure adherence in a pediatric sickle cell disease (SCD) population. **Methods:** Despite the well-documented benefits of hydroxyurea (HU) in decreasing morbidity/mortality, nonadherence is common and often related to HU discontinuation and less optimal disease outcomes. Thus, accurate assessment of nonadherence is essential. This prospective, longitudinal pilot study recruited youth with SCD currently receiving HU treatment. Potential participants were approached in an outpatient pediatric hematology clinic and study procedures took place in conjunction with standard care visits. Families stored HU in the Wise device, an electronic medicine dispenser with a wireless tracking system. Device use was monitored for approximately two months. Baseline and follow-up family-report measures were completed via computerized questionnaires. **Results:** 36 youth (10.7 ± 4.5 years old, 50% female, 97% African American) previously initiated HU (at 6.5 ± 4.3 years of age). The overall rate of consent was 82% (8 families declined, 44 approached) and there was a 100% retention rate. All families reported using the device at some point during the participant time on study. All devices were returned. Family-report measures completed at the follow-up visit suggested that families liked the device (83%), thought the device worked well (83%), and considered the device easy to use (100%). Overall, 92% of families thought other families would be willing to use the device and 86% reported being willing to use the device again. **Conclusion:** Results suggest that Wise device technology is a feasible and acceptable form of electronic medication adherence monitoring in a pediatric hematology population. Future research is needed to further validate this novel electronic measure of medication adherence and provide data regarding its reliability. Given the device's feasibility and favorable acceptability, its use may have important implications for future adherence monitoring research and individualized interventions to improve adherence.

Abstract 44

Wandering Prevalence in Youth Ages 6-17 with Autism Spectrum Disorders

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Purpose: There has been increased concern about children with autism spectrum disorders (ASDs) wandering or eloping. While a recent study examined the frequency and impact of elopement in a convenience sample, there are no published epidemiological studies on this problem. The aim of this study was to examine the prevalence of wandering in youth with ASD in a nationally representative sample. **Methods:** Data was obtained from the 2011 Survey of Pathways to Diagnosis and Services, a nationally representative survey of the parents of children who have ever been diagnosed with ASD, intellectual disability (ID), or developmental delay (DD). Elopement was assessed based on parental response to four questions about whether their child had wandered from their own home, another's home, a structured program such as school, or a public place within the previous year. Chi-square analysis was used to compare the prevalence of elopement across three diagnostic categories: ASD only, ASD with ID/DD, and ID/DD without ASD. **Results:** Elopement rates differed by diagnostic category ($p = .0009$); 34% of the ASD+ID/DD group, 33% of the ASD only group, and 23% of the ID/DD only group had wandered in the past year. Among all children with a current ASD

diagnosis, 33.7% had eloped from one or more locations within the previous 12 months. Across the four locations examined, elopement from a public place was most common (24%), followed by the child's own home (11%), structured programs (10%) and another person's home (6%). Among those with a current ASD diagnosis, elopement tendency was associated with greater ASD severity ($p=.0043$; chi-square) and younger child age ($p=.0036$; logistic regression). **Conclusion:** One in three children with ASD in this nationally-representative sample of school-age children had wandered in the previous year, with younger children and children with more severe ASD being at the greatest risk. The high prevalence of elopement in this population highlights the need to identify better strategies for the prevention and management of this problem.

Abstract 45

Clinical Correlates of Wandering in Youth with Autism Spectrum Disorders

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Purpose:Wandering, or elopement, may put children with autism spectrum disorders (ASDs) at risk for serious injury or death. An understanding of the clinical correlates of elopement may allow for the identification of children who are most likely to wander, and may guide efforts to improve prevention or response to elopement in this population. The objective of this study was to identify, in a nationally representative sample, the clinical characteristics of school-age children with ASD who wander. **Methods:**Data were obtained from the 2011 Survey of Pathways to Diagnosis and Services, a nationally representative survey of the parents of children ages 6-17 years who have ever been diagnosed with ASD, intellectual disability (ID), or developmental delay (DD). Demographics and subscale scores on the Children's Social Behavior Questionnaire (CSBQ) -- a validated, 49-item questionnaire designed to measure a range of symptoms across the autism spectrum -- were compared between wanderers and non-wanderers with a current ASD diagnosis. Higher CSBQ scores are associated with greater severity. 11 CSBQ items were also analyzed individually for their specific relevance to the safety of children who elope. **Results:**Wanderers scored higher than non-wanderers on all 6 CSBQ subscales: stereotyped behavior ($p<.0001$), reduced contact and social interest ($p<.0001$), orientation problems ($p<.0001$), difficulties in understanding social information ($p<.0001$), resistance to change ($p=.02$), and behavior/emotions not optimally tuned to the social situation ($p<.0001$). Wanderers were also more likely to often lose their temper ($p=.0008$), over-react ($p=.003$), get angry quickly ($p=.03$), lack awareness of danger ($p=.01$), panic in new situations ($p=.005$), and get lost easily ($p<.0001$). **Conclusion:** Many behaviors that could compromise safety and complicate recovery of eloped youth were significantly associated with the propensity to wander. These findings have major implications for the training of first responders and other individuals who may be called upon to locate and ensure the safety of eloped children with ASD.

Abstract 46

Randomized Controlled Trial of Shared Decision Making to Improve Care for Children with Autism

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Purpose:Parents of children with autism spectrum disorder (ASD) frequently face complex decisions about the treatment of challenging behaviors. The purpose of this study was to test an intervention to support parent involvement in making medication and behavioral treatment decisions. **Methods:**We randomized 11 clinicians in a developmental-behavioral pediatric (DBP) practice into intervention or usual care control groups. The intervention included: 1) decision aids to help providers elicit parent treatment priorities and share relevant treatment options, and 2) provider training on how to use these aids to promote shared decision making (SDM). Parents were eligible if they had a child with ASD age 4-15 years with a follow up visit scheduled. All parents completed the Aberrant Behavior Checklist and reported their treatment priorities. We video recorded all visits and quantified the amount of SDM using the validated OPTION scale. Parents completed the validated Decisional Conflict Scale. We audited charts to assess alignment of the documented visit treatment plan with the parent's top priority. **Results:**To date, we have enrolled 46 parents of children with ASD (with expected final sample of 60). Intervention ($N=23$) and control ($N=23$) groups are similar on all demographic and child behavioral characteristics ($p>0.05$). For the overall sample, child mean age (SD) is 9.1 (3) years, and 83% are male. Compared to controls, intervention group parents are more involved in shared decision-making during clinic visits (23 vs. 31 on OPTION scale, $p=0.11$), and less conflicted about treatment choices, demonstrating a greater decrease in Decisional Conflict Scale scores from before to after the visit (25 vs. 39 point decrease, $p<0.05$). Compared to controls, intervention group parents are more likely to have their priorities for their child's behavior addressed by the treatment plan (47% vs. 88%, $p=0.01$). **Conclusion:** DBP clinic visits appear effective in lowering levels of decisional conflict. However, with engagement in SDM, decisional conflict is further reduced compared to usual care practices and families' primary concerns are more often addressed.

Abstract 47

How do our children and adolescents with attention deficit hyperactivity disorder sleep?

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Purpose:The sleep disorders are frequently associated to neurodevelopment pathologies, including attention deficit hyperactivity disorder (ADHD). **Methods:**We designed a transversal, descriptive and analytic study, through an inquiry to parents of children and adolescents with ADHD between the ages of 6 and 18 years, followed in Neurodevelopmental consultation. **Results:**Ninety one (91) children and adolescents were enrolled (77% male) with a median age of 11 years \pm 3. According to criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V), 50% of the sample was classified into ADHD Combined Type, 44% Inattentive Type and 6% Hyperactive-Impulsive Type. The majority of the sample was medicated with methylphenidate (95%). Sleep disorders were more frequently associated to ADHD combined type ($p=0,04$). 66% of the sample slept an adequate number of hours at night (9,8 median hours) and 7% slept during the day. Regarding sleeping habits, 21% slept with a light on, 17% slept with an object and 8% slept in the parents bed. Enuresis was mentioned in 25% of cases. Sleep disorder were referred by 89% of the parents. At least one type of parasomnias were stated in 83% of the cases: 75% reported restless legs, 54% sleep-talking, 46% nightmares, 27% bruxism, 19% sleepwalking and 18% night terrors. We found out a strong association between ADHD combined type and the presence of parasomnias ($p=0,005$). About 72% of the sample referred insomnia, 22% had trouble falling asleep, 17% had night awakenings and 33% both disturbances. We encountered a strong association between insomnia and the male gender ($p=0,012$). In this sample, 30% referred day hypersomnia that affected the daily life activities. There was a strong association between excessive daytime sleepiness and middle adolescence (14-17 years) ($p=0,031$). Parents of children and adolescents with sleep disorders were worried about this topic ($p=0,03$). Only in 14% of the cases, parents had the opportunity to address this issue with his physician. **Conclusion:** In the majority of this population, the duration of nighttime sleep was adequate for age. However, we noticed that sleep disorders in children and adolescents with ADHD has a high prevalence and in about a third of the cases affects the daily life activities. This topic should be addressed in the child's health surveillance appointments.

Abstract 48

A Novel Approach to Pain Assessment: The Pediatric Functional Assessment Tool

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Purpose:Chronic pain assessment in pediatrics has been based on patient subjective report. The Pediatric Functional Assessment Tool (PFAT) was developed to enhance the evaluation of pain by including functional impact.**Methods:**The PFAT was developed as part of an inter-professional day treatment program with a daily census of 24 children 6-18 years old with medical/psychological diagnoses including children with chronic pain syndromes and was approved by the hospital Pain Management Committee. The PFAT assesses function in the context of pain and promotes the use of non-pharmacologic strategies to maximize function. It includes traditional FACES-Revised rating scales for self and nurse pain report, both self and nurse functional ratings, and it cues the child and nurse to consider a non-pharmacologic coping strategy. The functional scale assesses mild, moderate, severe, and very severe impairment due to pain. The PFAT is completed at 2 scheduled times during the program day with additional assessments when the patient reports pain. Staff were surveyed to evaluate the tool. **Results:**Inter-professional staff felt the PFAT was easy to administer, enhanced their understanding of the patients' pain experiences, and reinforced the use of non-pharmacologic strategies to improve function despite pain. Also, staff reported that sharing results of the PFAT increased parental understanding of their child's pain experience and helped them incorporate non-pharmacologic strategies to improve function at home and in the community. **Conclusion:** The PFAT is a novel, easily administered tool that provides enhanced data about pediatric patients' pain experiences. It can inform goal setting aimed at improving functional outcomes by encouraging behavioral coping strategies and minimizing pharmacologic intervention. Further study is needed to determine the utility of the PFAT in other pediatric settings.

Abstract 49

Writing Prescriptions for Motor Therapies: Primary Care Pediatrician Knowledge and Comfort

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Purpose:A 2004 AAP clinical report stated it is the responsibility of primary care pediatricians (PCPs) to ensure children with motor impairments receive appropriate services by writing prescriptions for OT and/or PT as needed and by providing accurate diagnoses when possible. If the cause of a child's disability is not identifiable, PCPs should provide an accurate description of the medical

condition and impairment. The purpose of this study is to examine PCP practices regarding children who require prescriptions for OT and/or PT. **Methods:**The Pediatrician Special Education Survey (PSES) was mailed to 3,000 PCPs across the United States for anonymous completion. Addresses were obtained through the AAP's list manager. The PSES consisted of 4 sections: demographics, PCP's general knowledge about special education, PCP's clinical practice for children needing special education services, and residency training in D-B pediatrics. Data was analyzed using descriptive statistics and logistic regression analysis. **Results:**460 PCPs responded from 41 states (17% response rate). 97% of PCPs were board certified. 63% were female. In terms of practice setting: 29% urban, 57% suburban, and 15% rural. 79% worked primarily in a private office, 10% hospital clinic, 9% community clinic, and 2% other. Most PCPs incorrectly believed that a medical diagnosis was needed for preschool children (59%) and grade school children (68%) to receive OT or PT. Only 67% of PCPs reported "always" feeling comfortable writing prescriptions for preschool children; 53% "always" felt comfortable writing prescriptions for school children. Using logistic regression analysis, more comprehensive residency training in D-B pediatrics was associated with greater comfort with writing motor therapy prescriptions for preschool children. ($p = 0.021$) **Conclusion:** Many PCPs are unaware and/or uncomfortable regarding their role in writing prescriptions for OT/PT, and thus, some children may not receive the motor therapies that they need. If PCPs are to fulfill the mandate outlined by the AAP in its 2004 clinical report, additional education is needed.

Abstract 50

What Brought You in Today? Screening for Emotional and Physical Neglect within an Emergency Medicine Context

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Purpose:Despite being the most common form of maltreatment, neglect remains an understudied childhood experience. Consequently, little is known about the prevalence and deleterious impact of neglect in pediatric populations. Past research suggests that the pediatric emergency department (ED) may be an ideal setting to identify vulnerable youth living in adverse family environments (Louwers et al., 2012); however, to date, a paucity of research exists regarding neglectful parenting in this context. The present study sought to address this gap in the research by examining how a) the polyneglect (i.e., emotional neglect and physical neglect) profile of youth entering the ED compares to other community samples and b) whether specific triage data corresponds to patterns of neglect. **Methods:**In total, data will be collected on 100 youth between the ages of 8-14 who enter the ED. As part of a larger study, youth complete a valid, innovative screener specifically designed to assess youth perceptions of neglect (Kaufman Kantor et al., 2004). Presently, 18 participants have completed the study with data collection scheduled to end in the beginning of August. **Results:**Initial findings suggest that for both emotional ($t(17) = 3.54, p = .003$) and physical neglect ($t(17) = 3.31, p = .004$), scores are significantly elevated for youth visiting the ED compared to community samples. **Conclusion:** These results may help explain why youth presenting at the ED tend to be at-risk for behavioral and emotional disorders (Grupp-Phelan et al., 2007), and further support the ED as an important context to implement mental health and family services. Findings concerning the relation between neglect and specific ED presentations (e.g., ambulatory care sensitive conditions) and injury severity will be discussed as will clinical implications and future directions for these findings.

Abstract 51

Addressing Barriers To Early Screening, Diagnosis And Treatment For Autism Spectrum Disorder In Latino Children

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Purpose:Autism affects children and their families across all racial, cultural and socioeconomic groups. A number of studies report differences in prevalence, diagnosis and service use between Latino families and non-Latino white families. Despite these differences, there is little research available on specific barriers to account for the discrepancies in screening, diagnosis and treatment of autism among Latino families. The study objectives are to: 1) obtain a comprehensive understanding of potential barriers to timely screening, evaluation and treatment in Latino children with autism spectrum disorder and 2) identify points in the process when these barriers occur. **Methods:**Because there is limited scientific information on the specific barriers to care which may impact Latino children, a focus group design was selected as a primary means of elucidating cultural and health system barriers. The initial phase of this project involved a series of focus groups with primary care providers who are involved in the primary medical care of Latino children with autism as well as community providers from agencies that typically provide screening for developmental disorders or diagnosis and treatment services for children with autism. **Results:**Preliminary results indicate salient emergent themes on primary care provider perceptions of the barriers facing Latino families in the screening, diagnosis and treatment of autism. These include health system barriers, traditional socioeconomic barriers, and a lack of parent, family and community understanding of developmental milestones, autism, medical systems and resources. Diagnostic and treatment providers perceived additional barriers to include pediatricians failure to address parent concerns and differing cultural

perspectives on children, doctors and the health system. **Conclusion:** This study identified barriers to accessing care for children with autism within the Latino community by exploring health care providers' perspectives on barriers. Education of families, particularly in Latino communities, about child development and autism is an important step, as is educating primary care providers on autism interventions. In addition to identifying specific barriers, providers suggested that the medical home model, care coordinators, and having co-location of developmental services helps mitigate some of the barriers.

Abstract 52

Impact of Language Underperformance on Communication and Social Functioning in Young Children who are Deaf or Hard of Hearing

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Purpose: Social and communication skills are essential for developing independence. A discrepancy between language and cognitive ability, or language underperformance (LU) has been shown to negatively impact social functioning in older children who are deaf or hard of hearing (DHH). Little is known about its impact at younger ages. We sought to investigate the relationship between LU and functional skills in children ≤ 3 years who are DHH. **Methods:** 100 children with bilateral hearing loss, ≤ 3 years of age are being enrolled in an ongoing developmental study. Cognitive ability and language levels were assessed with standardized tools including: the Mullen Scales of Early Learning or Leiter-R and Preschool Language Scales-5. Functional measures include the Pediatric Evaluation of Disability Inventory and Vineland Adaptive Behavior Scales. Language relative to cognitive abilities was defined as the ratio of receptive language score to nonverbal IQ (NVIQ). Children with language gaps or underperformance (ratio < 80) were compared to children with commensurate language (ratio ≥ 80) regarding communication and social functioning scores using general linear models to control for confounding. **Results:** Better communication functioning was significantly ($p < 0.05$) correlated with higher language levels ($r = 0.7$), better language relative to cognitive abilities ($r = 0.31$), and better access to sound (lower aided thresholds, $r = -0.31$). Children with NVIQ > 100 with LU had mean communication and social functioning standard scores significantly ($p < 0.01$) lower than children with NVIQ > 100 who had commensurate language (77 v 101 & 88 v 104 respectively). They also had communication and social functioning similar to children with NVIQ < 80 who had commensurate language (78 v 77, $p = 0.9$ & 88 v 80, $p = 0.3$ respectively). The relationships between LU and functional outcomes were not confounded by hearing loss severity, child's age, age of hearing loss identification. **Conclusion:** Language underperformance has a significant negative impact on social and communication skills in children who are DHH at very young ages. Without improvement, these deficits can have a cascading effect on a range of developmental domains as children age. Early recognition of slower language trajectories in infants and toddlers who are DHH is critical and suggests a need for changes in current early intervention services.

Abstract 53

Beyond Externalizing Behaviors: An Examination of the Effectiveness of Parent-Child Interaction Therapy on Adaptive Skills in Children with ASD

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Purpose: Parent-Child Interaction Therapy is a theoretically and empirically based intervention and has been shown to decrease externalizing behaviors in typically developing children and children with ASD. Anecdotally, adaptive skills have been reported to improve with PCIT but no published research to date have specifically examined increases in adaptive and pro-social behaviors. Previous literature noted improvement in adaptive skills as measured on the Behavior Assessment System for Children (BASC-II), such as leadership, social skills, activities of daily living, and functional communication; however, this research examined these effects of PCIT only in typically developing populations, and little research has focused on these improvements in ASD. We examined the changes on outcome measures of the BASC-II adaptive skills to determine if similar trends were present in an ASD diagnosed sample who completed PCIT. **Methods:** The current study examined pre- and post-PCIT adaptive scores on the BASC-II in an ASD population. At this time, 14 parent-child dyads have completed PCIT as part of a randomized controlled trial of PCIT. **Results:** Overall, the results evidenced an increase in adaptive skills post-treatment. Functional communication increased from the clinically impaired to the at-risk range. Also, adaptability scores increased from the at-risk range to the normal range. This study is ongoing and data is still being collected. **Conclusion:** This study suggests that PCIT may increase adaptive skills and effective communication in ASD populations, indicating PCIT is beneficial not only for externalizing behaviors, but also for adaptive functioning for ASD populations.

Abstract 54**Developmental Regression and Restricted, Repetitive Behaviors in Children with Autism Spectrum Disorders**

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Purpose: Previous research on developmental regression in youth with autism spectrum disorders (ASD) has often been limited by the definition, assessment, and methodology used to evaluate and describe regression. This study sought to overcome these limitations by examining the prevalence, timing, and correlates of developmental regression in a large, epidemiological sample of youth with ASD, specifically focusing on the rates of restricted, repetitive behaviors in youth with ASD with and without a history of regression. **Methods:** Utilizing a population-based surveillance methodology, this study includes 862 youth with ASD identified through abstraction and clinician review of medical and education records. Demographic data, as well as information related to behavioral symptoms, school program, cognitive functioning, and previous diagnostic evaluations were collected. **Results:** Approximately 21% of the sample experienced developmental regression with a mean age of regression of 24.2 ± 14.3 months. Youth who regressed were more likely to have comorbid intellectual disability, a prior community diagnosis of ASD, and be eligible for educational services as a student with autism. Youth who regressed also had higher rates of restricted, repetitive behaviors such as stereotyped speech, nonfunctional routines/rituals, and sensory interests. **Conclusion:** This study builds upon past research on developmental regression by examining the prevalence and correlates of regression in a large, epidemiological sample without restrictions regarding the timing or type of regression that have often been featured in previous studies. Results suggest that not only are youth who experience regression more likely to have comorbid intellectual disability, but are also more likely to have been previously diagnosed with ASD in the community, suggesting that development regression may play an important role in identifying children who are at risk for ASD and need evaluation. Higher rates of restricted, repetitive behaviors in regressed youth may also provide important insights into the relationship between ASD and regression, particularly in light of the recent diagnostic changes in the DSM-5 which place additional importance on the presence of restricted, repetitive behaviors in individuals with ASD.

Abstract 55**A Phase III, 6-Week, Open-Label, Treatment Optimization Study of HLD200 in Children with Attention-Deficit Hyperactivity Disorder**

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Purpose: This 6-week open label, treatment optimization phase for an 11-week Phase III Clinical Endpoint Evaluation Study (CEES), examined the safety and efficacy of HLD200, a novel methylphenidate (MPH) formulation designed to be taken at bedtime to control early morning ADHD symptoms before school and throughout the day, in pediatric subjects. **Methods:** Boys and girls with ADHD (ages 6-12) were enrolled. Subjects had current or prior response on MPH and no other major medical condition. During week-1 of dose optimization, subjects initiated HLD200 at their previous MPH dose equivalent or approximately 1.4 mg/kg at investigator discretion. Five subsequent weekly dose adjustments determined: a) optimal daily dose, and b) optimal evening dosage administration time; prior to the start of double-blind, placebo-controlled test phase at the end of Visit 8 (V8). This analysis will report the ADHD-RS-IV, BSFQ and DPREMB-R results for the dose optimization period. **Results:** Forty-three subjects were included in this analysis (20 girls and 23 boys). The mean starting dose at Visit 2 (V2) was 33.0 mg, and the mean dose achieved was 65.6 mg at V8. Mean baseline ADHD-RS-IV scores (\pm SD) at V2 were 38.2 ± 8.9 compared to mean V8 scores of 12.5 ± 6.6 ($p < 0.0001$). Mean BSFQ scores (\pm SD) at V2 were 36.2 ± 13.3 compared to mean V8 scores of 10.1 ± 7.3 ($p < 0.0001$). DPREMB-R AM and PM scores (\pm SD) also showed statistically significant differences, with an AM mean of 4.9 ± 2.4 at V2 and 1.2 ± 1.2 at V8 ($p < 0.0001$) and a PM mean of 15.1 ± 5.9 at V2 and 7.7 ± 5.7 at V8 ($p < 0.0001$). **Conclusion:** Initial results from this 6-week treatment optimization phase indicate that when taken at bedtime, HLD200 produces statistically significant improvements of ADHD symptoms and functioning, in the early morning and throughout the day, as measured by the BSFQ, ADHD-RS-IV and DPREMB-R.

Abstract 56

Psychiatric Correlates of Bullying Victimization in Children with Developmental Disabilities

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Purpose: Studies of the general pediatric population have shown that victims of bullying are at an elevated risk of experiencing psychiatric problems related to depression and anxiety. The aims of this study were 1) to determine the prevalence of bullying victimization (BV) among school-age children with developmental disorders, and 2) to identify psychiatric correlates of BV in these populations. **Methods:** Data from the CDC's 2011 Survey of Pathways to Diagnosis and Services -- a nationally representative survey of the parents of 4032 children ages 6-17 years who have ever been diagnosed with autism spectrum disorder (ASD), intellectual disability (ID), and/or developmental delay (DD) -- were analyzed. Children were identified as victims if parents indicated that it was somewhat true or certainly true that their child was picked on or bullied by other children. The prevalence of BV was compared among children with ASD-only, ASD+ID/DD, and ID/DD without ASD. Chi-square analyses were conducted to identify psychiatric correlates of BV in two groups: 1) children with a current ASD diagnosis, and 2) children with a current ID/DD, but not ASD, diagnosis. **Results:** The prevalence of BV differed among the three diagnostic categories (69.9% for ASD-only, 61.0% for ASD+ID, 54.6% for ID/DD-only; $p=.0016$). BV was associated with comorbid depression diagnoses in the ID/DD-only group ($p=.0034$), but not the ASD group ($p=.199$). In both groups, BV was associated with the presence of depression symptoms (ASD, $p=.0003$; ID/DD-only, $p<.0001$), anxiety symptoms (ASD, $p=.0079$; ID/DD-only, $p<.0001$), comorbid anxiety diagnoses (ASD, $p=.004$; ID/DD-only, $p=.0003$) and comorbid ADHD diagnoses (ASD, $p=.0377$; ID/DD, $p=.0006$). **Conclusion:** BV is very common among children with ASD and/or ID/DD. Moreover, BV is strongly associated with depression, anxiety, and ADHD in these populations. Further studies are needed to determine whether comorbid psychopathology is a cause or a consequence of victimization among children with developmental disabilities.

Abstract 57

Parental Beliefs about the Etiology of Developmental Disabilities

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Purpose: Parental perceptions about the etiology of autism spectrum disorders (ASDs), intellectual disability (ID), and developmental delay (DD) may influence their decisions about a range of health-related behaviors, including family planning, vaccination, and treatment choices. The aim of this study was to assess parental beliefs about the causes of their children's developmental disabilities. **Methods:** Results from the CDC's 2011 Survey of Pathways to Diagnosis and Services -- a nationally representative survey of the parents of 4032 children ages 6-17 who have ever been diagnosed with ASD, ID, and/or DD -- were analyzed. On a four-point Likert scale, parents indicated the extent to which they believed that prenatal exposures, postnatal exposures, and genetic factors caused their child's condition. Demographic and clinical characteristics were examined for their possible association with parental beliefs. Chi-square analyses were used to compare beliefs across three categories of current diagnoses: ASD-only, ASD with ID/DD, and ID/DD without ASD. **Results:** Among all respondents, the most commonly-endorsed cause was genetics (65%), followed by prenatal exposures (32%), and postnatal exposures (27%). Beliefs about genetic etiology differed according to diagnosis ($p=.001$); 71% of the ASD-only group identified genetics as a cause, compared to 68% in the ID/DD-only group and 56% in the ASD+ID/DD group. Although beliefs about prenatal exposures did not differ across groups, the three groups differed according to the percent that endorsed postnatal exposures as a cause (40% ASD+ID/DD, 34% ASD-only, 23% ID/DD-only; $p<.0001$). Among parents of children with ASD, no association was found between demographic factors and beliefs. However, parents of children who had experienced regression were significantly more likely to identify postnatal exposures as a cause ($p<.0001$). **Conclusion:** Parental beliefs about etiology were found to differ according to clinical characteristics, such as diagnosis (ASD and/or ID) and history of regression. An understanding of parental perceptions of etiology may aid clinicians in counseling the families of children with these disorders.

Abstract 58

Maternal Trajectories of Cigarette Use Predict Adolescent Cigarette Use

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Purpose: The goal of this study is to identify which maternal patterns of cigarette use are associated with adolescent cigarette use. **Methods:** Pregnant women (N = 456: ages 13-42) were recruited from a prenatal clinic and interviewed twice during pregnancy, providing data on cigarette use (any/none) for the first and third trimesters. Mothers were re-assessed at delivery and

during follow-up visits 6, 10, 14, and 16 years. Offspring reported on cigarette use at age 16. Covariates included maternal race, maternal age, maternal education, family income, child age, parenting behavior, and other maternal and child substance use. **Results:**A growth mixture model (entropy = 0.95) revealed a cubic growth curve with 5 patterns: infrequent/non-use (39%), post-partum quitters (5%), later quitters (7%), increasing likelihood of being smokers (17%), and chronic users (32%). Adolescents whose mothers were from the post-partum quitters group (Odds Ratio = 3.51) and the increasing likelihood of being smokers group (OR = 2.61) were more likely to use cigarettes, compared to adolescents of mothers from the infrequent/non-use group. Over 90% of the mothers in the increasing likelihood of being smokers group used cigarettes at 14 and 16 years post-partum. In contrast, none of the mothers in the post-partum quitters used cigarettes 14 years later, and only 15% used 16 years later. **Conclusion:** Distinct trajectories of maternal cigarette use may help determine if an adolescent will become a smoker. Not surprisingly, adolescent cigarette use was associated with having mothers who were more likely to smoke over time. However, adolescents whose mothers were most likely to use cigarettes during pregnancy and then quit afterward (post-partum quitters group) were also significantly more likely to be smokers. This finding suggests that prenatal tobacco exposure plays an important role in the risk for adolescent cigarette use.

Abstract 59

Executive Function in the Preschool Period: Insights on Developmental Disorders

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Purpose:Executive functioning (EF) skills have been shown to be important for optimal cognitive and emotional development, therefore, investigation of patterns of strength and weakness in EF is of interest. The existence of EF deficits in children with developmental disorders is well accepted, but the differential pattern coinciding with specific diagnosis is not as well understood. This study aims to identify unique EF profiles in children with developmental disorders in an attempt to clarify the areas of specific EF deficits in preschool children with SLI, ADHD, and ASD. **Methods:**The Behavior Rating Inventory of Executive Function Preschool Version (BRIEF-P) was employed to capture multiple components thought to subsume the EF construct. Five important skills are assessed: inhibit (INH), shift (SHFT), emotional control (EC), working memory (WM), and planning/organizing (PO). 82 preschool children participated: 57 diagnosed with developmental disorders (ADHD: n=21, ASD: n=18, SLI: n=18), and 25 typical controls. Profile differences were examined using multivariate and exploratory cluster analytic (CA) techniques. **Results:**Mean-based analyses revealed 4 distinct profiles. The typical group demonstrated consistent and normative development in all EF skills, the SLI group demonstrated adequate INH, SHFT, and EC, but were somewhat elevated on WM and PO; the ADHD group demonstrated adequate performance in SHFT and EC but significant elevations on INH, WM, and PO; and the ASD group demonstrated elevations in all EF domains. To determine whether the mean profiles for each group adequately represent these diagnostic categories, CA was performed. CA results revealed 4 clusters. Cluster 1 (75% typical) contained normal levels of EF on all measures. Cluster 2 (41% SLI) showed borderline levels of WM and PO impairment. Cluster 3 (46% ADHD) contained clinical impairment in inhibit, WM, and PO. Cluster 4 (56% ASD) contained clinical impairment on all EF measures. Results from both the profile analysis and the cluster analysis revealed similar, robust findings. **Conclusion:** Results suggest the existence of EF profile differences among preschool children with developmental disorders. The BRIEF-P may assist in increased diagnostic precision during this difficult age. Also, interventions that are designed to target specific areas of strength and weakness based on these particular profiles may be appropriate at this time.

Abstract 60

The Contribution of Education and Experience in Diagnostic Accuracy

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Purpose:Diagnosing preschool children with developmental disorders is difficult due to the wide range of behaviors within the window of normative development. This study was designed to examine the role that education and experience play in identifying atypical development in preschool children. **Methods:**Participants included four groups with differing education (i.e. low, high) and experience (i.e. low, high). Participants viewed tapes of children with developmental disorders (SLI, ADHD, ASD) and children with typical development engaged in a 5-minute individual free play assessment. Raters indicated the type of development (typical or atypical), confidence in the group assignment, and reason for developmental classification. Next, raters specified diagnostic category, confidence in diagnosis, and reason for diagnostic classification. **Results:**There were no significant differences in general diagnostic accuracy (typical or atypical) specific diagnostic accuracy (typical, SLI, ADHD, ASD), misdiagnosis, or confidence level based on differences in levels of education and experience. However, raters classified children with typical development more accurately than children with ASD, ADHD, or SLI, and they also had more success identifying ASD than ADHD or SLI. Raters were

also more confident when the classification was correct than when it was incorrect. **Conclusion:** Overall, it appears that neither education nor experience contribute to the accuracy of diagnosis in the preschool period. However, results do suggest that play is a plausible medium for gathering information about children with developmental disorders.

Abstract 61

A Targeted Intervention for Siblings of Children with Autism Spectrum Disorders: The Effects of a Sibling Support Group

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Purpose:Siblings of children with autism spectrum disorders (ASDs) experience multiple stressors and increased caregiver demands that children with neurotypical siblings do not face, resulting in greater vulnerability to the development of significant adjustment problems and internalizing disorders. The present study evaluated the feasibility and effects of Project SibSTAR (Straight Talk about Autism Realities), an 8-week support group that incorporated didactics, discussion, and role plays while using rigorous research design and psychometrically-sound measures. **Methods:**Twenty siblings of children with ASD were randomized to either the active or delayed intervention group. While the groups received the same intervention, the time-lagged design allowed for the assessment of a multiple baseline design across both groups and skills. In addition, participants reported on measures of psychological and social functioning at baseline, post group, and 6 week follow-up assessments. During these assessment sessions, data were also collected on play-based interactions within the sibling dyad. Outcomes were assessed across a variety of domains, including intervention acceptability, concepts taught during group, play-based behavioral principles, and self-report of internalizing symptoms, self-competence, and perceived social support. **Results:**Results indicated that participants increased their knowledge of autism, coping and problem solving skills, and their knowledge of behavioral skills. Further, trend level decreases in internalizing symptoms were found from baseline to post group assessment, (Depression ($F(2, 34) = 2.75, p = .08$), Anxiety ($F(2, 34) = 3.14, p = .06$)). Significant differences were found on measures of perceived social support and social self-competence, (Social support, close friend ($F(2,34) = 4.22, p = .023$), Social support, classmate ($F(1.34, 22.83) = 4.32, p = .039$), Social self-competence, ($F(1.39, 23.60) = 5.34, p = .021$)). **Conclusion:** Data suggest that the group was effective in educating children about autism, may decrease internalizing symptoms, and was feasible and accepted by participants.

Abstract 62

Comorbidities in adolescents with attention deficit hyperactivity disorder

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Purpose:The attention deficit hyperactivity disorder (ADHD) is associated with a wide range of neurodevelopment and mental health comorbidities. **Methods:**Retrospective, descriptive and analytic study, through the consultation of the records of 214 adolescents with ADHD from a total of 2016 adolescents in follow-up. Demographic characteristics, clinical history and comorbidities were analyzed. **Results:**Of the 214 adolescents, 72% were male and 28% female, with a median age of 13 years (10-17.9 years old). According to criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V), 53% were classified as inattentive type, 40% as combined type and 7% hyperactive-impulsive type. 41% of the adolescents had at least one neurodevelopmental comorbidity, and 18% had at least two. Specific learning disorders were diagnosed in a quarter of the sample: 22,9% specific reading and written expression disorders (1,9% with concomitant impairment in mathematics), 1,4% specific written expression disorder and 0,5% specific impairment in mathematics. Other diagnoses included: 10% oppositional defiant disorder, 5% anxiety/emotional disorder, 3% specific language development disorder, 2% depressive syndrome, 1% obsessive-compulsive disorder and 0,5% coordination disorder. Of the sample, 18% had atopic disease, 9% obesity, 4% enuresis, 4% sleep disorders, 4% epilepsy, 2% thyroid pathology, 0,5% encopresis and 0,5% eating behavior disorder. Methylphenidate was prescribed in 202 adolescents (94%), of whom 71% and 67% mentioned improvement in behavior and school grades, respectively. The risk factors observed were: a sibling with ADHD (8%), a parent with ADHD (0,5%), a sibling with psychiatric disorder (2%) and a parent with psychiatric disorder (2%). It was found that 5% belonged to a low income family, 3% were premature and 0,5% had been prenatal alcohol exposure. **Conclusion:** Our results point out the vast spectrum of comorbidities presented in adolescents with ADHD. All health professional and parent should be aware of the prevalence of these disorders, in order to overcome all of their needs.

Abstract 63

Exploring the Parent-Child Relationship in Young Children with ADHD

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Purpose:To investigate factors related to the quality of parent-child relationships among children with Attention-Deficit/Hyperactivity Disorder (ADHD). **Methods:**Data were extracted via retrospective chart review of 104 children ages 4-8 diagnosed with ADHD at a specialty assessment clinic. As part of a semi-structured diagnostic interview, parents rated the quality of their relationship with their child on a scale from 1-10 and estimated their level of intrusiveness, as measured by the percentage of daily conversation with their child that consists of reminders/corrections. **Results:**Quality of relationship ratings were not significantly different between mothers and fathers. However, fathers ($M=0.61$, $SD=.22$) rated themselves as less intrusive than mothers ($M=0.64$, $SD=.21$) ($t(46)=2.09$, $p=.04$). A significant relationship emerged between mothers intrusiveness and quality of the parent-child relationship ($r=-.51$, $p<.01$). Mothers whose verbal interactions with their children were characterized by more reminders/corrections described lower quality relationships. This relationship was not significant for fathers. Further, results showed that mothers of children with ADHD Combined presentation rate their relationship quality as poorer ($M=6.17$, $SD=1.74$) than mothers of children with ADHD Predominantly Inattentive presentation ($M=7.17$, $SD=2.32$) ($t(97)=2.37$, $p=.02$). This is reflected in the additional finding that parents intrusiveness is higher among children with ADHD Combined presentation (Fathers: $M=.44$, $SD=.20$) than Inattentive presentation (Fathers: $M=.65$, $SD=.21$). This relationship was significant for fathers ($t(45)=-2.67$, $p=.01$) and was present at the trend level for mothers ($t(102)=-1.83$, $p=.07$). **Conclusion:** Parent-child relationships often suffer in families of children with ADHD, and parents struggle to balance behavior management with maintaining a positive relationship with their children. The parent-child relationship may be a valuable target in the treatment and management of ADHD.

Abstract 64

Barriers to Diagnosis and Treatment of Autism Spectrum Disorder in Latino and White Non-Latino Families

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Purpose:To compare barriers to autism spectrum disorder (ASD) diagnosis and rates of service use among Latino and white non-Latino families. **Methods:**We surveyed parents of Latino and white non-Latino children with verified ASD diagnoses seen in at academic autism specialty clinics in California, Colorado, and Oregon. Families of children age 2-10 completed a mixed-mode survey in English or Spanish. Bivariate and multivariate analyses compared frequency of specific barriers to ASD diagnosis, total number of barriers, and rates of therapy service use among Latino families with limited English proficiency [L-LEP], Latino families with English proficiency [L-EP], and white non-Latino [WNL] families. **Results:**A total of 292 families (L-LEP: $n=77$, L-EP: $n=56$, WNL: $n=159$) completed the survey; response rate was 67%. The most frequent barriers experienced overall were "Diagnostic process stressful for family" (74.2% of families) and "Parent lacked knowledge about ASD" (72.2% of families). "Parent lacked knowledge about ASD" and "Parent did not know where to go for help" were more frequent among L-LEP compared to WNL families ($ps<.001$ and 0.04 respectively). ASD evaluation was expensive was more frequent among WNL families compared to L-LEP families ($p<.001$). Children in L-LEP families reported more barriers overall (8 vs 7; Adjusted Incidence Rate Ratio =1.21, $p=0.02$) and were also more likely to receive <1 hour of therapy per week compared to non-Latino families (26.8% vs 14.7%; Adjusted Odds Ratio: 2.88, 95% CI: 1.24-6.71). **Conclusion:** Children in L-LEP families experienced more frequent and different types of barriers to ASD diagnosis than children in WNL families, and were more likely to receive very little treatment for ASD. Interventions targeting specific barriers facing Latino families of children with ASD may hold promise for earlier diagnosis and effective treatment use.

Abstract 65

CLINICAL EXPERIENCE WITH THE BEHAVIORAL PHENOTYPE OF SEX CHROMOSOME ANEUPLOIDIES: ANALYSIS OF THE FIRST 1000 CLINIC VISITS TO THE EXTRAORDINARY KIDS CLINIC

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Purpose:One in 450 children are born with sex chromosome aneuploidy (SCA), a group of disorders defined by an atypical number

of X and/or Y chromosomes. SCA is significantly underdiagnosed, however patients present with a range of medical, developmental, and behavioral concerns. Identification of SCA is increasing with changes in prenatal and postnatal genetic testing methodologies and practices. The eXtraordinary Kids Clinic is an interdisciplinary clinic established to provide comprehensive and experienced care for children and adolescents with SCA. Here we report patient characteristics, presenting concerns, team diagnostic impressions, and patient satisfaction results after the first 1000 patient visits from Aug 2007 to March 2015. **Methods:**Data was collected from clinic logs and medical record review. Satisfaction surveys from 168 unique patients were analyzed. **Results:**Of all visits, SCA diagnoses included: 513 XXY, 110 XYY, 152 XXX, 109 XXYY, 51 XXXY, 34 XO, and 31 other variations. Median age was 11.8 (range 3 months-55 yrs). Of the 353 new patients, 49.8% were from out-of-state. The most prevalent presenting clinical concerns were academic problems (68.3%), behavior (62.5), and developmental delays (38.2%). Common indications for the 647 follow-up visits included psychopharmacologic (38%) or testosterone (32%) management, and infant developmental monitoring(16%). Language disorders and ADHD were the most frequent diagnoses (47.5 and 58%). There were important differences between SCA subtypes in the profile of presenting concerns and diagnoses. Satisfaction with the overall clinic visit was ranked as very satisfied in 85%, and as satisfied in another 9.8%. Survey results further detail specific benefits from the clinic experience, and the importance of a knowledgeable clinic coordinator. Waiting lists, lack of out-of-state community referrals, and timeliness of reports were areas identified for improvement. **Conclusion:**The eXtraordinary Kids Clinic is one model of care to address the complex neurodevelopmental phenotype of SCA showing high patient satisfaction. Further evaluation is needed to determine if this comprehensive approach indeed improves patient outcomes and/or quality of life.

Abstract 66

Impact of Physician Training and Prescribing Volume on ADHD Patients Being Educated About Stimulant Diversion and Misuse
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Purpose:To examine the relationship between physician (MD) prescribing volume and likelihood to educate ADHD patients on the legal consequences (LC) and health risks (HR) of diversion and misuse (D/M). **Methods:**A questionnaire focused on D/M was mailed to child neurologists, child psychiatrists, and developmental-behavioral pediatricians in the US. Only responses by MDs who currently prescribe SM (n=832) were included in the analysis. Physicians were categorized as low prescribers (LP) who currently prescribe SM to 1-10 patients, medium prescribers (MP), 11-30 patients, or high prescribers (HP), >30 patients. **Results:**40%, 29%, and 16% of LP, MP, and HP, respectively, do not feel adequately qualified to educate on the HR of stimulant misuse ($p<0.0001$), and 67%, 55%, and 38% respectively also do not feel adequately qualified to educate on the LC of diversion ($p<0.0001$). 69%, 59%, and 50% of LP, MP, and HP, respectively, do not often educate about HR of stimulant misuse ($p<0.0001$), and 69%, 57%, and 46%, also respectively, do not often educate about the LC of diversion ($p<0.0001$). There was no significant difference in the number of LP, MP, and HP who reported receiving training on D/M in medical school, residency, or continuing education programs, but a significant difference was detected in fellowship training ($p=0.037$). Significant positive correlations were found between perceived qualifications and the actual practice of educating on the health risks of misuse (LP: $r=0.43$, MP: $r=0.38$, HP: $r=0.25$; all $p<0.0001$) and legal consequences of diversion (LP: $r=0.61$, MP: $r=0.46$, HP: $r=0.45$; all $p<0.0001$). **Conclusion:** MDs who prescribe SM to fewer patients were less likely to feel qualified to educate patients on the HR and LC of D/M. This difference in perceived qualification may be attributed to differences in fellowship training. LP and MP were also less likely to educate patients on the HR and LC of D/M compared to HP. The analysis suggests that MDs' perceived qualifications might influence their likelihood to educate patients on D/M. It is important that all MDs, even those who only prescribe SM to few patients, receive adequate training on this issue. All ADHD patients must be educated on D/M, regardless of whether their doctor is a LP, MP, or HP.

Abstract 67

Diversion and Misuse of Stimulant Medication by ADHD Patients: Which Clinical Factors Are Most Concerning To Physicians?
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Purpose:To explore physician (MD) level of concern (LOC) of D/M of SM when treating ADHD patients with certain co-occurring clinical factors (CCF) and to determine if there are differences among pediatric subspecialists who treat ADHD. **Methods:**A questionnaire focused on D/M was mailed to 3 sub-specialties: all child neurologists (CN), child psychiatrists (CP), and developmental-behavioral pediatricians (DBP) in the US. Only responses by MDs who currently prescribe SM (total n=832; CN

n=106, CP n=579, DBP n=141) were included in the analysis. **Results:** MD LOC of D/M for ADHD patients with each CCF was calculated with 4=most concerned and 1=not concerned. The mean LOC (with standard deviation in parentheses) for each CCF are as follows, in rank order from most to least concerned: use of illicit drugs (ID): 3.80 (0.45), use of ID by other household members (HM): 3.70 (0.56), history of criminal behavior (CB): 3.69 (0.56), history of CB by other HM: 3.51 (0.65), conduct disorder (CD): 3.49 (0.70), alcohol use: 3.42 (0.72), and oppositional defiant disorder (ODD): 2.58 (0.81). Significant differences between subspecialists were noted for LOC for ADHD patients with co-occurring conduct disorder and oppositional defiant disorder. For co-occurring CD, 16% of CN were not concerned or only somewhat concerned about D/M, compared to 9% of both CP and DBP. For co-occurring ODD, 54% of CP, 40% of DBP, and 35% of CN were not concerned or only somewhat concerned. **Conclusion:** MDs had the highest LOC about D/M of SM when treating ADHD patients who themselves used ID or had a history of CB, or lived with HM with a history of ID use or CB. Although CN, CP, and DBP differed significantly on their LOC for ADHD patients with co-occurring CD and ODD, few other differences across disciplines were noted despite differences in their clinical training and patient mix.

Abstract 68

Timeliness of Autism Spectrum Disorder Diagnosis and Subsequent Use of Health Services

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Purpose: Little data are available regarding how delayed autism spectrum disorder (ASD) diagnosis correlates with subsequent service use. We assessed the relationship between age of diagnosis and delay in diagnosis with current use of autism-related health services, in a nationally-representative sample of elementary school-age children with ASD. **Methods:** The CDC's Survey of Pathways to Diagnosis and Services was used to assess the experiences of 722 children age 6-11 with ASD. Bivariate and multivariable logistic regression analyses assessed the association between age or delay in ASD diagnosis with current use of ASD-related services. Delay in diagnosis was defined as time between first parent concern and ASD diagnosis. Autism-related health services included current use of psychotropic medications, current use of intensive behavioral interventions (IBI), current use of complementary/alternative medicine (CAM), and current use of ≥ 1 school-based therapy. **Results:** Nearly half (44.8%) of children were diagnosed over age 5 (95% confidence interval [CI] 38.5%-51.3%), and 39.6% (CI: 33.3%-46.3%) experienced a diagnostic delay of ≥ 3 years. Diagnosis at < 5 years old was associated with higher likelihood of current school-based therapy use (adjusted odds ratio [AOR]: 2.21, CI: 1.12-4.35). A < 3 year delay in diagnosis was associated with lower likelihood of current CAM use (AOR: 0.40, CI 0.21-0.74). Likelihood of CAM use increased as delay got longer ($r^2 = 0.32$, CI: 0.08-0.56). Likelihood of psychotropic medication use increased with increasing age of ASD diagnosis ($r^2 = 0.38$, CI: 0.15-0.61). There were no significant associations between age of diagnosis or delay in diagnosis with current use of IBI. **Conclusion:** Both older age of diagnosis and longer delay in diagnosis were associated with different health services utilization patterns among elementary school-age children with ASD. Further research should clarify whether these utilization patterns are associated with differences in child functioning or outcomes.

Abstract 69

Body Mass Index Trends in Children with Attention Deficit/Hyperactivity Disorder Treated with Stimulant Medication

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Purpose: Children with Attention Deficit Hyperactivity Disorder (ADHD) are an at-risk group for elevated Body Mass Index (BMI). The purpose of this study is to examine the change in BMI over time in children on stimulants. **Methods:** A retrospective chart review was performed of all pediatric patients age 4-18 years old in the Children's Medicine Center with a diagnosis of ADHD between January 2006 and December 2011. ADHD diagnosis was identified using ICD-9 codes 314.00 and 314.01. BMI data were collected at initial and subsequent visits during the study period. Underweight is defined as BMI < 5 th percentile, normal weight 5th-85th percentile, overweight 85th-95th percentile, and obesity > 95 th percentile. A total of 373 patient charts were analyzed. We excluded patients who were neurologically compromised, had an additional psychiatric diagnosis, or did not have a height or weight documented. **Results:** Of the 373 patients, 309 met inclusion criteria. Two hundred eighty-two patients were on stimulants. The mean age at time of initial ADHD visit was 6.72 years. BMI was documented at the initial visit in 245 patients. Of those, 4 patients were underweight (1.6%), 133 were normal weight (54.3%), 48 were overweight (19.6%), and 60 were obese (24.5%). BMI was measured at one year in 151 patients. Of those, 141 patients had a change in their BMI percentile from baseline. One hundred two patients (67.5%) had a decrease in BMI percentile and 35 (23.2%) increased. At three years, BMI was measured in 110 patients; 102 had a change in BMI percentile from baseline. Sixty-four patients (58.2%) decreased BMI percentile from baseline and 38 (34.5%) increased. Overweight patients had the greatest decrease in BMI percentile (median decrease 24 percentile, $p=0.037$) and were significantly more likely to decrease their BMI when compared to normal weight children ($p=0.039$). **Conclusion:** The majority of children on stimulant medications in normal, overweight, and obese categories had a decrease in BMI from baseline at

both one and three years. Overweight patients were the most likely to decrease BMI on stimulants.

Abstract 70

Piloting an Intervention for Youth Repeatedly Hospitalized for DKA: Novel Interventions in Children's Healthcare (NICH)

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Purpose:The aim of this pilot study was to evaluate the feasibility of applying Novel Interventions in Children's Healthcare (NICH) to youth with type 1 diabetes who are repeatedly hospitalized for diabetic ketoacidosis (DKA). **Methods:**Twelve youth with type 1 diabetes were enrolled in NICH. NICH services included in-home treatment, 24-7 access to care, family-based problem solving, care coordination, and case management. The mean age of the youth was 14.0 years (SD = 3.1), and the mean duration of diabetes was 8.2 years (SD = 4.5). Chart reviews were conducted to examine changes in hospitalizations, days spent in the hospital, and HbA1c from pretreatment to posttreatment. **Results:**From pretreatment to posttreatment initiation, NICH participants demonstrated a significant decrease in DKA-related hospitalizations, from 0.46 (SD = .34) admissions per month to .11 (SD = .17) per month ($p < .05$), and in days admitted, from .58 (SD = .43) days per month to .22 (SD = .37) per month ($p < .05$). In addition, average youth HbA1c decreased from 11.6% (SD = 2.1) to 10.7% (SD = 2.0) over the course of treatment; although this finding was not significant ($p = 0.18$). **Conclusion:** This pilot work demonstrated that NICH is a promising intervention for reducing DKA-related hospitalizations in youth with type 1 diabetes. Changes in health and healthcare utilization are likely related to reductions in the cost of healthcare. Future research of this intervention will benefit from the use of a control group and random assignment to treatment conditions.

Abstract 71

The impact of motivational interviewing on parenting class attendance: a randomized controlled trial.

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Purpose:Parenting behaviors influence a broad array of pediatric outcomes, and parenting skills classes, such as the Incredible Years Series (IYS), improve parenting behaviors. However, fewer than 25% of families recruited to parenting skills classes will participate. Motivational interviewing is a brief therapeutic technique that may be an effective strategy for increasing participation in parenting skills classes. This randomized controlled trial tested the effect of motivational interviewing on parents' attendance at lessons of the IYS. **Methods:**In 2013-2015, 114 parents of 3- and 4-year-old children who were enrolled in Head Start preschool and randomized within an overarching study to participate in the Incredible Years Series lessons were randomized to receive either intervention (motivational interviewing) or control (attentional control) phone calls. Outcomes included 1) participant-stated intention to attend IYS lessons, 2) attendance at initial IYS lesson, and 3) number of IYS lessons attended. Statistical analysis included descriptive statistics, t-test, chi square test, and negative binomial regression, with clustering accounted for with mixed modeling. **Results:**Parents in the intervention group reported higher intention to attend lessons (4.1, SD 0.1) than those in the control group (3.5, SD 0.2). There was no difference in the proportion of parents who attended the first IYS lesson between the intervention group and the control group (52% vs 43%). Parents in the intervention group attended a greater number of lessons (1.6, SD 0.3) than parents in the control group (0.9, SD 0.2). Total number of lessons attended was low; the total range of lessons attended in the intervention group was 0 to 10 and in the control group was 0 to 7. **Conclusion:** This is the first evidence that motivational interviewing increases attendance at preventive parenting skills classes. The effect size was small and questions remain regarding the practical effectiveness of this intervention.

Abstract 72

"Fetal Alcohol Spectrum Disorders: A Pilot Study Exploring Parental Experiences and an FASD Education Program"

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Purpose:The study aimed to better understand the experience of parenting (stress, depression, parenting strategies, parental efficacy, view of child's behaviors) for parents raising a child diagnosed with a Fetal Alcohol Spectrum Disorder and to explore the utility of an abbreviated FASD Education program. **Methods:**We recruited 2-11 year old children through the Weisskopf Child Evaluation Center located at the University of Louisville School of Medicine. To be eligible, the children should have previously been evaluated by trained clinicians and found to meet criteria for Neurobehavioral Disorder (Alcohol Exposed), one of the Fetal Alcohol Spectrum Disorders. Once informed consents were obtained, parents completed questionnaires about parenting stress and child behavior. After this,

they participated in the FASD Education Program which showed how FASD can affect the brain and how this related to the child's development and behavior. Following this, parents were given a booklet titled All About Me to complete about their child to provide an opportunity for parents to gain a perspective of their child as an individual with a unique profile of personal strengths and challenges. **Results:** Thirty-one families with children between 2 and 11 years of age participated. Parents reported elevated stress associated with parenting and elevated depression symptoms, a pattern of normative parenting strategies, and high ratings of parental efficacy and satisfaction. Parents rated their children as exhibited very high levels of problematic behaviors with high cores on intensity and severity. The FASD Education Program was rated as highly positive and applicable to family life. One year later, parents re-evaluated the utility of the FASD Education Program and provided a second measure of parenting stress and child behavior ratings. Parents stress associated with parenting remained very high. Parent ratings of problematic child behaviors showed a slight but significant decrease in both intensity and severity. **Conclusion:** Findings suggest that focusing on parent education regarding specific neurocognitive deficits and resulting social emotional behavior problems may have particular value for parents of children diagnosed with FASD

Abstract 73

Examining Barriers to Early Identification of ASD in Immigrant Pediatric Primary Care Patients

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Purpose: Immigrant-non-immigrant disparities in age at autism spectrum disorder (ASD) diagnosis may be modified by primary care pediatrician (PCP) practices and beliefs. The objectives of this study were to assess ASD and developmental screening practices, attitudes toward ASD identification in immigrant children in Colorado, and barriers to ASD identification for immigrant children, in a sample of 100 PCPs. **Methods:** In PCP survey, we assessed rates of general developmental and ASD screening, perceptions of parent ASD knowledge in Immigrant and non-immigrant families, reports of difficulty assessing for ASDs in Immigrant-non-immigrant children, and perceptions of barriers to early ASD identification for immigrants. **Results:** Although 76% of PCPs offered some form of developmental screening, most PCPs thought that immigrant parents were less knowledgeable about ASDs than non-immigrant parents. PCPs had more difficulty assessing ASD risk for immigrant children than for non-immigrant children, even when the PCP conducted recommended ASD screening. **Conclusion:** Multiple factors in the primary care setting may contribute to delayed ASD identification for immigrant children. Promoting language-appropriate screening, disseminating culturally appropriate ASD materials to immigrant families, improving the specialist workforce, and providing PCP support in screening and referral of immigrant children may be important ways to reduce racial and ethnic differences in care.

Abstract 74

Brigance Preschool Screen II and neurocognitive functioning among young patients with sickle cell disease

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Purpose: Sickle cell disease (SCD) is a chronic multisystem condition that includes neurologic sequelae associated with neurobehavioral problems. Little is known about the clinical utility of developmental screening measures in children with SCD. We examined how performance at 3 years of age on a developmental screening measure (Brigance Preschool-Screen II [Brigance]) correlated with neurobehavioral functioning evaluated approximately two years later in a cohort of children with SCD. **Methods:** Fifty-one children with SCD were administered the Brigance at a mean age of 3.3 (SD=.3) years and subsequently received a neurobehavioral evaluation (e.g., cognitive, pre-academic, parent report measures) at a mean of 5.2 (SD=1.1) years. Neurobehavioral evaluations were performed because of clinical concerns or as part of local standard of clinical practice. Due to unequal sample sizes, the nonparametric Mann-Whitney U test was used to compare patients who failed the Brigance with those who passed. **Results:** Thirty-nine children (76.4%) failed the Brigance. These children had lower Wechsler IQ scores (M=79.7 vs 96.8; U(48)=41.50, Z=-4.24, p <.01) and worse pre-academic skills (Bracken School Readiness Assessment; M=82.2 vs 105.4; U(36)=2.50, Z=-4.40, p <.01) compared to those who passed. On questionnaire ratings of executive functions (Behavior Rating Inventory of Executive Function-Preschool Version), caregivers of children who failed the Brigance reported more concerns about their child's working memory ability compared to concerns reported by caregivers of those who passed (M=61.0 vs 50.7; U(40)=89.80, Z=-2.32, p =.02). **Conclusion:** Three-quarters of children with SCD failed the Brigance, and those who failed had lower IQ scores, worse pre-academic skills and more parental concerns regarding working memory ability. In young children with SCD, Brigance screening may be a useful early screening tool to identify children at risk for compromised neurologic development.

Abstract 75

Maternal, Prenatal, and Early Life Risk Factors for Autism

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Purpose:Autism spectrum disorders (ASD) are increasing in prevalence, however the cause remains unknown. An interplay between genetic and environmental factors is believed to impact risk, with the pre and perinatal periods understood to be especially important. We sought to examine the impact of maternal and child issues during pregnancy, birth and the first 90 days of life on the diagnosis of ASD. **Methods:**8,771 children diagnosed with ASD were matched to three controls by birthdate and gender. Maternal health records for one year preceding the birth of the child, birth records, and child health records for the first 90 days of life were extracted from the military health system database. Hierarchical logistic regression calculated odds of autism by 14 maternal, 4 birth and 7 child factors. **Results:**Of the 25 included factors, there were 8 maternal, 3 birth, and 4 child level factors significantly associated with ASD diagnosed after the age of two. Significant factors that were most common were labor and pregnancy complications impacting 65% and 67% of included mothers respectively. Maternal (0.6%) and fetal (0.8%) epilepsy were the least common of factors examined. ASD was most highly associated with seizure in the first 90 days of life (OR 8.23 (6.20-10.94)) followed by maternal mental health diagnoses (OR 1.50 (1.41-1.60)), epilepsy (OR 1.36 (1.01-1.84)), and obesity (OR 1.26 (1.15-1.38)). **Conclusion:**Multiple maternal and child factors are associated with an increase odds of developing ASD. The highest increased risk was associated with newborn epilepsy suggesting that seizures early in life may be the earliest indicator of ASD.

Abstract 76

Can we promote early literacy in the well child nursery?

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Purpose:Identify interventions for at-risk mothers promoting early literacy. Reading with children strengthens parent-child relationships & builds language, literacy & social-emotional skills lasting a lifetime **Methods:**300 Medicaid insured mothers in the nursery were enrolled in a study of educational materials & completed a baseline interview. Mothers were randomized to 1 of 2 interventions, each with a bilingual DVD & booklet. Half received the Ready to Learn (RTL) intervention on the benefits of reading, talking & playing with young children & a bilingual board book; half received the All Babies Cry (ABC) intervention on crying as nl infant behavior, signs of parent distress & strategies to sooth parents & infants. 80 RTL & 77 ABC mothers spoke Spanish at home; the rest spoke English but not Spanish. 245(82%) were contacted by phone for re-interview when infants were 60-180 do. Only 115(38%) reviewed the materials & completed the interview (53 RTL/62 ABC). F/u mothers were more likely immigrant (54% v. 34%, p=0.001) & interviewed in Spanish (31% vs. 13%, p<0.001)**Results:**Enrollment-mothers were well matched: 27.4(5.5)yo, parity 2.2(1.2), 70% married/LTG, 40% employed, 15% students, 25% < HS, 34% HS/GED, 41% >= 1yr college/voc, 49% Hispanic, 12% NHB, 27% NHW, 12% Other. 20% interviewed in Spanish, 41.7% immigrant. At f/u infants in both groups were similar in age 94.5 (28.4) do, reading with adults 84%, children's books/home [17.2(15.2) v. 18.4(18.4)], reading [(3.6 (2.9) v. 3.4 (2.9)] d/wk. More RTL Mothers said a favorite activity was reading together (34% v. 14.5%, p<0.05) & reading together was a favorite activity for baby (17% v. 4.8%, p<0.05). RTL fathers read more to their babies than ABC fathers (41.5% v. 22.6%, p<0.05) **Conclusion:** This simple intervention was well accepted but underutilized by at-risk mothers. Few mothers viewed materials provided in the hospital w/o significant encouragement from investigators. At f/u most mothers were reading with their babies. Though the intervention did not significantly affect how often mothers read with infants, it increased their enjoyment of this & fathers' reading with infants. Fathers may find it difficult to connect with babies & shared reading offers an opportunity to bond with them from the start. The AAP has recommended parents read, talk & sing with infants beginning at birth & this work demonstrates that very young mother-child dyads can & do enjoy shared reading

Abstract 77

Improving the Medical Academic Curriculum to Gain Increased Understanding of the Needs of Families of Children with Exceptionalities (IMAGINE)

Jacqueline M. Kaari, DO, Pediatrics, Rowan University School of Osteopathic Medicine, Sewell, NJ, Mary E. Sheppard, MS/MA, Nancy A. Vitalone Raccaro, PhD, Language Literacy and Special Education, Rowan University, Glassboro, NJ

Purpose:This presentation will include the pre and post implementation results from the pilot of new medical school course material that focused on collaborating with families and school personnel. The focus will be on how the course material was developed, key components of the instructional materials, measures of student progress and future directions for the

study. **Methods:** The presenters developed and piloted new course material for 2nd year medical students at a school of Osteopathic Medicine located in the North East with a goal of increasing physicians knowledge of families of children with special needs and special education practices in order to improve collaboration. Data collected to inform this project included both parent and physician perspectives, and a pretest of student knowledge of disability and special education. The medical students completed an on-line class module about disability and special education, attended a panel discussion with parents of children with disabilities and participated in a follow-up, online discussion about the experience. **Results:** A sampling of the percentage of participants responding correctly on the pre and post survey are as follows: Each Child With a Disability must have an IEP Pre-16.3% Post-23.5% Each child with an IEP should receive special education services in a separate classroom Pre-27.6% Post-41.2% A physician's prescription for an IEP mandates the school to develop and IEP for a child Pre-15.3% Post-29.4% In order for a child to relieve early intervention services they must have an identified disability Pre-13.3% Post-23.5% An IEP and 504 plan afford a child with disabilities the same level of legal protection Pre-16.3% Post-23.5% . Open ended discussion questions are also in the process of being analyzed. **Conclusion:** The on-line module served as a foundation upon which students were able to build and increase their knowledge about children with learning disabilities and special education. The parent panel was able to give these concepts a voice that solidified this information in the minds of the medical students. This intervention was successful in increasing medical student knowledge, awareness and modeling the positive effects of collaboration between doctors, families and school personnel for families of children with special needs.

Abstract 78

Telemedicine Service Location Planning Using Patient Geographic Information Systems Data

Neelkamal S. Soares, MD, Pediatrics, Geisinger Health System, Lewisburg, PA, Joseph J. Dewalle, BS/BA, Environmental Health Institute, Geisinger Health System, Danville, PA, David Marsh, PhD, Geography and Environmental Studies, Bucknell University, Lewisburg, PA

Purpose: Telemedicine can improve access for children in rural areas with developmental and behavioral problems to developmental-behavioral pediatric (DBP) specialists. Use of Geographic information systems (GIS) to map residential addresses of patients stored in electronic health records (EHR) has been limited by confidentiality concerns, and previous studies involving DBP and GIS involved the analysis of past utilization, but never a prospective service planning effort. **Methods:** Approved by Institutional Review Board, data was accessed through EpicCare for all patients receiving DBP care between 01/01/2011 and 12/31/2012 at an integrated health system. Patient demographics (age, gender), primary insurance, primary visit diagnosis, home address, and clinic location where encountered were extracted. Geocoding home address and clinic locations was done, and identification of telemedicine sites providing optimal access to the present patient population from feasible facilities in groupings, calculating an average travel distance (ATD) for all patients to the closest site. **Results:** A total of 4027 visits from 2049 unique patients included 304 unique primary diagnosis codes. The best travel distances for site groupings of 3, 4, 5, or 6 site locations revealed that the ATD differed between sequentially ranked groups by only 21 miles. Patient balance by site for best groupings yielded four optimal sites. Highly concentrated geography of patient distribution created uneven pattern of site usage, yet the majority of the best site groupings used the same small number of sites. Many of the potential selections of sites were very similar in ATD. Overall, the best site groupings for ATD were also better for patient balance. Adding one site to the grouping size shifting from 3 sites to 4, etc. decreased ATD by only 8%. **Conclusion:** The EHR of an integrated healthcare system can yield patient spatial data which, using GIS methods, can assist healthcare location planning. A limited number of sites can be modeled to deliver relatively equitable spatial access to a population for a particular service. Future directions include reassessing access and utilization with the deployed telemedicine locations over a further 2-year period.

Poster Session 2

Monday, October 5, 2015 from 1:15 pm – 2:15 pm

Cohiba 6-7

Abstract 79

Non-compliant Behavior During Audiometry as a Risk Factor for Autism Spectrum Disorder

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Purpose: Young children with delayed language acquisition are often referred to an audiologist as part of a comprehensive evaluation. Some of these children are eventually diagnosed with autism spectrum disorder (ASD). This study aimed to evaluate child behavior during audiometry as a distinguishing factor for eventual ASD diagnosis. **Methods:** Our retrospective cohort study reviewed 981 children 18 to 71 months old referred to pediatric audiology for language delay between January 2006 and March 2010. Subjects were excluded if they did not attain a minimum duration of care (2 years) or age (5 years) after audiometry, or had a preexisting ASD diagnosis, used hearing aids or cochlear implants, had craniofacial abnormalities, history of head/ear trauma, or ototoxic medication exposure. This resulted in 296 qualifying subjects. Non-compliance was defined as inability to follow instructions or complete tasks during the evaluation. A multivariate logistic regression model was performed to evaluate non-compliance as a predictor for ASD diagnosis adjusting for gender and age. **Results:** Non-compliant children with language delay had 5 times higher odds of eventual ASD diagnosis than compliant peers (see table). With regard to non-compliance as a risk factor for ASD, negative predictive value was 93.9%, positive predictive value was 26.9%, sensitivity was 56.3%, and specificity was 81.4%. **Conclusion:** Children with language delays showing non-compliant behaviors during audiometry are more likely to receive an ASD diagnosis than compliant peers. Identifying these behaviors during hearing evaluation for language delay may help early recognition of increased risk for ASD.

	Compliant (n=229)	Non-compliant (n=67)	OR (95% CI)
Male, n (%)	163 (71.2%)	49 (73.1%)	
Age (months), mean (SD)	38 (15)	39 (11)	
ASD, n (%)	14 (6.1%)	18 (26.9%)	5.64 (2.47-12.98)

Abstract 80

Feasibility of Pediatric Resident Screening Curriculum on Developmental Rotation

Sabrina Eliason, MD, Debbi Andrews, MD, Keith Goulden, MD, Sheila Gallagher, PhD, Florencia Ricci, MD, Cara Dosman, MD, Pediatrics, University of Alberta, Edmonton, Alberta, Canada

Purpose: Developmental screening is an important skill for pediatric care; however, few programs include screening curriculum and there is little published on how to implement such a curriculum. We studied implementation of a new developmental screening curriculum and its effect on resident attitudes and behaviors towards screening instrument use. **Methods:** General Pediatric (GenPeds) residents received didactic sessions on using a validated screen, managing positive screens and providing families with information on community resources. The Parents Evaluation of Developmental Status (PEDS) and Parents Evaluation of Developmental Status Developmental Milestones (PEDS:DM) were the validated screeners used in this study. Residents then attended a Screening Day during their Developmental Pediatric (DP) rotation in a GenPeds clinic for high volume practice. Residents recorded volume and results on a Log Sheet. Attitudes about screening were noted during resident interviews and on mid-curriculum Surveys. **Results:** Over four years (April 2011-December 2014), 41 residents participated and screened a total of 475 children. Mean screens per resident was 14 PEDS (range 3-27). Mean number of PEDS:DM per resident was 2.4 (range 0-9). The curriculum was experienced by residents as overall positive, with improved knowledge of community resources, and acted on feedback leading to screening opportunities throughout the Program. The main obstacle to screening, short waiting room time, resolved with scheduling adjustments. **Conclusion:** Integrating screening education into GenPeds residency during the DP rotation was feasible, ie residents were able to complete, score and interpret a base number of screens, and highly acceptable to residents. Strong core teaching from DP educators in conjunction with massed practice in community GenPeds clinic was successful in developing a developmental screening curriculum for pediatric residents.

Abstract 81

Gestational age dependent specific neurodevelopmental outcomes in preterm infants with improved growth

Jennifer K. Poon, MD, Amy Ruddy, BS/BA, Myla Ebling, BS/BA, Lakshmi Katikaneni, MD, Pediatrics, MUSC, Charleston, SC

Purpose:Extrauterine growth restriction and prolonged ventilation affects neurodevelopmental domains (NDD) in preterm infants (PTI). Improved growth and ventilation strategies may improve specific NDD (i.e. gross motor, cognitive/problem solving, language). We assess influence of improved growth on specific NDD in PTI without neuropathology (IVH grade III/IV, PVL, severe ROP, surgical NEC). **Methods:** PTI (N=484) >72 months (2008-2013) were followed for growth and early development (4-9 mo) and divided based on gestational age (GA-wks) those <26 (Gr A=48) and those 26-33 (Gr B=436). NICU stay variables included birth weight (BW), GA, Ventilator days (VT), length of stay (LOS), IV nutrition days (IVN). Follow-up growth variables and Developmental Quotients (DQ) for Cognitive (CAT), language (CLAMS) were obtained by Capute scales and gross motor (GM) by modified Peabody for adjusted age. Body fat% was measured in 27% of PTI by noninvasive air displacement plathysomography (PeaPod Cosmed) close to follow-up. Student T test, Chi Square and ANOVA were used with $p < 0.05$ as significant. **Results:** Gr A and B differed significantly in BW, GA, LOS, VT, LOS, IVN. Both groups had similar growth rates for WT (gm/kg/day), height (Cm/day), HC (Cm/day) from Birth to follow-up, and DQ in all of the domains. However, weight related significant improvements in NDD were GA specific. In Gr A weight gain significantly improved cognitive development ($p < 0.0419$) with trend for language ($p < 0.07$). In Gr B weight gain significantly improved language ($p < 0.0001$) and a trend for cognition ($p < 0.09$) and gross motor ($p < 0.059$) - no correlation was found between body fat% and weight gain. **Conclusion:** Implementation of nutritional support and aggressive ventilation strategies resulted in similar growth in <26 wks and 26-33 wks PTI. However, growth effect on ND Domains was GA specific with selective cognitive improvement in <26 wks and language in 26-33 wks preterm infants. Long term follow-up is planned for this group.

Abstract 82

Impact of Autism Navigator on Access to Services

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Purpose: To determine in a multidisciplinary autism diagnostic clinic if access to support from an Autism Navigator (AN) would lead to more appointments with recommended services. **Methods:** Participants included 39 children diagnosed with ASD in a clinic for children <4 years of age who failed the M-CHAT. Patients were randomized to 4 groups: Medicaid (M) early support (n=9) or late support (n=9) and non-Medicaid (non-M) early support (n=11) or late support (n=10). Early support was defined as access to the AN at the family meeting and later support was defined as access at 3 months after diagnosis. Data was obtained at 3 months post-diagnosis via phone interview about the usefulness of the evaluation and caregivers desire/ability to obtain services. We analyzed both the usefulness and the number of successes/number of recommendations using two-way factorial ANOVAs for independent samples. **Results:** There were no differences between the groups in demographics. The participants were most frequently male (82.1%), white (71.8%), and non-Hispanic (92.3%), with a mean age of 35 months. The M group more often endorsed the aspects of the assessment as being "A Great Deal" more useful than the non-M groups ($p = .027$). We analyzed the data on new recommendations with scheduled or completed appointments. The early support group was more successful with scheduling or completing appointments for total services ($p = .031$). In addition, barriers to obtaining recommended services were reported by 35.9% and most frequently in genetic laboratory tests and genetic visits. **Conclusion:** Caregivers of young children with M with a recent diagnosis of ASD more often found the assessment "A Great Deal" useful compared to caregivers in the non-M group. The groups with early support from an AN were more successful in scheduling and completing appointments.

Abstract 83

Assessing Community Participation among Children with Developmental Disorders: Analysis of the 2011-2012 National Survey of Children's Health

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Purpose: The AAP recommends that pediatricians advocate for the participation of children with disabilities in sports and recreational activities, in order to promote physical mobility, community inclusion, and overall well-being. However, the rate at which children with developmental disorders (DD) participate in community-based activities (CBA) has not previously been examined in a nationally-representative sample. **Methods:** Data from the 2011-12 National Survey of Children's Health, a nationally representative survey, were analyzed. Children were classified as having a DD if their parents indicated they had been diagnosed with intellectual disability, developmental delay, or an autism spectrum disorder. CBA participation was assessed based on parental report of involvement in sports, after-school clubs, and organized activities within the last year. After children under age 6

were excluded, the analysis included data from 65,663 respondents, 4.8% (n = 3,139) of which were classified as having 1 or more DD. **Results:**Overall, the rate of participation in any CBA was 68.5% in children with DD, compared to 86.2% in the non-DD sample. Children with DD were significantly less likely than those without DD to have participated in sports (OR .407, 95% CI: .348 - .476), after-school clubs (OR .560, 95% CI: .478 - .654), and other organized activities (OR 0.555, 95% CI: .466 - .661) in the last year. Among children with DD, the presence of one or more comorbid conditions was associated with decreased odds of participation in any CBA (OR .863, 95% CI: .804 - .926). Specifically, the presence of a comorbid speech or language disorder (SLD) was associated with a decreased likelihood of CBA participation (aOR .489, 95% CI: .351-.651), whereas emotional-behavioral (EBD) comorbidities did not have a significant effect (aOR 1.220, 95% CI: .707-2.104). **Conclusion:** Children with DD -- especially those with SLD comorbidities -- are less likely than their typically-developing peers to participate in CBA. Addressing this disparity is important to promoting the physical and emotional health of children with DD.

Abstract 84

Prosocial behavior and influenza vaccination

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Purpose:Influenza vaccination is an important means of disease prevention. Little is known about the association between prosocial disposition and influenza vaccination. This study assessed prosocial disposition among adolescents and their parents and subsequent influenza vaccination. **Methods:**In a randomized controlled trial, adolescents (11-17 years old) and their parents were recruited as dyads September-December 2013 at two academic medical centers and a private practice. Both groups completed surveys including prior vaccine behavior, prosocial disposition, and influenza vaccine uptake. The control group completed the survey after the visit; the intervention group began the survey prior to the physician visit, which served to prime them toward prosocial behaviors, i.e. vaccination. Prosocial disposition was measured with a modified version of the Questionnaire of Cognitive and Affective Empathy. Multivariate logistic regression models were used to identify predictors of vaccination. **Results:**122 dyads completed questionnaires; 67 in the intervention arm, and 55 in the control arm. There were no differences between groups. Empathy scores were higher among parents than adolescents. A total of 65% of adolescents who were offered the vaccine accepted it, with no significant difference in uptake between intervention and control groups. In bivariate analyses total empathy scores did not differ significantly between vaccinators and non-vaccinators, but parents with higher affective empathy were more likely to vaccinate their child ($p=0.06$). Adolescents (OR=3.21 (1.00, 10.29)) and parents (OR=8.87 (1.97, 39.97)) who agreed that vaccination helps prevent sickness in others had higher odds of vaccination. In multivariate analyses, previous influenza vaccination was the strongest predictor of current vaccine uptake. **Conclusion:** Results suggest a possible role for empathy and public health awareness in vaccine decisions among adolescents and parents. Confirmation of these preliminary findings in a larger sample will be important to better understand the association between prosocial disposition and vaccine behavior.

Abstract 85

Use of Transition Planning Resources by Primary Care Providers for Adolescents with Intellectual and Developmental Disabilities

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Purpose:To investigate the use of resource information provided to primary care providers (PCP) to aid the health care transition of adolescents with intellectual and developmental disabilities (IDD). **Methods:**Quality Improvement project with 6 three-month Plan-Study-Do-Act (PDSA) cycles. Adolescents with an IDD are referred from providers from Denver metro region to be seen in a Transition Clinic. At the clinic, transition readiness is assessed and action plan formulated for family and PCP. Family and PCP receive an After Visit Summary (AVS) with recommendations, Portable Medical Summary and Transition Roadmap. Telephone survey conducted with PCP after clinic assessing use of resources. **Results:**Results are from the first 3 of 6 PDSA cycles. N= 24 primary care providers. 19 of 24 read the AVS and Transition Roadmap. 10 of 24 initiated at least one core element of transition. 17 of 24 found at least 1 recommendation useful. 3 of 24 found at least 1 recommendation impractical/not useful. 14 of 24 found the non-medical resources useful. Qualitative responses cited lack of adult providers, time constraints, lack of knowledge on transition process/resources, length and formatting of materials sent from the Transition Clinic and resistance from families as barriers to engaging in the transition process. **Conclusion:**The following changes were made after the first 3 PDSA cycles: shortening the AVS, not including the readiness assessments in the initial packet of resources; pre-clinic letter sent the week of the Transition Clinic appointment to the providers office informing of the clinic and follow-up survey; revising portable medical summary that is made available as soft copy for families and providers. Lessons from the first 3 PDSA cycles: the need to partner with an adult provider,

time constraints, poor knowledge of process, required vetted interests in all parties and possibility that PCPs office may not be the best setting for transition in IDD population.

Abstract 86

Active commuting to school (ACS) and behavior problems

Mana Mann, MD, Ellen J. Silver, PhD, Ruth E. K. Stein, MD, Pediatrics, Albert Einstein College of Medicine, Bronx, NY

Purpose: Mental health and behavior problems occur in 10-20% of children worldwide and pose a significant burden for individuals, families, and communities. Few epidemiologic studies have examined the role of ACS and other physical activity as potential contributors to behavior. **Methods:** We conducted secondary data analyses to assess the association of ACS and other physical activity with child- and teacher-reported behavior problems among 3rd grade students enrolled in the Early Childhood Longitudinal Study, Kindergarten Class (1998-99). Children were categorized as active commuters if they walked to school and passive commuters if they took the bus or were driven to school. Physical activity measures included participation in recess, physical education, individual and team sports. **Results:** Complete data were available for >10,118 children, 11% ACS. ACS children were more likely to be Black (16% vs. 11%) or Hispanic (30% vs. 19%); be from families with lower parental education (34% vs. 19%), with household incomes <\$30,000 (46% vs. 29%); attend schools in large cities (55% vs. 35%) and attend public school (93% vs. 79%) (all $p < 0.05$). Children who did ACS had higher levels of self-reported and teacher-reported internalizing and externalizing behavior problems. Multivariate analyses using a general linear model found no significant difference in behavior problems among active and passive commuters. Participation in a sports team was found to have had a small association with child-reported externalizing ($\beta = -0.04$, $p = 0.03$), child-reported internalizing ($\beta = -0.05$, $p = 0.02$), and teacher-reported internalizing ($\beta = -0.08$, $p = 0.0001$) behavior problems. Recess participation was associated with child-reported internalizing behavior problems ($\beta = -0.1$, $p = 0.04$). **Conclusion:** This study suggests that ACS is not associated with behavior, but supports the role of physical activity both during and outside school hours and its relationship with behavior. Further studies to characterize physical activity and its association with behavior among school-aged children should be considered.

Abstract 87

Relations of Feeding Problems to Maternal Anxiety and Feeding Strategies in Children with and without Autism Spectrum Disorder

Kimberly Zlomke, PhD, Jillian Murphy, MS/MA, Psychology, Keri Mallicaot, BS/BA, Biomedical Sciences, Hanes Swingle, MD, Pediatrics, University of South Alabama, Mobile, AL

Purpose: For mothers of children with autism spectrum disorder (ASD), mealtimes can be stressful and disruptive. Food selectivity is present in up to 80% of children with ASD and can result in restricted diets and dysfunctional mealtime behavior. Previous research suggests that maternal anxiety may contribute to children's feeding issues. The objective of the current research was to determine whether mothers' trait anxiety is related to maternal feeding strategies and children's feeding problems in children with and without ASD. **Methods:** 118 mothers of children ages 2-8 (mean=4.8 years; 64% male) completed the Behavioral Pediatric Feeding Assessment (BPFA) scale and the State-Trait Anxiety Inventory (STAI) during visits to an autism clinic ($n=58$) and a general pediatric clinic ($n=60$). Sample means on all administered measures were in the normative range for both groups, with the exception of the parent frequency scale of the BPFAS for ASD the group. **Results:** Mothers of children with ASD reported that their children had more frequent feeding issues than those of comparison children $t(113)=4.2$, $p < .001$. Mothers of children with ASD ($m=40.7$) also reported significantly higher trait anxiety (34.2), $t(102)=2.9$, $p < .005$. Mothers of children with ASD reported employing dysfunctional feeding strategies/approaches significantly more frequently $t(113)=4.2$, $p < .001$, as well. Significant positive correlations were revealed between parent dysfunctional feeding strategies and maternal anxiety for both the ASD ($r=.37$, $p < .01$) and comparison ($r=.35$, $p < .05$) groups. **Conclusion:** These findings suggest that maternal anxiety relates to increased use of dysfunctional feeding strategies. The implications for these dysfunctional parent feeding strategies may be even more pronounced for children with ASD, and should be investigated further. Future research should examine longitudinal relations between maternal anxiety, feeding strategies, and children's feeding problems, as bi-directional relationships are likely present. Treatment strategies for food selectivity in ASD may need to address maternal anxiety and feeding strategies.

Abstract 88

Parent Self-Reported and Observed Mealtime Behaviors Related Healthier Eating

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Purpose:Parents with children with Autism Spectrum Disorder (ASD) often report feeding problems and behavioral concerns during mealtimes, which may impact nutritional intake. Prior research has used parent-reported mealtime behaviors; however, direct observation of parent behavior during mealtimes could better inform future feeding interventions. This study evaluated whether self-reported and observed parent mealtime behaviors are associated with an index of healthy eating. **Methods:**35 children with ASD (mean age = 5.77, 71.4% male, 54.3% white) and their parents participated. Dimensions of self-reported parent mealtime behaviors were measured using The Parent Mealtime Action Scale (PMAS). Healthy Eating Index (HEI-2010) score averaged across a three-day diet diary was used to evaluate diet quality. The Dyadic Interaction Nomenclature for Eating (DINE) was used to evaluate observed parent behaviors during a typical home mealtime. Pearson correlations were used to evaluate the association between HEI-2010 scores, PMAS dimensions, and DINE parent behaviors. **Results:**Correlations revealed that the PMAS dimension of Daily Fruit and Vegetable Availability was associated with greater HEI-2010 score ($r=.428, p=.010$); this relationship held with each item within the dimension, such that greater HEI-2010 score was associated with You gave the child fruit each day ($r=.383, p=.023$), You ate fruit each day ($r=.335, p=.049$), and You ate vegetables each day ($p=.357, p=.035$). Greater HEI-2010 score was also related to several DINE parent behaviors: Beta (interrupted) commands ($r=.407, p=.015$), Reinforcement ($r=.354, p=.037$), and Total commands ($r=.365, p=.031$). **Conclusion:** In children with ASD, parent self-reported behaviors of providing availability of fruits to the child, and parent eating of fruits and vegetables are related to healthier eating. Additionally, observed parent behaviors of greater number of total and interrupted commands and reinforcement during a meal are related to healthier eating. Treatments should focus on improving eating habits of the whole family and increasing interaction between parent and child.

Abstract 89

Psychotropic Medication Use in Children with Autism Spectrum Disorder ages 2-18 years old in a Nationally Representative Sample: 1994-2009

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Purpose:In a U.S. nationally representative sample of pediatric visits from 1994-2009, we: 1. Determine rates of psychotropic use in children with ASD, and 2. Determine if these rates vary by sociodemographic factors, comorbid conditions, and time period. **Methods:**Data for children aged 2-18 years ($N=158,488$) from the 1994-2009 National Ambulatory and National Hospital Ambulatory Medical Care Surveys was used. We calculated rates of using any psychotropic medication among children with ASD for the sample overall, and in specific socio-demographic groups and time intervals (4-year blocks). Multivariate logistic regression was performed to identify predictors of psychotropic use in children with ASD. **Results:**Although psychotropic prescription rates at visits for children with ASD increased from 45.2% (95% CI 30.9-59.4) in 1994-97 to 58.3% (95% CI 49.6-66.9) in 2002-05, in adjusted analyses 4-year time period was not associated with psychotropic use, nor were gender, race, health insurance status, or demographic region. Among children with ASD, the likelihood of psychotropic use was higher in school-age children and teenagers (vs. preschoolers), and in those with another behavioral diagnosis (vs. those with no comorbid behavioral diagnosis), while those with comorbid intellectual disability (ID) or developmental delay (DD) (vs. those with no ID/DD) were less likely to receive psychotropics. **Conclusion:** Between 1994-2009, children with ASD comorbid with another behavioral diagnosis were more likely to use psychotropics, while preschoolers and those with a comorbid ID/DD were less likely to receive psychotropic prescriptions. We did not observe main effects of race, sex, health insurance status, or 4-year time period on psychotropic use in children with ASD. However, further research is needed to better understand if these factors interact such that changes in psychotropic medication use over time vary by sociodemographic group in children with ASD.

Abstract 90

Is Speech-Language Impairment a Risk Factor for Math Learning Disability? A Population-Based Cohort Study

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Purpose:We compared risk of math learning disability (MLD) in children with/without speech-language impairment (S/LI) and with/without reading disability (RD) in a population-based birth cohort. **Methods:**Subjects included members of the 1976-1982 Rochester, MN birth cohort ($N = 5718$). S/LI ($N=294$) was determined by eligibility criteria for an individualized education plan. Incident cases of MLD and RD were identified by research criteria using 3 formulas applied to cognitive/academic tests. Cumulative incidence was estimated using the Kaplan-Meier method. Cox regression models were fit to estimate the association between S/LI and MLD. **Results:**Children with S/LI were 5.7 times more likely to meet MLD criteria than children without S/LI (hazard ratio [HR] 5.68; 95% CI, 4.77-6.76). Among children who met RD criteria ($N=684$), incidence of MLD by age 19 was 80.3%; however, children

with RD and S/LI were not at increased risk for MLD compared to children with RD without S/LI (HR, 1.09; 95% CI, 0.90-1.33). Among children without RD (N=5010), the incidence of MLD by age 19 was 6.0% and those with S/LI had an increased risk of MLD compared to children without S/LI (HR, 5.09; 95% CI, 3.45-7.50). Overall, the magnitude of association between S/LI and MLD was significantly higher for girls than boys (a gender by S/LI interaction effect: HR, 8.47 vs 4.28; $p < 0.001$). Among children with RD, there was a significant association between S/LI and MLD for girls, but not boys (HR, 1.43 girls; 0.97 boys; $p = 0.07$). For children without RD, both boys and girls with S/LI had increased risk of MLD compared to boys and girls without S/LI (HR, 6.09 girls; HR, 4.43 boys; $p = 0.47$). **Conclusion:** Risk for MLD was increased among children with S/LI compared to children without S/LI in this population-based birth cohort, even for children with S/LI without RD. Early identification /intervention for children with S/LI could reduce the risk for MLD.

Abstract 91

Participatory Action Research: Improving Follow-Up Rates of Newborn Hearing Screening in Greater Cincinnati Area

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Purpose: Newborn hearing screening (NHS) is a multifaceted system of education, screening, diagnosis, referral, treatment, care management, and ongoing evaluation of the effectiveness of all components. Successful newborn screening systems rely on the collection, sharing and integration of data among the family, clinical care providers, and public health programs. Although universal NHS has dramatically reduced the number of late-identified hearing loss in children, there are still barriers that prevent timely follow-up of all babies. Current national average for loss to follow-up is 32% of those babies referred on their NHS; this represents a large portion of newborns who may never get the diagnostic testing necessary to determine if intervention for hearing loss is warranted. The purpose of this study was to determine gaps and weaknesses that exist in the NHS system that contribute to loss to follow-up and develop projects on how to address the issues. **Methods:** We utilized participatory action research (PAR) to generate qualitative data about health beliefs and behaviors regarding utilization of NHS systems. A group of 30 participating stakeholders met to gather information about the NHS system in Cincinnati and the surrounding suburbs; these meetings provided an opportunity for different thoughts and ideas to be shared with the whole group. **Results:** Some of the barriers in the system identified by the stakeholders include: inconsistent distribution and overall lack of information about NHS, language or cultural barriers and minimization of severity of a non-pass result. Some examples of specific goals generated include: creating an informational video to give a consistent message about NHS to families, creating educational tools that can be used when training screeners, creating a flag in electronic medical records indicating a failed NHS and establishing a mobile van that has the ability to travel to offices and do screenings and provide education about NHS. **Conclusion:** Ultimately, information gathered from regular meetings will be used to develop specific, sustainable projects to decrease loss to follow-up rates in multiple facets of the NHS. The stakeholders will continue to in their participation in regular meetings and group communications to carry out action plans and continually assess barriers and how best to address these issues.

Abstract 92

Adherence to the Well-Visit Schedule: Are There Differences in Psychosocial Risk and Developmental-Behavioral Status Between On-Time versus Off-Schedule Children?

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Purpose: Although most children receive well-child care in a timely manner, some do not present at recommended ages. The objective of this study is to determine any differences in developmental-behavioral status and psychosocial risk factors in children presenting on-time versus off-schedule for well visits. **Methods:** Participants were 21,349 children between the ages of 0 through 7-years, 10 months who received care in 86 general pediatric and family practice clinics in 19 US States. All providers deployed the same web-based service providing validated screens of parents concerns, childrens milestones, plus an autism-specific measure. IRB approval was received for analysis of existing anonymized data. **Results:** Most children were screened at ages coinciding with the periodicity schedule (+1 month) and the majority (83% of 16,842) were screened at the American Academy of Pediatrics targeted visits: ~9, 18, 24 or 30 months. 16% of on-time children failed screening. Meanwhile, 21% of children (N = 4,507) were screened off-schedule and 24% failed screens-- more than twice the likelihood of on-time children [OR = 1.7, 95%CI (1.60 1.87)]. Off-schedule children also tended to be poorer and to have non-English speaking parents [$\chi^2 (1) = 91.76; 244.91 p < .0001$]. Children > 31 months old and screened off-schedule had 8 times the rate of screening test failures (73%), as compared to younger off-schedule children (24%) [OR = 8.4, (95%CI = 7.14 9.85)]. Children > 31 months of age, whether on-time or off-schedule, were ~ 6 times less likely than younger children to present for well-visits [OR = 6.5 (95%CI = 6.24 6.79)]. **Conclusion:** Children presenting off-schedule for well-visits are more likely to fail developmental-behavioral screening tests, especially if older than 31 months, and to

have families with psychosocial risk factors. It is laudable that many clinicians responded to off-schedule children by providing screening at visits outside the periodicity schedule, i.e., engaged in opportunistic surveillance. Such vigilance is clearly needed, as is encouraging uptake of well-visits after 30 months of age.

Abstract 93

How Do Primary Care Clinics Make Use of Online Screening Services Given Differences in Patient Mix, Staff, and Equipment?

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Purpose: Web-based developmental-behavioral screening services offer helpful solutions to early detection in primary care: Accurate screening tools without hand-scoring, decision support, automatic referral letters, parent take-home summary reports, databases to support quality improvement initiatives, and ease of sharing information with referral sources. Little is known about how clinics implement online screening, especially across diverse populations. The objectives are to identify primary care implementation approaches in the use of online screening and whether these are associated with clinic characteristics, i.e., patient mix, staffing and equipment patterns. **Methods:** Participants were providers in 79 pediatric clinics across North America including 20 US States, collectively serving 20,941 families of children between 0 to 8 years of age. All sites used the same web-based service offering validated screens in both English and Spanish of parents' concerns, milestones, and an autism-specific screen. IRB approval was obtained for analysis of existing anonymized data. **Results:** There were 3 basic approaches to implementation: #1. Use of a parent portal wherein families completed screens from home or on tablet PCs/computers in waiting rooms [24 clinics, 10% (N = 2,086) of patients]; #2. paper-pencil in waiting rooms with staff subsequently entering parents responses into the website [48 clinics, 74% (N = 15,542) of patients]. Approaches #1 and #2 were used in clinics where most families spoke English and had graduated from high school. Approach #3 involved live interviews while staff transcribed parents responses into the website [7 clinics; 16% (N = 3,313) of patients] and used in clinics with high rates of non-English speaking families who tended to be poor and without high school education [$X^2(4) = 2725.84, p < .0001$]. **Conclusion:** Providers found ways to implement online screening that varied according to staffing patterns and equipment all despite absence of integration with electronic health records. Approaches used were responsive to variations in parents facility with English or Spanish, and in literacy skills. Although absence of integration with EHRs was not a barrier to use of online screening services, clinicians routinely recommended integration. Advocacy with EHR software vendors is needed.

Abstract 94

Keystone Quarter Rotation: A New Approach to Teaching Developmental Behavioral Pediatrics to Residents.

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Purpose: In 2013, the Boston Combined Residency Program in Pediatrics (BCRP) developed the Keystone quarter with the goal of unifying ambulatory rotations during the intern year and providing residents with more longitudinal experiences. Each quarter consists of 12 weeks of integrated Developmental and Behavioral Pediatrics (DBP), Advocacy, Primary Care, and Emergency department experiences. One of the cornerstones of Keystone is a longitudinal experience in which residents are paired with a single DBP attending for the entire quarter. The goals are for residents to manage patients over time, learn about the administration of developmental testing, and talk with families about developmental issues. **Methods:** A convenience sample of residents participating in the Keystone rotation was obtained. We reviewed evaluations which had been anonymously completed by residents at the end of their Keystone rotation. **Results:** Overall, the resident feedback was positive with comments that the longitudinal experience was critical to helping them understand the assessment and management of DBP patients. Of the residents who completed surveys, 45% reported they were able to take what they learned in one discipline and apply it to another. 91% of the residents surveyed stated they preferred the Keystone format to the traditional 4-week rotations, and 73% indicated they would like more longitudinal experiences during residency. Residents reported they had more autonomy during their continuity experiences, with many completing a developmental history on their own and engaging directly with families in the assessment process. Informally, many preceptors commented that they felt more comfortable in allowing residents to assume patient autonomy over time. **Conclusion:** The Keystone quarter is an innovative attempt to provide residents with a longitudinal DBP experience within the context of a 12-week ambulatory pediatric block. By providing a longitudinal experience, residents have the opportunity to more actively and independently participate in DBP clinical assessments.

Abstract 95

Electronic Media Exposure Predicts Nighttime Sleep Latency in Thai Infants

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Purpose:To examine whether 6-month nighttime sleep latency and daily total duration of all electronic media exposure at 6 and 12 months of age could predict 12-month nighttime sleep latency in Thai infants. **Methods:**Two hundred and eight infants who followed-up at both 6 and 12 months participated in this study. Each main caregiver completed a sleep diary. Nighttime sleep latency and sleep duration were calculated. Variables on electronic media were thoroughly interviewed at two time points. Relationships between electronic media at 6 and 12 months with 12-month nighttime sleep latency were analyzed using multiple linear regressions and the path analyses. **Results:**Longer sleep latency at 12 months was significantly predicted by longer daily duration of media exposure at 12 months and longer sleep latency at 6 months of age for both the weekday and the weekend. Infants who exposed to electronic media above the median (> 245 minutes at 6 months and > 271.5 minutes at 12 months) appeared to have longer nighttime sleep latency at 12 months compared with those who exposed to the screen below the median at both ages (mean \pm SD = 35.84 \pm 30.24 minutes vs. 22.93 \pm 15.37 minutes, $p = 0.011$). **Conclusion:** Six-month nighttime sleep latency and electronic media exposure at 12 months could predict 12-month nighttime sleep latency. Relative changes in daily total duration of media exposure from 6 to 12 months can provide a better prediction of nighttime sleep latency in Thai infants than screen exposure at either time point.

Abstract 96

Predictors of Psychotropic Polypharmacy among Children on Kentucky Medicaid with ADHD, Autism and Depressive Disorders

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Purpose:Combining psychotropic drugs for treatment of neuropsychiatric disorders in children leads to possible increases in benefits, but also in risks. The current study aimed to identify rates and predictors of psychotropic medication polypharmacy among children on Medicaid that have autism spectrum disorder (ASD), ADHD, and depressive disorders. **Methods:**Using Kentucky Medicaid records from 2013, we developed a detailed demographic, behavioral, clinical, and diagnostic data set for all children ($n=69,044$) who received Medicaid services and were diagnosed with ASD, ADHD or depressive disorders using standardized criteria. Children with a seizure diagnosis were excluded. Polypharmacy was defined as having interclass psychotropic medication claims during the study period. Multivariable logistic regression was used to model predictors of interclass polypharmacy. **Results:**Overall, 77.6% ($n=51,430$) were prescribed any psychotropic medication, and 59.2% ($n=30,429$) of those had interclass polypharmacy when excluding children that have been diagnosed with seizure disorders. Being older (OR=1.03, 95% CI 1.01-1.05, $p=0.037$), white (OR=1.07, 95% CI 1.04-1.14, $p=0.003$), not in foster care (OR=1.05, 95% CI 1.02-1.09, $p=0.019$) and living in an urban area (OR=1.54, 95% CI 1.48-1.60, $p<0.001$) significantly increased the odds of interclass polypharmacy. Children with ASD ($p<0.001$) disproportionately received interclass polypharmacy, when compared to children with ADHD and depressive disorders. **Conclusion:** Over 30,000 children in Kentucky received 2 or more psychotropic medications in 2013. Given the extent of combination therapy, the ambiguous evidence for benefit, and the potential harm; further research is warranted to better understand the prescribing and monitoring practices and the availability and use of non-medication therapies. Additionally, future research is warranted to investigate family- and provider-level factors that impact interclass polypharmacy prescribing practices.

Abstract 97

Obstructive Sleep Apnea and Developmental Outcomes in Children with Down Syndrome and Autism

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Purpose:Children with Down Syndrome (DS) are at high risk for obstructive sleep apnea (OSA). The American Academy of Pediatrics recommends screening for OSA starting at four years of age. Previous studies suggest OSA affects cognition in children with DS, but very little is known about the impact of OSA on the developmental outcomes of children with DS and autism spectrum disorder (ASD). Objective: To determine the prevalence of OSA and its relationship with developmental outcomes in children with dually diagnosed DS and ASD referred to a regional clinic. **Methods:**A cross-sectional study was done reviewing the medical records of all children seen in a regional DS clinic from June 2006 to September 2011. Data abstracted included clinical diagnosis of ASD and moderate/ severe OSA documented by polysomnogram. Developmental outcomes were measured using full scale developmental quotient (DQ) scores derived from the Capute Scales. OSA was compared between children with DS and children with DS/ ASD using Fisher's exact test. Predictions of DQ for children with DS and for children with DS/ASD were assessed using a multiple linear regression model and Wilcoxon rank-sum test respectively. For all statistical tests, the level of significance was set at $\pm = 0.05$ and analyses were done using STATA software 13.0. **Results:**Medical records of 520 children (mean age of 8 \pm 4.6years, 47% F, 53% M) were reviewed. The mean age at the time of developmental assessment was 3.8 \pm 3.2 years. Thirty nine (7.5%) of the

children (59% F, 41% M) were diagnosed with DS/ASD. The prevalence of OSA was 22 % in children with DS, and 29% in children with DS/ ASD. Compared to children without OSA, DQ was lower among children with DS and OSA (50.16 15.15 vs 60.66 17.27, $p < 0.001$, 95% CI = -15.07, -7.10) as well as among children with DS/ASD and OSA (20.9 vs. 32.17, $p = 0.034$). **Conclusion:** Our data indicate that OSA is a common condition seen in children with DS as well as DS/ASD and is associated with lower DQ for both these groups. Further investigation is required to determine why OSA is associated with lower DQ in these populations.

Abstract 98

Description of Clinical Service Provision from a Survey of 27 Autism Programs

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Purpose: Email surveys were sent to 146 autism programs in the USA to learn how typical autism programs operate and to inform our efforts to improve autism services at our center. **Methods:** The surveys were sent three times during 2013 to the directors of autism programs or developmental-behavioral pediatricians (DBP), and 27 surveys were completed and returned. **Results:** Clinic directors consisted of 12 MDs, 11 PhDs, 1 MD/PhD, and 2 PNP. Seventy-three percent of the programs were in Pediatrics departments, while 8% were in Psychiatry departments. Primary providers were PhD level psychologists 81.5%; DBP 70%; speech-language pathologists (SLP) 70%. All of the programs provided diagnostic evaluations, and completion of evaluations ranged from 26% in less than 1 day, 33% in 1 day, and 22% over multiple days. Some of the components of the assessment included: ADOS 63%, CARS-2 26%, ADI-R 22%, IQ test 41%, adaptive behavior assessment 52%, medical assessment and physical exam 56%, speech and language evaluation 33%, language screening 26%, pragmatic evaluation 22%, review of DSM-IV criteria 70%, an individually tailored evaluation 70%, and autism checklists 33%. The interpretive visit varied across programs with 50% occurring on the same day as the evaluation and 25% on a separate visit. The interpretive session involved the psychologist 67% of the time, the DB pediatrician 59% of the time, the SLP 37% of the time, and multiple team members 49% of the time. A wide array of follow-up services was offered. Programs served a variety of ages: 93% see children <5 years; 81% see children 14-18 years; 44% served adults 18+ years. The median number of Whites seen was 50%, Blacks 20%, and Hispanics 10%. **Conclusion:** While these findings may not be representative of the nation, this survey gave us some insight into a typical autism clinic in academic medical centers. This information will become more important as clinics proliferate to serve this increasing population.

Abstract 99

Wandering Prevention in Youth with Autism Spectrum Disorders

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Purpose: Concerns about wandering behavior, or elopement, are a major source of stress for the families of children with autism spectrum disorders (ASDs). Although many strategies have been recommended to address this problem, published studies about the use of elopement prevention measures (EPM) are lacking. The aim of this study was to examine the prevalence and correlates of parental use of physical and/or electronic measures to prevent wandering. **Methods:** Data was obtained from the 2011 Survey of Pathways to Diagnosis and Services, a nationally representative survey of the parents of 4032 children who have ever been diagnosed with ASD, intellectual disability (ID), or developmental delay (DD). Use of EPM was assessed by parental response to two questions about whether they had implemented physical barriers (such as gates) or used electronic tracking devices to prevent wandering. Logistic regression and chi-square analyses were used to explore associations between the use of EPM and various demographic and clinical characteristics. **Results:** Among children with current ASD (N=1420), physical barriers were most commonly used (31%), followed by electronic measures (3%), and combined physical/electronic measures (3%). Compared to families with no elopement history (N=1006), the families of children with a history of elopement (N=414) were significantly more likely to have implemented physical barriers ($p < .0001$), electronic measures ($p = .006$), and combined measures ($p = .003$). Greater ASD severity was associated with the use of physical barriers, electronic measures, and combined measures ($p < .0001$ for all). Use of physical barriers, but not electronic or combined measures, was associated with younger child age ($p = .003$) and a comorbid ID/DD diagnosis ($p = .0003$). All three EPM were more common in children who were described by their parents as not aware of danger (physical: $p < .0001$; electronic: $p = .06$; both: $p = .04$) and easily lost (physical: $p = .0002$; electronic: $p = .001$; both: $p = .0002$). **Conclusion:** Roughly one third of this sample reported EPM usage, suggesting that concerns about elopement are common among families of children with ASDs. More research is needed to identify effective strategies for preventing elopement in this population.

Abstract 100**Teaching Interpersonal and Communication Skills: Evaluation of a Parent-Directed Resident Education Program on Children and Youth with Special Health Care Needs (CYSHCN)**

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Purpose:To assess the effectiveness of a parent-taught program providing a family-based perspective on pediatric chronic care to develop resident interpersonal and communication skills. **Methods:**Since 1998 pediatric residents on their behavioral/developmental rotation have met individually with parents of CYSHCN to participate in a curriculum based on Project DOCC (Delivery of Chronic Care). Two 3-hour sessions of a scripted parent interview (PI) followed by guided home visit (HV) were evaluated by residents using a Likert Scale from 1 (poor) to 5 (excellent). The percentages of the optimal response (rating #5) obtained were compared using chi-square and Fisher's exact tests. Unstructured resident and parent comments were also evaluated after qualitative analysis. **Results:**The resident comment category describing the experience as "Eye-opening" (gained new insight or perspective) was noted in 75 (82%) for PI and in 57 (75%) for HV ($p=0.08$). The parent comment category describing the resident as "Interested" was found in 174 (92%) for PI and 96 (98%) for HV ($p=0.04$) while "Empathetic" was noted in 116 (61%) for PI and 60 (61%) for HV ($p=0.98$). **Conclusion:** Both PI and HV components of Project DOCC appear to facilitate the exchange of information and collaboration between families with CYSHCN and residents providing a unique opportunity for achieving competency in interpersonal and communication skills.

RESIDENT EVALUATIONS WITH OPTIMAL SCORE (#5)

	PI (n=125)	HV (n=115)	p value
Provided new information	71 (57%)	73 (63%)	0.29
Relevance	78 (62%)	74 (64%)	0.75
Met educational objectives	94 (75%)	90 (79%)	0.57
Depth of coverage	94 (75%)	89 (77%)	0.69
Amount of time spent	90 (72%)	89 (77%)	0.40

Abstract 101**Video-Based Parenting Advice in Pediatric Primary Care: A Feasibility and Utilization Study**

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Purpose:Primary care providers (PCPs) cite training deficits and time restrictions as barriers to providing behavioral care. Multimedia interventions hold potential to provide evidence-based information in a time- and cost-efficient manner. Research suggests parents are amenable to multimedia intervention in primary care, but little is known about utilization of such resources or how they are best delivered. This study evaluated the utilization, feasibility, and acceptance of a novel video-based intervention for disseminating evidence-based behavior management strategies in a private pediatric primary care setting. **Methods:**A private pediatric practice was provided access to a series of 3-5 minute video tutorials demonstrating evidence-based techniques for improving child behavior (e.g., instruction delivery, time-out implementation, labeled praise). Videos were available on iPads in clinic rooms and on the practice's website. Parents of children 1.5-5 years were surveyed subsequent to well-child visits to assess overall satisfaction, presence of behavioral concerns, exposure to the video intervention, and perceptions of its impact. 1-month follow-up surveys were conducted with some parents to assess engagement in recommended strategies. **Results:**240 total parents were surveyed after a well-child visit. Parents who viewed the videos rated them as having a positive impact on their visit ($M=4.24$ on a 1-to-5 point scale), highly helpful ($M=4.17/5$), and rated themselves as highly likely to use the information provided ($M=4.63/5$). However, only 33% of those surveyed reported being informed of the video intervention during their well-child visit. 61% of those who were unaware of the videos stated they wished they had been informed of the resource. At follow up, 50% of parents who had watched a video reported using the recommended strategies. **Conclusion:** The results replicated previous findings that parents are amenable to multimedia interventions in primary care and utilize the information conveyed. Importantly, even when an evidence-based tool was made readily available, only a minority of parents who would benefit were exposed to the videos. This highlights the need for study of dissemination and implementation processes in order to maximize the impact of evidence-based resources.

Abstract 102

Contributions of Psychosocial Comorbidities on Financial and Work-Related Difficulties Among Children with Chronic Illnesses

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Purpose: Past data using the National Survey of Children with Special Health Care Needs (CSHCN) found that 20.9% of families with children with chronic health problems report financial difficulties and decreasing hours at work or quitting work entirely due to these illnesses (van Dyck et al., 2004). Many children with chronic illnesses also have comorbid behavioral health problems. We extended previous findings by examining whether comorbid psychosocial problems added to difficulty with financial problems or maintaining a job for parents of children with a chronic illness. **Methods:** The CSHCN (2011-2012) includes interviews of over 40,000 parents of children ages 0-17 with special health care needs. Parents answered questions about their child's disease status and their financial or family difficulties due to their child's illness. **Results:** Overall, 20.2% of parents reported that the family suffered financial problems as a result of their child's chronic illness, and 12.7% reported having family members stop working to care for the child. Having to stop working or decreasing hours at work was significantly more common among children with comorbid psychosocial problems (OR range: 1.41 for ADHD and 3.94 for behavioral problems). Financial problems were more frequently reported when comorbid psychosocial problems were present (OR range: 1.46 for ADHD and 3.71 for anxiety). **Conclusion:** Our findings support the importance of addressing psychosocial functioning concurrently with medical management of chronic health conditions. Our results show that comorbid behavioral health problems have a significant additive effect on financial and work-related issues. Overall, psychosocial problems put families more at risk for financial or work-related difficulties than did the child's chronic illnesses alone.

Abstract 103

Evaluating an abbreviated Parent-Child Interaction Therapy intervention for externalizing behavior problems in primary care

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Purpose: Externalizing behavior concerns are often raised during routine pediatric primary care visits. There is growing demand for behavior management interventions to be delivered in primary care. The present study evaluated a 4-session Parent-Child Interaction Therapy group intervention created for primary care (Primary Care PCIT or PC-PCIT; Berkovits et al., 2010). Variations in treatment sequencing, changes in disruptive behavior, and treatment satisfaction were examined. **Methods:** Fifteen parents of children ages 2 to 6 participated. Participants received standard PC-PCIT (the first two sessions focusing on relationship-enhancement, the last two sessions focusing on effective discipline) or reversed PC-PCIT (where discipline skills were taught first and relationship skills were taught second). Parents reported on externalizing behaviors weekly using the Eyberg Child Behavior Inventory. Treatment satisfaction was measured at each session with the Therapy Attitude Inventory. Assessment and treatment took place in a primary care setting. **Results:** Overall, parents reported significant decreases in externalizing behaviors following intervention ($t = 4.76, p = 0.001$), and their satisfaction with treatment was high ($M = 45, SD = 4.09$; max score possible = 50). Session-by-session analysis suggests that, by mid-treatment, parents who received reversed PC-PCIT rated behavior as less problematic and were more satisfied with treatment than parents who received standard PCIT. These differences disappeared, however, by post-treatment assessment. Graphic representations of session-by-session data will be presented. **Conclusion:** The present study found that a group-based Primary Care PCIT intervention was effective in reducing parent-reported problem behaviors, regardless of the order in which skills were presented. Additionally, parents were highly satisfied with the intervention. Thus, it may be possible for PCIT skills to be taught flexibly in the primary care setting, increasing access and acceptability for families. Recommendations for adapting PCIT for use in integrated primary care settings will be discussed.

Abstract 104

Assessment of Primary Care Pediatricians' Knowledge of Special Education Services in the United States

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Purpose: In a 2006 policy statement, the AAP made recommendations with regards to the primary care pediatrician's (PCP) role in caring for children with disabilities. Recommendations included awareness of services and resources available in the community for the child and family. The purpose of this study is to examine PCP understanding of special education services. **Methods:** The Pediatrician Special Education Survey (PSES) was mailed to 3,000 PCPs across the United States for anonymous completion. Addresses were obtained through the AAP's list manager. The PSES consisted of 4 sections: demographics, PCP's general knowledge about special education, PCP's clinical practice for children needing special education services, and residency training in D-B pediatrics. Data was analyzed using descriptive statistics. **Results:** 460 PCPs responded from 41 states (17% response rate). 97%

of PCPs were board certified. 63% were female. In terms of practice setting: 29% urban, 57% suburban, and 15% rural. 79% worked primarily in a private office, 10% hospital clinic, 9% community clinic, and 2% other. 98% of PCPs reported asking about school performance during annual well visits. The majority indicated that they knew what IEPs (96%) and Section 504 IAPs (83%) were, but only 53% reported knowing the differences between these. 32% indicated that they knew what an IFSP was, and 26% responded that they knew the differences between IEPs and IFSPs. 20% of PCPs reported they were unaware of different types of alternative classroom settings for grade school children, and 16% were unsure. 48% of PCPs felt qualified to inform and counsel families about their legal rights to appeal decisions related to denial of special education services; 33% did not feel qualified, and 19% were unsure. **Conclusion:** In 2012, the CDC estimated 15% of children aged 3 to 17 years have one or more developmental disabilities. PCPs play an essential role in the care of children with disabilities. PCPs need greater awareness of special education services and legal entitlements if they are to help children access needed services and supports.

Abstract 105

Accommodating to the Needs of Youth with ADHD: Support for Classroom Accommodations by Primary Care Pediatricians

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Purpose: In 2011, the AAP developed clinical practice guidelines and an updated toolkit to support PCPs in the management of ADHD. The purpose of our study is to examine to what extent primary care pediatricians (PCPs) provide written support for Section 504 individual accommodation plans and recommend specific classroom accommodations. **Methods:** The Pediatrician Special Education Survey (PSES) was mailed to 3,000 PCPs across the United States for anonymous completion. Addresses were obtained through the AAP's list manager. The PSES consisted of 4 sections: demographics, PCP's general knowledge about special education, PCP's clinical practice for children needing special education services, and residency training in D-B pediatrics. Data was analyzed using descriptive statistics. **Results:** 460 PCPs responded from 41 states (17% response rate). 97% of PCPs were board certified. 63% were female. Median year completed residency training: 1996 (range: 1960-2014). In terms of practice setting: 29% urban, 57% suburban, and 15% rural. 79% worked primarily in a private office, 10% hospital clinic, 9% community clinic, and 2% other. 89% of PCPs stated they used rating scales to assess ADHD and 80% indicated they knew what a 504 plan was. Only 63% of PCPs stated they have completed forms or written in support of 504 accommodations. When asked about the frequency with which they recommend specific classroom accommodations, 65% often recommended preferential seating to reduce distractions, 42% often recommended extended time on tests, 29% frequent breaks, 21% shortened assignments, 20% assistance with note-taking and only 11% often recommended a duplicate set of textbooks. **Conclusion:** Almost a third of PCPs do not provide their patients with written support for 504 accommodations. Apart from preferential seating, most PCPs do not often recommend many of the typical classroom accommodations considered helpful for children with ADHD -- potentially compromising students' academic performance.

Abstract 106

Distinguishing Young Children With and Without Attention-Deficit/Hyperactivity Disorder: A Cross-Validation Study

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Purpose: This study aims to profile young children with and without Attention-Deficit/Hyperactivity Disorder (ADHD) as a function of family, parent, and child characteristics and to identify subgroups based on these characteristics (Study 1). An independent sample of young children is used to cross-validate these subgroups (Study 2). **Methods:** Study 1 and 2 consisted of children aged 3 to 6 years, 11 months (Study 1: mean age 68.13 months, SD 11.35 months; Study 2: 67.50 months, SD 14.51 months). Children in Study 1 (N=120) were consecutively diagnosed with ADHD at a tertiary developmental clinic after multidisciplinary assessments. Seventy percent of these children continued to meet ADHD diagnostic criteria at follow-up after a mean interval of 7 years. Latent class analysis was performed to classify children with similar characteristics into subgroups of children who did and did not continue to meet criteria at follow-up. Study 2 (N=168) included an independent sample of 84 children with ADHD matched by age and gender to 84 without ADHD. A predictive model from Study 1's latent class solution was applied to the Study 2 data. Sensitivity-specificity analysis was completed. **Results:** Latent class analysis in Study 1 indicated a 3-class solution (Bayesian Information Criterion (BIC) = 3807.70, $p < 0.001$). Class 1 represented children with the highest likelihood of a stable ADHD diagnosis (94.5%), followed by those in Class 2 (63.0%). Those in Class 3 were primarily children without ADHD. The most striking characteristics associated with children in Class 1 were lower socioeconomic status and parental education, parental history of psychopathology, and higher child externalizing symptoms. An identical latent class structure from Study 1 was replicated using an independent sample in Study 2 (BIC = 5108.01, $p < 0.001$). The sensitivity (0.913, 95% CI 0.814-0.964) and specificity (0.788, 95% CI

0.692-0.861) were high and acceptable. **Conclusion:** The classifications presented above represent valid combinations of family, parent, and child characteristics that are predictive of ADHD in young children.

Abstract 107

Caregiver Depression and Coping in Relation to Health Care Utilization for Pain in Children with Sickle Cell Disease

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Purpose:Caregiver psychological adjustment has been linked to a range of developmental outcomes in children with sickle cell disease (SCD), a group of inherited blood disorders. Consistent with the risk-and-resistance model, caregiver psychopathology can be viewed as a risk factor for poorer child adjustment to chronic illness that is mediated by important stress processing variables (e.g., caregiver coping). This model has demonstrated utility for explaining child adjustment to SCD, but has been less widely used to understand health outcomes in this population. The current study sought to examine the relationship between caregiver depressive symptoms and health care utilization for pain in children with SCD, with caregiver coping serving as a potential stress processing (i.e., mediating) factor in this relationship. **Methods:**Caregivers of 59 children with SCD completed measures of depression (Center for Epidemiologic Studies Depression Scale; CES-D) and coping (Coping Strategies Questionnaire - Revised). Health care utilization (emergency room visits, hospitalizations, and calls and visits to the clinic) for pain over the previous two years was determined via review of the child's medical record. Correlations were examined between caregiver depressive symptoms, coping, and health care utilization in order to determine the potential for mediation in future studies. **Results:**On the CES-D, 21 caregivers (36%) had ratings that fell at or above the cutoff for depressive symptoms. In contrast to our hypothesis, caregiver ratings of depressive symptoms were only weakly associated with health care utilization ($r = .09$, $p = .513$), though they were strongly associated with passive coping ($r = .58$, $p < .001$). Passive coping also demonstrated a moderate relationship with health care utilization ($r = .30$, $p = .019$). **Conclusion:** The results suggest that caregiver depression alone may not necessarily be informative for understanding patterns of health care utilization in children with SCD in the absence of information on caregiver coping.

Abstract 108

Child Behaviors and Parental Stress in Children with Autism Spectrum Disorder

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Purpose:Parents of children with autism spectrum disorder (ASD) experience more stress than parents of children with other developmental disabilities and chronic health problems. Problematic behaviors in ASD are associated with increased parental stress. However, to date, there is limited information on the types of behaviors that are most associated with parental stress. **Methods:**We enrolled consecutive children ages 2 to 12 with developmental disabilities ($N=265$) from our clinics in a tertiary pediatric centre into the study from December 22, 2014 to April 30, 2015. Parents of 93% of these children consented to this study. After comprehensive multidisciplinary assessment, 69 children were diagnosed with ASD. Child behaviors were measured using the Behavior Assessment System for Children, Second Edition (BASC-2). Parental stress was measured using the Parenting Stress Index, Short Form (PSI). Correlations between child behavior T-scores and Total Stress were calculated. Linear regression models were used to evaluate whether specific child behaviors were predictive of parental stress. **Results:**Mean age of children was 7 years, 2 months (SD 3 years, 3 months). Mean age at diagnosis was 4 years, 8 months (SD 2 years, 9 months). The child's Composite Behavior Symptom Index and Adaptive Skills on the BASC showed significant correlations with parental stress ($r=0.835$, $p=0.019$; $r=-0.804$, $p=0.029$, respectively). Behaviors that correlated most with parental stress were adaptability ($r=-0.877$, $p=0.010$), social skills ($r=-0.851$, $p=0.015$) and atypicality ($r=0.862$, $p=0.013$). After controlling for child's current age, age at diagnosis and use of financial subsidy, better adaptability and better adaptive skills of the child remained predictive of lower parental stress ($\beta=-2.637$, $p=0.011$; $\beta=-2.867$, $p=0.042$, respectively). **Conclusion:** Behaviors of children with ASD are associated with parental stress. Specifically, better adaptability and adaptive skills of children with ASD are significantly associated with lower parental stress. Greater emphasis should be placed on increasing flexibility and independence of these children.

Abstract 109

Early Morning Functioning in Stimulant-Treated Children and Adolescents With Attention-Deficit Hyperactivity Disorder and its Impact on Caregivers

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Purpose:To examine the temporal occurrence and severity of inadequate ADHD symptom control throughout the day and associated functional impairments and the emotional impact on caregivers specifically during the early morning routine (EMR) before school, in children and adolescents with ADHD currently treated with stable doses of stimulant medications. **Methods:**An on-line, primary caregiver-completed questionnaire (n=201) was designed to determine from parent self-reports if inadequately controlled ADHD symptoms exist in children and adolescents with ADHD, currently treated with stable doses of stimulants. Caregivers who identified inadequately controlled ADHD symptoms during the EMR (Likert severity rating >2) were asked to continue the survey by answering a series of questions. **Results:**On a 10-point scale (1=no ADHD symptoms and 10=significant ADHD symptoms), inadequately controlled ADHD symptoms were rated as most severe during the early morning routine (6.45) and the evening homework time (6.46). Majorities of caregivers reported early morning ADHD symptoms (74%) and impairment of early morning functioning (EMF) (76%) as moderate to severe (ADHD symptom score 5-10). Parents reported that they often: felt overwhelmed and exhausted (40%), raised their voice more (37%) and felt constantly stressed (30%) as a result of their child's ADHD symptoms during the EMR. **Conclusion:** The results strongly suggest that despite early morning administration of stimulants, caregivers of children and adolescents with ADHD report a high prevalence of inadequately controlled, early morning ADHD symptoms. Importantly, they also noted that their relationship with their child or adolescent with ADHD was negatively affected by these symptoms (42%). These results further suggest that pharmacologic management of EMF impairments due to ADHD symptoms remains a significant unmet need in children and adolescents with ADHD.

Abstract 110

Prevalence of Genetic Testing among Children with Developmental Disorders

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Purpose:Guidelines from the AAP, the American Academy of Neurology, and other professional societies recommend that children with intellectual disability (ID), developmental delay (DD), and autism spectrum disorders (ASDs) routinely receive genetic testing as part of a diagnostic workup. Identification of a genetic cause of a child's developmental issues may enable clinicians to counsel families about recurrence risk and direct them to resources for treatment, research, and support. The aim of this study was to assess the national prevalence of genetic testing among children with developmental disabilities. **Methods:**Data from the CDC's 2011 Survey of Pathways to Diagnosis and Services -- a nationally representative survey of the parents of 4032 children who have ever been diagnosed with ASD, ID, or DD -- were analyzed. Prevalence of genetic testing was assessed based on parental response to a question about whether their child had ever received genetic screening "to confirm a diagnosis or so that you could learn more about his/her condition." Chi-square analyses were used to compare rates of genetic testing across four diagnostic categories: ASD-only, ASD with ID, ID/DD without ASD, and DD without ASD or ID. **Results:**Overall, 30.4% of the entire sample indicated that they had ever received genetic testing. The prevalence of genetic testing differed according to diagnosis ($p < .0001$); it was performed in 52.2% of the ASD+ID group, 45.2% of the ID/DD-only group, 28.3% of the DD-only group, and 17.1% of the ASD-only group. Children who had ever seen a pediatric neurologist (PN) or a developmental pediatrician (DBP) were significantly more likely to have received genetic testing than those who had not seen these specialists ($p < .0001$ for both). However, rates of genetic testing did not differ between those who had seen a PN and those who had seen a DBP ($p = .9448$). **Conclusion:** In this nationally-representative sample, the majority of children with developmental disabilities did not receive recommended genetic testing. More research is needed to determine to what extent this reflects under-reporting by parents and/or true barriers to genetic testing in this population.

Abstract 111

Contributions of Psychosocial Comorbidities to Referral Difficulties for Children with Chronic Illnesses

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Purpose:When a child is diagnosed with a chronic illness, they often require services above and beyond those required to manage their illness, such as rehabilitative or other services (e.g. educational, social, medical specialties). Parents of children with chronic illnesses are challenged with balancing their child's medical needs with their other responsibilities, such as employment and their child's educational needs. We examined whether child psychosocial comorbidities added to difficulty obtaining referrals for additional medical, educational, and social services. **Methods:**The data are based on interviews of over 30,000 parents of children ages 6-17 with special health care needs from the National Survey of Children with Special Health Care Needs (CSHCN, 2011-2012). Parents answered questions about their child's disease status, psychosocial issues, and their need for referral resources. **Results:**Overall, 30.9% of parents of children with chronic illnesses reported needing a referral for additional services. Of the parents needing referrals, 19.8% reported having a "big problem" obtaining these referrals. Parents of children with asthma and

migraines were most likely to report having a "big problem" obtaining referrals (32.6% for asthma and 25.0% for migraines). However, among all the children needing additional services, children with psychosocial comorbidities were more likely to have a "big problem" obtaining referrals: (OR=1.56 for anxiety (95% CI=1.12, 2.18), OR= 5.92 for ADHD (95% CI=1.30, 26.96), and OR=8.03 for depression (95% CI= 3.89, 16.55)). **Conclusion:** Our findings support the importance of health care providers addressing psychosocial functioning among children with chronic health conditions. The CSHCN did not ask about difficulties experienced in obtaining referrals for specific services. Future research should evaluate ease of obtaining these referrals.

Abstract 112

Does exclusivity in breastfeeding matter?: The impact of breastfeeding type (i.e., exclusively breastfed, partially breastfed, or not breastfed) on positive health indicators in early childhood for low income families

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Purpose:The current study examined the relationship of breastfeeding type (i.e., exclusively breastfed, partially breastfed, or not breastfed) on a child's ability to flourish across multiple dimensions, as measured by parental report of positive health indicators, among low income children after accounting for child, family, and community variance. **Methods:**Data were obtained from the 2011 National Survey of Children's Health, a nationally representative, cross-sectional survey. An ANCOVA was used to calculate differences among groups after controlling for gender and race/ethnicity and accounting for differences at the community, family, child, and service levels. All analyses were limited to low income children aged 6 months through 5 years for whom breastfeeding data were available (N=27,497). **Results:**There was a significant positive correlation between the flourishing and breastfeeding type ($r_s = .059$, $p < .001$). A regression analysis demonstrated a statistically significant predictive relationship between the covariates and flourishing, $p < .001$ such that 4.7% of the variance in flourishing can be explained by the covariates. The ANCOVA model indicated there were significant differences between flourishing and the exclusivity grouping variable [$F(3, 25841) = 35.631$, $p < .001$, Partial $\eta^2 = .004$], with a 95% confidence interval from 1.69 to 1.73. Planned pairwise comparisons indicated significant differences in the flourishing variable between the never breastfed and the exclusively breastfed group (MD= $-.12^*$), with a 95% confidence interval from $-.14$ to $-.10$ and the never breastfed and the partially breastfed group (MD= $-.11^*$), with a 95% confidence interval from $-.13$ to $-.09$. **Conclusion:** There are significant differences between infants who were exclusively breastfed and those who were not breastfed on a measure of flourishing after accounting for important covariates. A less expected outcome was that infants who were partially breastfed did not differ from those who were exclusively breastfed. As few studies have examined the benefits of breastfeeding and positive health indicators, this study indicates there are important benefits to partial breastfeeding that may be similar to exclusive breastfeeding when assessing for flourishing.

Abstract 113

An Examination of the Developmental and Behavioral Health Needs of Children in an Integrated Care Medical Home for Children in Foster Care

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Purpose:Children in foster care are one of the largest, most vulnerable and underserved populations served by medical and behavioral health systems. A medical home for children in foster care with integrated behavioral health services may serve as a model paradigm to address their health care needs. The purpose of this study is to examine the developmental and behavioral (DB) health needs of school age children seen at a new integrated care medical home for children in foster care. **Methods:**Children receive a comprehensive initial medical and DB assessment approximately 30 days after foster care placement. DB assessment consists of a brief semi-structured diagnostic interview with foster parent and child. Direct child measures includes: Kaufman Brief Intelligence Test (K-BIT), Child PTSD Symptoms Scale (CPSS), and mood ratings. Foster parents complete the Child Behavior Checklist (CBCL). **Results:**Developmental and behavioral data has been obtained on 30 children ages 6-19 (73% female). Highest mean CBCL T-scores were on the Attention Problems (M=56.6), Rule Breaking Behavior (M=55.8), and Social Problems (M=54.0) scales. Mean K-BIT scores: IQ Composite (M=84.0), Verbal (M=83.6) and Non-Verbal (M=87.9). Of children with K-BIT composite scores below 85, only 40% had an IEP in place. Youth with significant behavior problems reported more difficulties with mood, $F(1,30)=6.80$, $p=.04$. 50% of children had clinically significant symptoms of PTSD, and half of that group was receiving specialized mental health services. 20% of children were prescribed psychotropic medication, with 67% prescribed 1 medication and 33% prescribed 2-3 medications. **Conclusion:** Results suggest medical services for children in foster care should examine developmental and behavioral health needs. Children presenting for an integrated medical home exhibit complex unmet behavioral and

developmental health needs. Integrated medical homes hold promise for better serving the needs of children in foster care.

Abstract 114

Physicians' Knowledge about the Legal Consequences of Stimulant Diversion: Perception vs. Reality

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Purpose:To assess and compare actual and reported physician (MD) knowledge about the legal consequences (LC) of diversion and misuse (D/M) of stimulant medication (SM). **Methods:**A questionnaire focused on D/M was mailed to all child neurologists (CN), child psychiatrists (CP), and developmental-behavioral pediatricians (DBP) in the US. Only responses by MDs who currently prescribe SM were included in the analysis. MDs rated on a 3-point Likert scale how qualified they feel to educate their ADHD patients about the LC of D/M of SM. MD knowledge was assessed with the legal question (LQ) To your knowledge, if patients with ADHD give their SM to a friend, does it carry the same LC as them selling their SM to a stranger?; response choices were Yes (correct), No (incorrect), and Not Sure. **Results:**832 valid responses were received: CN=106, CP=579, DBP=141. MDs were also classified based on how many high school students with ADHD they currently treat with SM?: low prescribers (LP) = 1-10 patients [n=159], medium prescribers (MP) = 11-30 [n=249], and high prescribers (HP) >30 [n=424]. Approximately half of all MDs said they were adequately qualified to educate about LC of D/M of SM, yet 32% of these MDs couldn't correctly answer the LQ. Only 68% of those who felt adequately qualified to educate about LC answered correctly, as did 50% of those who felt somewhat qualified and 32% who felt not at all qualified. Fishers Exact Test for Association was performed to test the association between MD self-assessment of LC and ability to correctly answer a LQ about D/M. A significant association was noted for all MDs ($p < 0.0001$), CP ($p < 0.0001$), DBP ($p = 0.0010$), LP ($p = 0.0030$), MP ($p = 0.0007$), and HP ($p = 0.0006$). Interestingly, CN did not show a significant association ($p = 0.0956$) in their self-assessment and ability to correct answer a LQ. **Conclusion:** Many subspecialists who felt adequately qualified to counsel ADHD teens about the LC of D/M could not correctly answer an important LQ pertaining to D/M. However, MDs grouped by subspecialty and prescription volume still showed a significant association between their reported and actual knowledge of the LC of D/M, except for CN. MDs need to be better educated about LC of D/M so that they can accurately counsel their patients.

Abstract 115

Physician Practices To Prevent Diversion of ADHD Stimulant Medication

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Purpose:To examine practices employed by physicians (MDs) to prevent diversion and misuse (D/M) of stimulant medication (SM). **Methods:**A questionnaire was mailed to 3 sub-specialties (SS): all child neurologists (CN), child psychiatrists (CP), and developmental pediatricians (DBP) in the US. Only responses by MDs who currently prescribe SM (n=815) were analyzed. **Results:**When prescribing SM to ADHD teens, 1/3 of MDs rarely or never educate patients about health (31%) or legal (32%) consequences of D/M, with significant differences across SS: CN: 49%/48%, CP: 26%/28%, DP: 38%/38% (chi-square; $p = 0.0001, 0.0002$). Overall, 22% of MDs rarely or never counsel patients about D/M in their pre-college visit; SS differed: CN: 44%, CP: 19%, DP: 20% (chi-square; $p < 0.0001$). 89% don't have brochures or posters available on this topic. In general, when treating teen ADHD patients, the majority of MDs rarely or never use a medication (Rx) contract (93%), distribute print materials on D/M (89%), limit Rx to a smaller # of pills (64%), or employ pill counts (60%). Most MDs sometimes prescribe non-stimulants (NS) instead of SM (56%) and at least often prescribe long-acting over immediate release (IR) SM (87%). Among MDs who have suspected D/M, most rarely or never use a Rx contract (85%) or distribute print materials (82%) to patients suspected of D/M. Also, when they suspect D/M, the majority of MDs don't often use pill counts (56%), limit Rx to a smaller # of pills (61%), or refer for drug counseling (55%). Most MDs do at least often prescribe NS instead of SM (73%) and prescribe long-acting over IR SM (79%) when they suspect D/M. The majority of MDs rated most prevention strategies as not effective/somewhat effective: Rx contracts (45%/31%), print materials (12%/58%), limiting pill quantity (10%/53%), pill counts (12%/58%), and not prescribing IR SMs (3%/49%). **Conclusion:** About 1/3 of MDs rarely counsel ADHD teens about health & legal consequences of D/M. Though encouraged to utilize D/M prevention strategies, most MDs don't often use them or consider them very effective.

Abstract 116

Does exclusivity in breastfeeding matter?: The impact of exclusivity of breastfeeding on developmental risk in early childhood for low income families

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Purpose:The current study examined the relationship of breastfeeding (i.e., exclusively breastfed, partially breastfed, or not breastfed) on developmental risk as measured by the Parent's Evaluation of Developmental Status (PEDS) among low income children after accounting for child, family, and community variance. **Methods:**Data were obtained from the 2011 National Survey of Children's Health, a nationally representative, cross-sectional survey. An ANCOVA was used to calculate differences among groups after controlling for gender and race/ethnicity and accounting for differences at the community, family, child, and service levels. All analyses were limited to low income children aged 6 months through 5 years for whom breastfeeding data were available (N=27,497). **Results:**There is a significant inverse correlation between PEDS and breastfeeding exclusivity ($r_s = .04$, $p < .001$). A regression analysis demonstrated a statistically significant predictive relationship between the covariates and PEDS, $p < .001$ such that 9.7% of the variance ($R^2 = 0.097$) in PEDS can be explained by the covariates. The ANCOVA model indicated significant differences between PEDS and breastfeeding type [$F(2, 22529) = 8.61$, $p < .001$, Partial $\eta^2 = .001$], with a 95% confidence interval from .70 to .79. Using planned pairwise comparisons, there were significant differences in the PEDS variable between never breastfed and the exclusively breastfed ($MD = -.25^*$), with a 95% confidence interval from .24 to .29. There were also significant differences in the PEDS variable between the never breastfed and the partially breastfed ($MD = .18^*$), with a 95% confidence interval from .15 to .21. Finally, there were significant differences in the PEDS variable between the exclusively breastfed and partially breastfed ($MD = .08^*$), with a 95% confidence interval from -.11 to -.04. **Conclusion:** While it is not surprising that there are differences in developmental risk between infants who were not breastfed and those that were exclusively breastfed, much less is known about the benefits of partial breastfeeding. The current study supports the notion that exclusive breastfeeding does indeed provide additional benefit in reducing developmental risk above and beyond partial breastfeeding as well continuing to support the idea that exclusive breastfeeding provides benefits above and beyond no breastfeeding.

Abstract 117

Physician Perceptions and Knowledge of Diversion of ADHD Stimulant Medications

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Purpose:To gauge perceptions and knowledge of diversion and misuse (D/M) of stimulant medication (SM) among physicians (MDs) who specialize in ADHD. **Methods:**A questionnaire focused on D/M was mailed to 3 sub-specialists (SS): all child neurologists (CN), child psychiatrists (CP), and developmental pediatricians (DP) in the US. Only responses by MDs who currently prescribe SM (n=815) were included in the analysis. **Results:**In the past 12 months, 59% of MDs suspected one or more of their teen ADHD patients were diverting their SM, and 54% believed one or more of their patients were exaggerating symptoms to obtain more SM for D/M. Differences were noted across SS: CN: 42%/42%; CP: 69%/62%, DP: 28%/23% (chi-square; $p < 0.0001$). Whereas 48% of all MDs believed it was common or very common for ADHD teens to divert SM to peers, SS again differed: CN: 23%; CP: 40%; DP: 42% (chi-square; $p < 0.0001$). When evaluating teens for an initial ADHD diagnosis, 66% of MDs suspected that one or more patients in the past year were trying to obtain SM to improve academic performance. Many MDs suspected that one or more patients were trying to gain an ADHD diagnosis and receive SM to either lose weight (40%), get high (38%), or divert SM to others (39%). The majority of MDs received no training on prevention of prescription drug diversion in med school (73%), residency (57%), or fellowship (51%). In terms of educating patients about the health consequences & legal consequences of D/M, 25% and 49% of MDs didn't feel adequately qualified. When asked if there is a difference in the legal consequence of selling versus giving away SM, 19% of MDs answered incorrectly and 36% were unsure. No significant difference existed between SS for this question. **Conclusion:** Many pediatric SS who treat ADHD are aware of D/M of SM; however, differences across SS were noted. While almost half of MDs in this study believe diversion to be common among teens with ADHD, the majority never received training on this topic. Moreover, many MDs do not feel adequately qualified to counsel teens about the associated risks. The medical community must take measures to better prepare MDs to educate their ADHD patients about D/M of SM.

Abstract 118

Improving Care for Children with Autism Spectrum Disorder and Their Families by Training Hospital Personnel: A Quality Improvement Project

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Purpose:Children with Autism Spectrum Disorder (ASD) often present a challenge to hospital personnel inexperienced in caring for this population, thus leading to poor care experiences and forgone care. To address this issue, we developed a training initiative to increase personnel ASD awareness, comfort, and knowledge, and ultimately improve the care experience for patients with ASD. **Methods:**A multidisciplinary team of experienced ASD clinicians developed a 3-part curriculum for non-clinical personnel in 5 outpatient hospital departments frequented by patients with ASD. After a needs assessment, participants completed an online training module and then attended an in-person, case-based seminar tailored to each department. Pre- and immediate post-training surveys assessed personnel awareness, knowledge, and behaviors regarding caring for patients with ASD. We compared pre- and post-training responses using paired t-tests. **Results:**We trained 111 staff members from 5 departments over 7 sessions. On the Needs Assessment, staff (N = 53) reported a mean 2.1 ± 4.2 behavioral incidents involving patients with ASD over the prior 3 months. 90% believed the training would be helpful. 44 participants completed both pre- and post-training surveys. We found a significant change in scores ($p < 0.05$) on all questions related to ASD knowledge and self-reported frequency of behaviors intended to help children with ASD adjust to the hospital, but not on questions related to personnel comfort. On a Program Evaluation (N=38), 85% rated the training as very good or excellent and 87% reported they would be able to apply training material immediately to their role. **Conclusion:** A training initiative was feasible and led to an immediate, significant change in the knowledge and self-reported behaviors, but not comfort level, of hospital personnel working with ASD patients. As next steps, we will conduct an additional survey 3 months post-training to assess whether changes were sustained, and will assess change in the reported care experience of families of patients with ASD over time. We anticipate that our training will improve the quality of care for patients with ASD in our hospital.

Abstract 119

Continuous Performance Profiles among Adolescents Enrolled in Outpatient Substance Abuse Treatment

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Purpose:Attention-Deficit/Hyperactivity Disorder (ADHD) appears to be an independent risk factor for developing substance abuse during adolescence, but it may also adversely affect participation in treatment. The Conner's CPT-II is a computer-administered objective measure of inattention, impulsivity, and other attention-related problems. The CPT-II could be a useful tool at treatment entry to identify high risk youth and help in treatment planning, if proven feasible. **Methods:**40 patients presenting to an outpatient substance abuse program participating in a behavioral therapy trial were invited to complete the CPT-II at baseline. They completed other pre-treatment assessments, including the Timeline Followback Calendar for the trial. We used descriptive statistics and non-parametric comparisons to characterize the sample. **Results:**The sample was 53% male, 63% nonwhite, mean age 17 years. Participants were categorized into one of 4 "substance of choice" groups: alcohol, marijuana, opioid, and combined marijuana-opioid. 48% had one or more co-occurring mental health diagnoses, and 20% had been in a serious accident. The overall sample had clinically significant attentional difficulties (Mean T = 65.0, SD = 14.5), but inattention was not significantly related to number of positive drug screens during the duration of the treatment study (Spearman's rho = .13, n.s.). Those in the opioid-use group, who tended to be older and have significantly more years of drug use, had the worst performance. **Conclusion:** In this small feasibility sample, the CPT-II identified substantial attentional difficulties, particularly among those of older age and more years of use. Prospective research comparing the treatment trajectories based on CPT-II profiles is recommended.

Abstract 120

Evaluation of the PROMIS® Pediatric Family Involvement Measure in Children with Autism Spectrum Disorder: A DBPNet Study

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Purpose:The core symptoms of Autism Spectrum Disorder (ASD) impact participation in family activities and overall family functioning, suggesting family involvement as a potentially important outcome. The recently developed PROMIS Family Involvement measure has not yet been evaluated in children with ASD. **Methods:**Subjects were parents of 5-12-year-old children from three academic medical centers who met DSM-IV or DSM-5 criteria for ASD and scored in the ASD range on a standardized clinical observation measure. Parents completed a demographic form, the FI measure, the Social Responsiveness Scale (SRS), the

Parenting Stress Index Short Form (PSI), and the PROMIS Depression measure. For the PROMIS measures, use of computerized adaptive testing minimizes the number of items given and maintains precision as measured by the standard error (SE); a SE of 0.32 translates to a reliability coefficient of 0.9. The FI measure gives T-scores normed on a nationally representative sample of children (mean=50, SD 10). **Results:**Data from 114 subjects ages 5-12 years (mean=8.0) was analyzed. The FI T-scores were normally distributed (mean=46.3, SD=7.1, range 27.7-64.9). A higher level of ASD symptoms on the SRS-2 correlated with lower FI ($r=-0.37$, $p<0.0001$). The FI and the PSI total score were inversely correlated ($r=-0.37$, $p<0.0001$). No correlation was found between FI and child age or IQ. Parental depression correlated weakly with FI ($r=-0.22$, $p=0.02$). The SEM ranged from 0.26 to 0.32, with 101 subjects requiring 5 or fewer of 15 FI items to achieve such precision. All subjects with FI < 44 had elevated SRS and PSI scores. Of those with high PSI and SRS scores (>70), those with lower education level were more likely to report lower child FI (OR 3.18, 95%CI[1.30-7.79]). **Conclusion:** The PROMIS FI measure may efficiently and precisely measure family involvement in 5-12-year-old children with ASD. Higher ASD severity and parent-child difficulties correlated with lower FI. Parental education was associated with higher odds of reporting lower child FI.

Abstract 121

Copy Number Variants and Dysmorphic Findings in Children with Autism Spectrum Disorders

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Purpose:Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by deficits in social skills, communication, and restricted or repetitive patterns of behavior. Chromosomal microarrays are routinely ordered for children with this diagnosis. Abnormalities on microarrays, termed copy number variants (CNVs), are found in 10-20% of these patients, and 5-10% are considered pathogenic (causative). Studies of various conditions, such as intellectual disability, have demonstrated an increased likelihood of CNVs in the presence of dysmorphic findings. The objective of this study was to determine whether a correlation exists between pathogenic CNVs and dysmorphic findings in children diagnosed with an ASD. **Methods:**Using retrospective chart review, data was collected from Naval Medical Center San Diego. Medical records of patients between the ages of 1-17 diagnosed with ASD by a developmental-behavioral pediatrician from July 1, 2011 - February 28, 2015 were reviewed for documentation of dysmorphic features on physical exam and completion of a microarray test. Exclusion criteria included any patient with a genetic syndrome that is a known risk factor for ASD. Dysmorphic features and microarray test results were tabulated. Charts were reviewed for known risk factors of ASD, including sex and family history of either ASD or schizophrenia. Risk factors for CNVs were also collected, including epilepsy and documentation of global developmental delay or intellectual disability. These risk factors were included as covariates in the analyses. **Results:**528 charts were reviewed with 269 study subjects included in the final analysis. 90 of 269 (33.5%) patients were classified as dysmorphic. 8 of 13 patients (61.5%) with a pathogenic microarray had at least one dysmorphic finding (OR 3.40, 95% C: 1.08, 10.70). The presence of two or more dysmorphic features versus none was statistically significant (OR 5.22, 95% C: 1.52, 17.96) as was the presence of three or more dysmorphic features versus none (OR 6.14, 95% C: 1.35, 27.95). None of the covariates reached statistical significance. **Conclusion:**The findings of this study indicate that children with ASD and any dysmorphic features are more likely to have a pathogenic CNV on chromosomal microarray testing. This study also suggests that an increased number of dysmorphic findings in children with ASD further increases the odds for a pathogenic CNV.

Abstract 122

Young School Age Children Cortisol Response to Stress as a Function of Prenatal Cocaine Exposure and Home Chaos

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Purpose:To examine how the prenatal cocaine exposure and early home chaos are associated with the cortisol response to stress of young school age children. **Methods:**The sample consisted of 113 children (51% boys) who were part of a longitudinal study on the effects of prenatal cocaine exposure. All of the women considered to have used cocaine were positive by both self-report and meconium assay. At both 4 and 6 years of age, we obtained a pre- and a post-stress saliva cortisol samples. At 4 years, a set of scales measuring home chaos was completed by mothers. **Results:**Changes on cortisol at 6 years were most predicted by home chaos ($\beta = -.52$, $SE = .19$, $p = .001$) such that higher levels of home chaos were related to smaller "cortisol reactivity. There was a significant interaction between prenatal cocaine exposure and home chaos for "cortisol ($\beta = .30$, $SE = .33$, $p = .039$). There was a significant difference in "cortisol reactivity between high and low chaos when children were not exposed to cocaine, $U = 808.50$, $Z = 2.65$, $p = .008$, such that low chaos was related to larger cortisol decreases from pre- to post-stress. **Conclusion:** The anticipatory stress is what causes cortisol to increase and this may play a role in preparing children to adjust to challenging situations. While home environment contributed the most to predicting cortisol responses to stress, prenatal cocaine exposure and environment interacted and influenced this response. Our findings suggest focal points of intervention and policy development for at-risk

population.

Abstract 123

ANXIETY AND DEPRESSION DISORDERS IN CHILDREN WITH CHRONIC RENAL FAILURE UNDERGOING HAEMODIALYSIS

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Purpose:Chronic renal failure is a significant stressor with a psychological impact on the children and their family.The aim of this study was to estimate the prevalence of anxiety and depression among children on dialysis and to study some of the multifactorial risk factors. **Methods:**This study was conducted on 55 children aged (7-18) years.Children manifest anxiety scale and Children depression inventory scale was used for the assessment of anxiety and depression symptoms. **Results:**All patients had anxiety. 11 patients with mild anxiety, 22 patients with moderate anxiety, 22 patients with severe anxiety. As regard depression, there were 30,9% with mild depression,32,7% with moderate depression,9,1% withsevere depression. We found a significant relationship between prevalence of anxiety and adequacy of dialysis, duration of dialysis, socioeconomic status.As regard depression, we found a significant relationship between the prevalence of depression and age,hemoglobin level,however we didn't find a statistically significant relationship between anxiety, depression and others risk factors including: gender, residency, school attendance, complete family structure, family history of renal disease, presence of close friend, number of dialysis session per week. **Conclusion:** It is concluded that there is significant increase in the prevalence of anxiety and depression among CRF children on haemodialysis

Relation between anxiety and depression and many risk factors

Anxiety	Test of sig	P value
Dialysis adequacy	Chi sq=5.626	MCp = 0.053
DialysisDuration	chi sq = 6.209	0.045
SES	Chi sq= 9.094	0.047
Depression		
Age	Chi square=4.160	0.041
mean Hg	t=2.367	0.022