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Abstracts

Abstracts of Papers Accepted for Presentation at the Annual Meeting of the Society for Developmental and Behavioral Pediatrics

Plenary Session I
Sunday, September 17, 2006 9:15 a.m. – 10:00 a.m.

Abstract # 1

Caretaker Report in Neurodevelopmental Screening of High-Risk Infants, Glen P. Aylward[1], Steven J. Verhulst[1]; [1]SIU School of Medicine-Pediatrics, Springfield, IL; [2]SIU School of Medicine-Statistics & Research Design, Springfield, IL.

Purpose/Background: There is increasing interest in use of parent report in developmental screening. However, application of caretaker report in screening of high-risk infant populations has not been investigated adequately. Purpose. 1) To compare a caretaker-completed neurodevelopmental prescreening questionnaire (NPQ) to a hands-on screener (Bayley Infant Neurodevelopmental Screener; BINS); 2) to identify factors that influence agreement, and 3) to clarify if agreement differs across areas of neurodevelopmental function. **Methods:** Of a total of 1436 infants drawn from 5 university affiliated centers, 471 were prospectively evaluated at 6-months corrected age, 376 at 12-months, and 244 at 24-months, in a mixed longitudinal/cross-sectional design. Of these, 55% were male, 28% African-American, 70% Caucasian, 3% "other;" M gestational age = 31.2 weeks (40% < 28 weeks) (SD = 5.08), birth weight 1568 g. (965), days hospitalized 46.76 (34.7), maternal education 13.45 years (2.69), paternal education 13.44 (2.44); 39% had IVH, 60% RDS. Caretakers completed the NPQ (11–13 items), based on the BINS, while watching a video depicting infants engaged in items. The BINS was subsequently administered by examiners blinded to NPQ score. BINS items were scored optimal (1) or non-optimal (0) and scores were summed to determine risk status. The NPQ was scored on a 1–5 point Likert scale (4 and 5 were optimal). **Results:** Sensitivity/specificity, PPV and NPV are found in the table. M difference between BINS and NPQ was .517, .868, .669 at 6-, 12-, and 24-months ($p < .0001$), with NPQ being lower in each case. When sensitivity and specificity were evaluated within the low, moderate, and high-risk BINS groupings, M sensitivity/specificity in low risk = 72/74, moderate risk = 70/51, high risk = 92/100; M agreement was 74%, 60%, and 97% respectively. BWT, GA, RDS, IVH, days hospitalization, 5' Apgar, gender, race, asphyxia, maternal/paternal education, occupation, and BINS risk status were compared between cases of agreement/non-agreement via chi square, t-tests, and logistic regression. All were non-significant at 6-months except BINS risk; OR = 1.966 (CI-1.33–2.9), $p = .0001$; the same occurred at 12-months OR = 2.441 (CI-1.39–4.3), $p = .003$. At 24-months, maternal occupation, race, RDS, and IVH were significant ($p = .02$–$.001$; OR's 1.64–9.2); BINS risk was not significant. **Conclusions:** Background biomedical and environmental variables are not directly related to caretaker-screener agreement prior to 24-months; however, infants' developmental status influences agreement. Agreement is best in infants at high and low risk; it is poorest in those at moderate neurodevelopmental risk. Demographic variables are more influential at 24-months. Overall, parents tend to underestimate abilities, however this may be due to familiarity with, and type of developmental items employed.

	Sensitivity	Specificity	PPV	NPV	Agreement
5–6 months	80%	57%	71%	70%	70%
11–15 months	91%	57%	72%	84%	76%
21–24 months	86%	82%	77%	90%	83%

Abstract # 2

Do Children with Down Syndrome Have a More Atherogenic Lipid Profile Compared to a Sibling Control Group? Tahira G. Adelekan[1], Nicolas Stettler[2]; [1]The Children's Hospital of Philadelphia, Philadelphia, PA; [2]The Children's Hospital of Philadelphia, Philadelphia, PA.

Purpose/Background: Historically, individuals with Down syndrome (DS) have been considered protected from atherosclerotic vascular disease; however, recent data suggest that compared to the general population, individuals with DS may have an increased mortality from ischemic heart disease and cerebrovascular disease. Furthermore, individuals with DS are at increased risk for obesity and diabetes mellitus, which are known risk factors for atherosclerotic vascular disease. Conflicting results have been published regarding lipid profiles, another known risk factor for atherosclerotic disease, in individuals wiwith DS. The purpose of this study is to determine if there is a difference in serum total cholesterol (TC), low density lipoprotein (LDL), high density lipoprotein (HDL), and triglycerides (TG) between children with DS and a control group, composed of one of their siblings, in order to adjust for shared genetic familial factors. We hypothesized, that compared to their siblings; the children with DS have higher TC, LDL, TG and lower HDL, all of which are part of a more unfavorable lipid profile. The secondary aim was to explore if the difference in lipid profiles could be explained by differences in weight status. **Methods:** This study was performed as part of a longitudinal study of growth and nutrition in children with DS (n = 35) and their unaffected siblings (n = 33) age 3 to 10 years and with no severe co-morbidities (heart disease, cancer, hypothyroidism, or obesity). Weight (kg) and height (m) were measured in triplicate and used to calculate body mass index (BMI). As BMI changes throughout childhood and differs by sex, BMIz scores were utilized to account for these differences. Fasting TC, LDL, HDL, and TG were obtained from each group and compared using generalized estimating equations (GEE) to account for the lack of independence between the groups. **Results:** The mean total cholesterol in children with DS was 10.8 + 5.1 mg/dL higher than in sibling controls ($p = .037$). The children with DS had lower HDL (−6.12 mg/dL, +/−2.14; $p = .004$),

higher LDL (10.9 mg/dL, +/−4.4; $p = .01$) and higher TG (27.8 mg/dL, +/−9.19; $p = .002$) than the controls. Results remained essentially unchanged after adjustment for age, sex, race, ethnicity and income. After further adjustment for BMIz, the results remained statistically significant. **Conclusions:** When compared with a group of unaffected siblings, and after adjustment for important confounding variables, including shared genetic and familial factors, children with DS had lower HDL, higher TC, higher LDL and higher TG, thus a less favorable lipid profile. These differences in lipid profile remained significant after adjustment for body mass. With the increasing life expectancy of individual's with DS and the existence of other cardiovascular risk factors, it is important to assess lipid profiles and to implement primary prevention for cardiovascular disease in this population. Further research is necessary to determine if the lipid profile in these children with DS is related to the gene expression of chromosome 21 and whether the differences seen in these children persist into adulthood.

Mean Differences in Lipid Profile Variables Adjusted[a]

	Mean Difference Adjusted[a]	95% Conf. Interval	*p* Value
TC	12.9 mg/dL	1.9–23.7	0.02
HDL	−6.9 mg/dL	−11–−2.7	0.001
LDL	12.5 mg/dL	3.6–21.3	0.005
TG	30.6 mg/dL	11.4–49.8	0.002

[a]Adjusted for age, sex, race, ethnicity and income.

Abstract # 3

Prevalence of Diagnosis and Medication Treatment for Attention Deficit Hyperactivity Disorder In Patients With Spina Bifida, Scott W. Stuart[1], Michelle M. Macias[1], Conway F. Saylor[2]; [1]Medical University of South Carolina, Charleston, SC; [2]The Citadel, Charleston, SC.

Purpose/Background: There is minimal published evidence to support the clinical observation that patients with Spina Bifida (SB) have a higher prevalence of Attention Deficit Hyperactivity Disorder (ADHD). Our hypothesis is that the prevalence of diagnosis and medication treatment for ADHD in patients with SB is greater than that observed in the general population (7.8%). **Methods:** This was a retrospective chart review for all SB clinic patients enrolled for care at a Southeast United States, tertiary care center, multi-disciplinary SB clinic. Patient information was extracted from electronic and paper medical records. Inclusion criteria included an age of >7 years old at last documented hospital visit and had a diagnosis of spina bifida, specifically myelomeningocele or lipomeningocele. Patients were then divided into three categories: (1) documented diagnosis of ADHD (all sub-types), (2) documented concern for ADHD (all sub-types), or (3) no diagnosis of ADHD. Documented history of having ever used medications for treatment of ADHD was also analyzed. **Results:** Of the 151 patients enrolled at the SB clinic, 96 (63.5%) met inclusion criteria. Excluded patients included <7 years old (24.1%), non-qualifying diagnosis (6.6%) and insufficient data (5.3%). The ethnicity distribution was equivalent to South Carolina normative values (62.5% white, 34.4% black, 1.0% Hispanic, and 2.1% Native American). Sixty-two patients (64.6%) did not have supporting documentation for a diagnosis or concern for ADHD. Eleven patients (11.5%), 72.7% male and 27.3 % female, had documented concerns for ADHD. This male to female distribution 2.7:1 is consistent with national values of 3–4:1. Twenty-three patients (24.0%), 47.8% male and 52.2% female, had a diagnosis of ADHD. This male to female ratio of 0.92:1 varies from the national values. All 23 patients (100%) had documentation of ever using medications for the treatment of ADHD. This demonstrates a prevalence of 24% for the diagnosis and treatment of ADHD in SB. **Conclusions:** In this data, the prevalence of diagnosis and medication treatment for ADHD in patients with SB is three times greater than that observed in the general population. Given this, physicians providing routine care to patients with SB should establish routine screening for ADHD to provide early intervention for ADHD and minimize secondary behavioral and learning impairments.

Abstract # 4

From Innocence to Awareness: Life Experiences of Children, Adolescents and Young Adults with Disabilities, Susan Speraw; University of Tennessee, Knoxville, TN.

Purpose/Background: This research illuminated the experience of children, adolescents and young adults living with disabilities. This group, vulnerable by both age and disability is little studied. Because their perspective is lacking, health professionals who work with them are hampered in efforts to provide optimal care. **Methods:** 25 participants included children, adolescents and young adults between 7 and 30 years; able to understand spoken English, and respond verbally; with physical, cognitive, developmental and/or emotional disabilities that spanned a wide range; who gave consent or assent, or whose parent or legal guardian gave consent; and who were in sufficiently good health that they participated without risk. Recruitment was through announcements to listservs targeting specific disabled populations or to organizations that serve disabled individuals, and by referral. Using a qualitative approach to explore the experience of disability is consistent with the caring philosophy of health professions. Phenomenology, the theoretical approach used here, focused on the immediacy of human experience, and reduced pitfalls of bias associated with using forced response questionnaires for those with developmental limitations. Interviews were audio-taped and transcribed. Themes revealed the essential structure of the experience of living with disability. A unified description of the phenomenon resulted. Analysis reliability was achieved when scholars from several disciplines scrutinized transcripts and their interpretation. To verify accuracy participants had the opportunity to comment on the description of their collective experience. **Results:** A process of moving from the innocence of childhood to the painful awareness characteristic of early adulthood is described. Along the way children realized the extent of their vulnerabilities and differences. Families could provide support by enabling children to develop their strengths and focus on abilities; they could not compensate for the realities of exclusion by peers, hurtful school incidents, or limitations on life events such as childbearing that "normalcy" would allow. Exploitation and cruelty were among the dangerous threats that participants shared. Health professionals did little to encourage quality of life, ignoring problems, giving mixed messages encouraging independence and thwarting it, and at times being disrespectful or dehumanizing. **Conclusions:** The research makes progress in filling a gap in the understanding of childhood, adolescent and young adult disability. It gives accurate information that health professionals need as a foundation for patient relations and improved practice. Findings can help professionals support the dignity of the disabled, and provide care reflecting a high value placed on their perceptions and place in the world.

Plenary Session II
Sunday, September 17, 2006 10:45 a.m. – 11:40 a.m.

Abstract # 5

The Effects of a Stress Management Technique on Elementary School Children, Denise A. Bothe[1,2], Karen N. Olness[1,2]; [1]Rainbow Babies and Children's Hospital, Cleveland, OH; [2]Case Western Reserve University, Cleveland, OH.

Purpose/Background: To test the effectiveness of a brief stress management technique delivered daily in the classroom on measures related to stress-related symptoms in elementary school children. **Methods:** The design is a randomized controlled study with pre and post measures. Participants were in 2 third grade classrooms at a public school, with 15 in the intervention group and 13 in the control group. In the intervention group the teacher was trained to perform a stress management (SM) technique with the children during a fixed 10 minute period each school day. The SM technique centered on deep breathing, movement, and guided imagery. The teacher in the control classroom spent 10 minutes

per day reading aloud to the class. Measures included a self report anxiety scale, using the Revised Children's Manifest Anxiety Scale (RCMAS), heart rate variability using the Freeze Framer computer biofeedback program (HeartMath), and grades using Proficiency scores and a math test. Measures were collected before the start of the intervention, after the experimental period of 4 months, and one year later. Qualitative data was also collected from the teacher and each child after the intervention. Repeated measures ANOVA was used to assess changes over time in scores for the intervention and control classrooms between baseline and 4 months, and between baseline and 1 year. **Results:** Between baseline and 4 months there was a significant decrease in mean total anxiety T-scores on the RCMAS for the intervention classroom ($F = 7.42$, $p = .01$), and no change in the control classroom. There was a trend toward improvement of heart rate variability in the intervention classroom. Between baseline and one year there was a significant improvement in heart rate variability in the intervention group ($F = 10.61$, $p = .005$). The change in the anxiety scores between baseline and one year follow up continued to show a trend toward improvement. The intervention had no significant impact on proficiency scores or the math test. Children reported that the stress management intervention was enjoyable and helped them during stressful times in school and at home. Children also reported that, following the conclusion of training, they continued to use the stress management techniques. **Conclusions:** A short daily stress management intervention delivered in the classroom setting in elementary school can decrease feelings of anxiety, and improve a child's ability to relax. In addition, the technique was adopted by many of the children who continue to use it in their daily lives to help them cope with stressful circumstances.

Abstract # 6

The Friend To Friend Program: Initial Evaluation of A School-Based Aggression Prevention Program for Inner-City African American Girls, Stephen S. Leff; [1]The Children's Hospital of Philadelphia, Philadelphia, PA; [2]Univ. of Pennsylvania School of Medicine, Philadelphia, PA.

Purpose/Background: Low level bullying occurs regularly in elementary school (Nansel et al., 2001). Research indicates that while both girls and boys are aggressive, boys typically use physical aggression (i.e., hitting, and pushing) while girls usually use relational aggression (i.e., gossiping or threatening to withdraw friendships; Crick & Grotpeter, 1995). In addition, most aggression interventions have been designed for and/or are more successful with boys than girls (see Leff et al., 2001). Thus, there is a need to develop aggression intervention programs that are targeted for relational aggression. The current presentation will illustrate how a partnership-based approach was used to establish the Friend to Friend (F2F) Program and establish its initial effectiveness and acceptability through a randomized trial. F2F combines a social information processing theory of aggression (e.g., Crick & Dodge, 1994) and an ecological/systems model of development (e.g., Bronfenbrenner, 1986) with a partnership-based model of program development (e.g., Nastasi et al., 2000). The program strives to decrease girls' levels of relational and physical aggression and tendency to make a hostile attributional bias, while increasing their range of prosocial behaviors. The 20-session group intervention and 8 classroom sessions are co-led by a research team member and a teacher. Cartoons, role plays, and videotaping are the central modalities used to teach relationally aggressive girls (and participating non-aggressive girls) to identify signs of physiological arousal, learn basic anger control strategies, accurately assess others' intentions, and generate alternatives to challenging social situations. **Methods:** Three hundred and sixty one 3rd–5th graders (97% of the sample was African American) from two inner-city elementary schools participated in the initial evaluation of F2F. These individuals completed an unlimited peer nomination procedure, and 32 girls were designated as being relationally aggressive (>.50 SD on relational aggression) for the purposes of the study. The relationally aggressive girls were then randomized to the F2F intervention or to a control condition (referral to the school counselor). **Results:** Analyses comparing change scores from pre- to post intervention indicated that relationally aggressive girls randomly assigned to the intervention exhibit considerably less teacher-reported relational (ES = 0.64) and physical aggression (ES = 0.38), and are rated by teachers as considerably better liked by peers (ES = 1.73), and exhibit less of a hostile attributional bias in relationally provocative social situations (ES = 0.58) then relationally aggressive girls randomly assigned to the control condition. Further, the program was rated as highly acceptable and feasible from the perspective of participating students, teacher, and parents. **Conclusions:** The design of intervention programs in partnership with key school and community stakeholders holds great promise for meeting the needs of urban, ethnic minority youth. Further, developing a program in this manner illustrates that the resulting program likely will be acceptable, feasible, and hopefully sustainable over time.

Abstract # 7

Early Reading Readiness in Young Children With Speech Sound Disorders, Laura Sices, Lisa Freebairn, Amy Hansen, Stephanie Serna, H. Gerry Taylor, Barbara Lewis; Case Western Reserve U., Cleveland, OH.

Purpose/Background: Speech sound disorders (SSD) are common in young children. Although speech and language disorders in early childhood are a risk factor for later reading disabilities, little is known about the association between SSD and early reading skills before school age. We sought to characterize early reading readiness among young children with SSD, and identify factors associated with early reading readiness skills in this population. **Methods:** Subjects were 125 children aged 3–6 years receiving speech therapy services for SSD in a metropolitan area in Northeast Ohio. All children had scores below the 10th percentile for age on the Goldman Fristoe Test of Articulation (GFTA), and performance IQ scores >80. Subjects were recruited from a larger study of the genetics of SSD; the sample was 64% male and 87% white; 53% had co-existing language impairment. Reading readiness was assessed using the Test of Early Reading Ability (TERA). Linear regression was used to examine the association between the severity of SSD and scores on the TERA, and ANOVA to examine the effect of co-morbid language impairment. Performance on a battery of speech-language tests was reduced via factor analysis to composites for articulation, narrative skills, grammar, and word knowledge. The battery included 2 additional measures of phonological processing which did not cluster onto a composite. Regression analysis was conducted to identify speech/language skills associated with performance on the TERA. **Results:** Socio-economic status (SES) was independently associated with performance on the TERA ($p < .05$), but sex was not. After adjusting for SES, we found a significant association between more severe SSD and lower scores on the TERA ($p < .05$). There was also a significant association the presence of co-morbid language impairment (LI) and lower scores on the TERA ($p < .05$). Furthermore, after adjusting for LI, the relationship between SSD severity and TERA scores was no longer significant. All speech/language composites, as well as 1 of 2 measures of phonological processing, were significantly correlated with the TERA. Regressions revealed that only composites for grammar and word knowledge were independently associated with performance on the TERA, even after adjusting for performance IQ, but that the measures of phonological processing were not. **Conclusions:** Both language and speech/articulation skills were related to performance on a measure of reading readiness in young children with speech sound disorders. Suboptimal language skills, particularly in the areas of grammar and word knowledge, place a child at increased risk for deficits in early reading readiness skills, which may have implications for the later development of reading disability. These results suggest that in addition to phonological processing skills, other language skills are important in

the development of reading readiness. These findings provide added incentive for pediatricians to identify and refer affected children for assessment and treatment services in a timely way.

Abstract # 8

Comparison of a General Developmental Screening Tool and an Autism Specific Screening Tool in Autistic Spectrum Disorder (Asd) Assessment, Lisa Young[1], Jennifer A. Pinto-Martin[1], Anna Warszawa[1], Ellen Giarelli[1], Susan E. Levy[2]; [1]University of Pennsylvania School of Nursing, Philadelphia, PA; [2]Children's Hospital of Philadelphia, Philadelphia, PA.

Purpose/Background: The increasing prevalence of Autism Spectrum Disorders (ASD) has generated increased interest in identifying children with ASD at a young age. There is much discussion in the literature regarding best practices for screening and early identification. Some argue that at a young age, a general developmental screening tool at a first level (and then autism specific screening if the child fails) is as effective as using an ASD-specific tool at selected intervals to screen all young children. **Objective:** Determine the utility of using a general developmental screening tool compared to an autism specific tool when screening for ASD. **Methods:** An ongoing study to improve Developmental Delay (DD) and ASD screening practices in an urban pediatric primary care practice is underway. Data has been collected on the use and results of a standardized general developmental screening tool, the PEDS (Parents' Evaluation of Developmental Status) and an autism-specific screening tool, the Modified Checklist for Autism in Toddlers (M-CHAT) in children ages 15 to 30 months. Assessments are complete for 66 children (55% male, mean age 23 months, 41% African American, 30% Caucasian, 15% Biracial, 14% Asian). The sensitivity, specificity, and positive predictive value of the PEDS compared to the M-CHAT in identifying young children at risk for ASD was computed. While the sensitivity of the PEDS compared to the M-CHAT was 77.8%, the specificity was only 26.3% and the positive predictive value was just 14.3%. **Results:** Preliminary analysis indicates that in this urban pediatric population the PEDS as a first line screen is not a good substitute for the M-CHAT when screening for ASD, as children who screen negative for general developmental concerns may score positive on the M-CHAT. **Conclusions:** Specific red flag items for autism, included in ASD-specific screening tools, may not be adequately examined in a this specific general developmental screening tool. These findings should be replicated in a larger population with greater ethnic diversity. Sponsor: Centers for Disease Control and Prevention.

Abstract # 9

Providing ADHD Services In Primary Care: The Perspective of Primary Care Physicians, Thomas J. Power, Nathan J. Blum, Jennifer A. Mautone, Leslee Frye; The Children's Hospital of Philadelphia, Philadelphia, PA.

Purpose/Background: The purpose of this project was to develop and administer a needs assessment survey (ADHD Questionnaire for Primary Care Providers [AQ-PCP]) to the PCPs throughout our hospital's primary care network (n = 185). Primary care physicians (PCPs) have an important role in the identification and treatment of attention-deficit/hyperactivity disorder (ADHD). Assessing and treating ADHD in an effective manner involves many components, including collaboration with families, school professionals, and mental health providers. It is important to identify which components of care are appropriate and feasible for PCPs to perform and which need to be triaged to tertiary care providers. Also, it is important to identify the technical support needed by PCPs to provide care for these children in a manner that is within their scope of practice. **Methods:** The AQ-PCP is a self-report measure that was designed to assess PCP views about the extent to which elements of the ADHD assessment and treatment process are appropriate and feasible for PCPs. The measure was developed and refined by conducting focus groups and interviews with 29 PCPs. The AQ-PCP includes 24 items rated on a 4-point Likert scale (1 = not at all; 4 = very much) to indicate the appropriateness and feasibility of various assessment and treatment activities within a primary care practice. Surveys were distributed to the PCPs by the managers of each practice. **Results:** Responses from 102 out of 185 PCPs were obtained, representing a total response rate of 55%. Results indicated that PCPs perceive activities related to obtaining information from teachers to be highly appropriate for them (M = 3.52), but generally not feasible (M = 2.03). Also, PCPs indicated that assessing comorbid internalizing conditions was somewhat appropriate (M = 2.90), but lacking in feasibility (M = 2.32). Further, PCPs reported that providing recommendations for behavior modification strategies to families was appropriate (M = 3.06), but not feasible (M = 2.40). **Conclusions:** Although PCPs consider the assessment and treatment of ADHD to be appropriate within their practices, components of the process are not feasible (e.g., connecting the family, school, and primary care systems to obtain data and coordinate treatment). The findings suggest a three-fold strategy to supporting ADHD services in primary care: (a) training and consultation for PCPs to improve their capacity to provide care, (b) establishing criteria for referral to a tertiary-care ADHD center, and (c) developing practice-based resources to promote collaboration with schools and mental health professionals and to provide support for families.

Poster Session
Sunday, September 17, 2006 6:00 p.m. – 7:00 p.m.

Abstract # 10

Are Children with Autistic Spectrum Disorder Diagnosed Before 2 Years of Age Different Clinically from Older Children Diagnosed after 2 Years of Age? Rosa Seijo, Maria Valicenti-McDermott, Nancy Tarshis, Debbie Meringolo, Lisa Shulman; AECOM-Kennedy Center, Bronx, NY.

Purpose/Background: By definition, the onset of Autistic Spectrum Disorder (ASD) is before 3 years of age. There is increasing evidence that clinicians can reliably identify children on the autism spectrum as young as 2 years of age, and symptoms of ASD and related disorders may be identifiable in even younger children. Studies have shown that children with ASD looked different on home videos at 12–30 months than typically developing children. There are few studies that focused in children with diagnosis of ASD before age 2 but the information is controversial. Hand flapping, toe walking, sustained odd play and severe language deficits were associated with decreases in the age of diagnosis. On the other hand, the literature also reports that children with ASD with early vs. late onset of symptoms were not found to differ on their cognitive level, verbal skills and observational measures of autism symptoms severity. The purpose of the study is to characterize the clinical presentation of children diagnosed with ASD before age 2 in terms of chief complaint, cognitive, language skills, mannerisms, play and family history and to assess whether their presentation differs when compared to children diagnosed after age 2. **Methods:** Retrospective chart review of 53 children between ages 1 to 3 presenting to a University Affiliated Program for multidisciplinary evaluation from 2003 to 2005, who received a diagnosis of an ASD. The multidisciplinary evaluations consisted of pediatric neurodevelopmental, speech and language and psychological evaluations. Play and language skills were assessed using the Westby Play Scale and the Rossetti Infant-Toddler Language Scale. Cognitive/developmental levels were assessed using the Bayley Scales of Infant and Toddler Development. The Childhood Autism Rating Scale (CARS) was completed on each child. Statistical analysis included relative proportions, Chi-square statistics and independent T sample test. **Results:** 23/53 were under 24 months (age range 14–24 months)at the time of the evaluation. Children younger than 2 were more likely to have a history of behavioral regression noted by the parents (41% vs. 10% $p = .01$), a family history of psychiatric problems (56% vs. 17% $p = .004$) and a family history of autism (26% vs. 3% $p = .03$) than children older than 2. We did not find differences in the

chief complaint, cognitive level, language and play skills, presence of mannerisms and level of maternal education between the two groups. **Conclusions:** Although children diagnosed with ASD under age 2 are not so different clinically from older children with this diagnosis, they are more likely to have an increased family history of psychiatric and autistic disorder. Parents of these young children may be more likely to seek earlier developmental evaluation.

Abstract # 11

Clinical Features of Young Children with Autistic Spectrum Disorders With and Without a Reported History of Regression, Lisa H. Shulman[1], Oscar Purugganan[1], Nancy Tarshis[1], Maria del Rosario Valicenti-McDermott[1], May Chan[2]; [1]Albert Einstein College of Medicine, Bronx, NY; [2]New York City Department of Education, New York, NY.

Purpose/Background: Approximately 20 to 30% of parents of children diagnosed with Autistic Spectrum Disorders (ASD) report a history of language and/or social regression, generally occurring between 15 and 21 months of age. Analysis of family videotapes of infants made prior to the described language regression has confirmed this to be a pattern in a minority of young children ultimately diagnosed with ASDs. This group of children is of particular interest to many researchers and clinicians as it may represent a distinct subgroup with a common etiologic factor that may distinguish it from the more heterogeneous group of children with ASDs. There is a paucity of detail in the literature comparing the clinical features of children with ASD with and without a history of regression. The purpose of the study is to compare demographic characteristics, play skills, expressive and receptive language skills, cognitive/developmental functioning and autistic symptom severity between children with ASD with and without a history of language regression. **Methods:** Retrospective chart review of 60 children between ages 1 to 3 years who received a diagnosis of an ASD after a multidisciplinary evaluation at a University Affiliated Program from 2004 to 2005. The multidisciplinary evaluation consisted of pediatric neurodevelopmental, speech and language and psychological evaluations. The diagnosis of autism was based on DSM IV criteria, the Childhood Autism Rating Scale (CARS), and clinical impression. Language regression (LR) was defined as parental report of the loss of at least one or more words paired with the loss of communicative intent, social and/or imitative skills. Play skills were assessed using the Westby Play Scale and language was assessed using the Rossetti Infant Toddler Language Scale. For both play and language, a Quotient was calculated which represents the level at which the child was performing relative to the child's chronological age. Cognitive/developmental levels were assessed using the Bayley Scales of Infant and Toddler Development. Statistical analysis included Chi-square and independent T tests. **Results:** Of the total sample, 31 (52%) were diagnosed as having autism and 29 (48%) as ASD. The mean age at evaluation was 26 +/− 6 months and 47 (78%) were boys. Of the 60 children, 25 (42%) had history of LR. Children with a history of LR had a greater delay in language expression (Language Quotient 34.4 +/− 4) than those without a history of LR (45.6 +/− 3). There were no significant differences in terms of developmental diagnosis (autism in LR 60% vs. 45% in no LR), age at evaluation (LR: 28 +/ 8 mo. vs. no LR: 26 +/− 7 mo.), gender (LR 76% boys vs. no LR 80%), play skills (Play Quotient LR: 56 +/− 18 vs. no LR: 56 +/− 16), language comprehension (Language Quotient LR: 32 +/− 19 vs. no LR: 39 +/− 20) and autistic symptom severity (CARS LR: 37 +/− 5 vs. no LR: 36 +/− 5). There was no statistical difference in the cognitive level between the groups (MDI below 50 LR: 71% vs. no LR 72%). **Conclusions:** Children with ASD and history of LR presented with similar demographic characteristics, play skills, cognitive level and autistic symptom severity as children with ASD without history of LR. In terms of language, expressive language skills were significantly lower in children with history of LR than in those without a history of LR, without differences in receptive skills.

Abstract # 12

Withdrawn

Abstract # 13

What Can We Counsel Regarding Neurodevelopmental Outcome of Extremely Low Gestational Age Infants (23–25 Wks)? Nagamani Beligere, Milette Oliveros; University of Illinois at Chicago Medical Center, Chicago, IL.

Purpose/Background: Improved perinatal and neonatal care has resulted in increased survival of ELBW infants, both in normal pregnancy, as well as in assisted reproductive technology. Neonatal survival rate for <23 weeks GA, is estimated to be 15% and improves at 24 weeks by 30% and 25 weeks by 50%. ELBW Infants are subject to significant morbidities, with varying results in different institutions. The lack of information regarding the neurodevelopment outcome of infants of extremely low gestation 23, 24, 25 wks is a concern for parent counseling to make objective decisions before the delivery of the infant by both, the obstetrician and neonatologist. We report the study of Neurodevelopmental outcome of 120 infants, at GA of 23–25 wks delivered, cared and followed at Developmental Follow up Clinic of University of Illinois Medical Center for the last 10 years. **Methods:** This was a retrospective review of the medical records of infants followed in the Developmental Follow up Program (DFUP) during 1994–2004. The data included pertinent perinatal neonatal history of 220 infants born at 23, 24, and 25 wks of GA. Only 120 infants followed in DFUP for a period of two to three years. All infants were evaluated at 2,4,8,12,18.24,30, and 36 months. During the clinic visit all children were assessed by a Developmental pediatrician for neurological outcome using Ameil-Tison neurodevelopment tool, and were also independently assessed by Standardized Bayley-II Infant Motor Scale, by the OT, PT/DT. Speech and Language was assessed by S/T using Early Childhood Language Developmental Scale. **Results:** Complete data for analysis were available on 114 infants. The table below shows Neonatal Morbidity and developmental outcome data. There was no significant difference in birth weight between 24 and 25 wks. Normal development was found in only 29 infants, Mild delay was found in 54 infants, severe delay was found in 24 infants, there were 4 infants with CP. Three infants in 23 wks, were excluded from further analysis. No significant differences were found in neonatal morbidity of BPD, ROP, need for laser surgery, or vision, hearing impairment, and speech delay at 3 years. Significantly there were twice the number of normal infants found by Bayley among 25 weeks GA, than 24 Wks GA group i.e., 30% vs 16.1%, $p < .05$, and Severe delay in 24 wks GA was twice that of 25 wks GA 30% vs 14%. Morbidity of IVH was seen 1.56 times higher among 24 wks, compared to 25 wks GA (28% vs. 15%, $p < .05$. **Conclusions:** These data suggest infants born at 25 wk have significantly 2 times better neurodevelopmental outcome than at 24 wk gestation, thus promising the beneficial effect in prolonging gestation by a week. This information may help physicians to provide counseling to parents of Lower GA, thus help them make objective decisions regarding the action plan.

Neonatal Morbidity and Neurodevelopmental Outcome at 3 Years

GA Wk	NO	BW ± SD	Apgar Score	BPD	IVH	ROP	ABR Failed	*Normal MDI/PDI >85–100	*Mild Delay MDI/PDI >70–84	Severe Delay MDI/PDI <69	Visual Defect	Hearing Loss	CP
23	3	610 ± 113	3 at 1; 6 at 5	2	3	2	2						
24	56	674 ± 103	4 at 1; 7 at 5	23	15*	42	7	10* (16.1%)	28	16* (30%)	3	5	2
25	55	740 ± 135	7 at 1'	19	9	42	6	19 (30%)	25	8 (14%)	4	3	2

*Significant differences between the 24 and 25 wks gestational age among normal and severe delay ($p < .05$).

Abstract # 14

An Open Label Study of the Use of Dronabinol (Marinol) in the Management of Treatment-Resistant Self-Injurious Behavior in 10 Retarded Adolescent Patients, Tarah Kruger, Ed Christophersen; Children's Mercy Hospital, Kansas City, MO.

Purpose/Background: In the treatment of severely disturbed children, the control of self-injurious behavior (SIB) which occurs in a small percentage of these children, must be given a high priority (Powers, 2001). Lorenz (2004) reported on the therapeutic use of cannabis (in a liquid preparation) in children with combinations of neurological disorders (6 of the 8 also had epilepsy), with improvements. **Methods:** Ten patients (ages 11 to 17) with SIB from a convenience sample, with varying degrees of retardation and autism, received Marinol 2.5 mg bid up to 5 mg qid. The patients had failed to respond to a number of medications, ranging from 4 previous medications to 17, including four who had tried naltrexone (two of whom were still on it and two who had discontinued it due to negative side effects). **Results:** Seven of the ten had a significant improvement in the SIB and their overall mood/well being as reported by caregivers. Two experienced agitation from the Marinol and it was discontinued. Five of the seven who responded had no change in their appetites, and the two that did, benefited from that effect. At follow up to 6 months out, patients continued to respond favorably to the Marinol. **Conclusions:** In a series of patients who presented with treatment-resistant self-injurious behavior, eight of the 10 showed an improvement in their behavior when treated with Marinol without serious enough side effects to merit discontinuing the medication. At 6 month follow-up, seven of the 10 continued to benefit from the Marinol, and the eighth patient had discontinued the medicine due to a change in her living situation. The tolerability of Marinol in this study is consistent with the experience of Lorenz (2004) whose patients presented with a variety of neurological disorders but not specifically SIB.

Outcome of Marinol in adolescents with SIB and MR

Age	Gender	Co-Morbid Diagnoses	# Previous Medications	Dose (mg/kg/d)	Outcome
11	M	Visual impairment	17	0.6	+
13	M	Aphasia	9	0.2	+
13	M	PDD-NOS	14	0.24	+/−
17	M	Angelman Syndrome, Aggression	9	0.09	agitation
16	F	Autism, Hearing Impaired	12	0.36	+
17	M	Autism, Hearing Impaired	4	0.3	+
14	M	Autism	11	0.14	agitation
13	F	Hyperactivity	13	0.15	+ ***
16	M	Autism, Hyperactivity	8	0.3	+
14	M	Fragile × Syndrome, Aggression	11	0.2	+

***Marinal was discontinued due to a change in her living situation.

Abstract # 15

Feasibility Study of a Mid-Level Developmental-Behavioral Pediatric Assessment, Desmond P. Kelly, Mark C. Clayton, Nancy R. Powers, William H. Wiist, Anna L. Cass, Jeannine Jacobs; Division of Developmental-Behavioral Pediatrics, Children's Hospital, Greenville Hospital System, Greenville, SC.

Purpose/Background: The limited availability of developmental-behavioral pediatric services has created long wait times, potentially delaying much-needed interventions. A secondary screening and triage model, termed "mid-level assessment," was developed for preschool-aged children referred to a tertiary care center with non-specific developmental-behavioral concerns. **Methods:** Decision rules were applied to information provided by referring physicians. Patients aged birth through five years who met inclusion criteria were scheduled for evaluation by a nurse practitioner and social worker. A standardized protocol was applied, utilizing the Behavior Assessment System for Children, Second Edition (BASC-2), Structured Developmental History (SDH), the Parent Rating Scale - Preschool (PRS-P) or the Infant-Toddler Social and Emotional Assessment (ITSEA), depending on age. Physical examination findings were entered directly into a database with criteria established to identify critical findings. The Developmental Assessment of Young Children (DAYC) was administered by interview and observation. Findings were entered into algorithms that directed recommendations for next steps such as comprehensive evaluation, developmental therapy services, or parent support. A brief report was mailed to the parents and referring physician. **Results:** Mid-level assessments were completed on 116 patients with a mean age of 47.7 months (SD 14.9 months); 70% of the patients were male. The average time from date of referral to date of appointment was 26 days. The average total time for assessment was 110 minutes (SD 33.6 minutes). A majority of the children evaluated (75%) manifested at least one area of developmental delay on the DAYC (SS > 1 SD). Delays were most frequent in the Social-Emotional domain (46%), followed by Cognitive (37%), and Functional Communication (34%). Fifty five percent of children were reported to have clinically significant Externalizing Problems on the BASC PRS-P, while 25 percent were reported to have Internalizing Problems. For the 11 children administered the ITSEA, clinical deficits were most prevalent in the area of Dysregulation. Satisfaction surveys were obtained from 31 referring physicians and 99 parents. On the physician survey 6 of 8 items were endorsed as "agree" or "strongly agree" by more than 80% of respondents; however, only 52 percent endorsed the item, "I was able to implement the recommendations without difficulty." Parent satisfaction ratings of "agree" or "strongly agree" were reported by over 75% of respondents, including the critical item, "The assessment was helpful in understanding my child's development." **Conclusions:** The mid-level assessment model was proven to be feasible and was well accepted by parents and referring physicians. The majority of children referred with ill-defined developmental and behavioral concerns were found to have externalizing behavioral problems and social-emotional developmental delays.

Abstract # 16

Managing Demand: The Role of a Medical Social Worker in Improving Access to Services in a Multidisciplinary Child Development Clinic, Lorrie Ufkin, Paula C. Horner; Mayo Clinic, Rochester, MN.

Purpose/Background: Would a change in the intake process shorten wait time for local and regional patients with developmental and behavioral problems? Patients residing locally, regionally and nationally are referred to the Mayo Clinic Dana Child Development and Learning Disorders Program for multidisciplinary evaluations for a variety of behavioral and developmental problems. This program typically serves children ages 3 to 18 years. All new patients are mailed an intake packet as the first step to accessing the program. This intake packet consists of a number of forms regarding presenting concerns, medical history, developmental history, family history, school history, interventions and behaviors. Previous outside medical records and school records are also requested. This information is summarized and reviewed for appointment scheduling. Wait time for appointments is typically 5 to 6 months. A large percentage of our patients live within a one hour drive of the Mayo Clinic. **Methods:** All patients who live within a one hour drive of Mayo Clinic were sent the same intake packet described above plus The ANSER System School Questionnaire developed by Dr. Mel Levine. When these were returned, an interview with a medical social worker was scheduled, typically within one to two weeks of receipt of the packet. The child and parent/guardian came to this interview. The stated purpose of the visit was to determine what additional appointments and services needed to be provided (i.e., a comprehensive evaluation through the Dana Program, referral to a developmental pediatrician or psychologist for a single consultation, referral elsewhere in the Mayo medical system, a community referral, or

no other appointments.) A comprehensive social work assessment note was generated, reviewing all the outside material collected, impressions during the interview, resources given to parents and plan for referral. 95 patients were interviewed using this process. **Results:** 42 of the 95 patients interviewed were referred for multidisciplinary assessments in the Dana Program. See table for wait times. 53 local and regional patients who did not require multidisciplinary assessments in the Dana Program received the following services: interview only, referral to the Division of Behavioral and Developmental Pediatrics, referral to other specialty areas within Mayo Clinic, and referral to community services. **Conclusions:** The use of a face to face interview decreased the wait time for all services for children with a broad range of developmental and behavioral problems. This triage approach offers the potential to improve access to appropriate services, while reserving limited multidisciplinary assessment slots for patients with the most complex problems.

Wait Time for Completed Evaluation: 1/2005 to 4/2006

	Dana Patients		ANSER Patients	
Days	N = 157	Percentage	N = 42	Percentage
0–30	2	1%	6	1%
31–60	5	3%	10	24%
61–90	12	8%	13	31%
91–120	22	14%	5	12%
121–150	36	23%	6	14%
151–180	25	16%	1	2.5%
181+	55	35%	1	2.5%

Based on weighted average: Dana patients 142 days. ANSER patients 76 days.

Abstract # 17

Posttraumatic Stress and Depression in Children With Acute, Unintentional Injury, Michelle Berrong, Nancy Kassam-Adams, Angela Marks, Flaura Winston; The Childrens Hospital of Philadelphia, Philadelphia, PA.

Purpose/Background: The purpose of this study was to examine post-injury Post-traumatic Stress Disorder (PTSD) and depression in acutely injured children and their parents identified in the busy emergency medicine setting. Empirical studies suggest that among child and parent reactions to acute injury, PTSD is a particular concern, with real impact on children's post-injury functioning and recuperation. Post-injury PTSD and depression may affect broad health outcomes. Unfortunately, gaps in providers' awareness and detection of injury-related traumatic stress in acute and primary care cause the majority of children's psychological reactions to injury go undiagnosed and untreated. In one study, primary care providers of injured adolescents identified no new mental health concerns although research evaluations identified 30% with significant PTSD symptoms and 11% with depression symptoms. Much of the pediatric PTSD literature pertains to inpatient children; few studies have examined psychosocial outcomes for injured children who are treated and released home from the ED. **Methods:** Eligible children were ages 8–17, treated in the emergency department for an acute, unintentional injury (falls, sports injuries, injuries from traffic crashes, and others), and discharged home. Participants were English speakers with sufficient cognitive ability to comprehend and answer questions. 263 eligible children and one parent per child were enrolled at an urban Level I Pediatric Trauma Center. ED nurses administered a screening measure to evaluate patients' and parents' PTSD risk. Telephone follow-up interviews at three months measured PTSD, depression symptoms, parents' perception of children's' recovery, and their help-seeking for themselves and their children. Symptom measures were scored to determine whether participants experienced impairing levels of depression, PTSD, and partial PTSD (at least one symptom of re-experiencing, avoidance and arousal). **Results:** Children's mean age was 11.7 years; 58% were male. 70% were African-American, 26% were White, and 4% of other ethnicity; the majority of parents were mothers (73%). 1 in 6 children and 1 in 10 parents had clinically meaningful traumatic stress symptoms at follow-up. Among children, 7% had PTSD and another 8% had partial PTSD. Among parents, 4% had PTSD and another 7% had partial PTSD. 19% of children and 16% of parents endorsed depression symptoms. Statistical analyses revealed positive correlations between parents' partial-PTSD and depression ($r = 0.66$, $p < .05$), and also between children's partial-PTSD and depression ($r = 0.74$, $p < .05$). **Conclusions:** Rates of ED-treated children's and parents' PTSD, depression, and their comorbidity, are consistent with prior studies of injured hospitalized children. While the vast majority of injured children experience full physical recovery, a significant subset of children suffer negative psychological sequelae such as PTSD and depression, even following less severe injuries treated in the ED. Acute- and primary care physicians may be unlikely to identify injured children at risk for traumatic stress; therefore, these data support the need for new approaches to ensure adequate screening and follow-up for the psychological impact of injury from the acute care setting through to primary care.

Abstract # 18

Neuropsychological Predictors of Long Term Functional Outcomes Following Pediatric Traumatic Brain Injury (TBI), Courtney E. Johnson[1], Keith O. Yeates[2], Dennis Drotar[1,3], Nori M. Minich[3], H. Gerry Taylor[1,3]; [1]Case Western Reserve University, Cleveland Heights, OH; [2]Department of Pediatrics, The Ohio State University and Children's Research Institute, Columbus, OH; [3]Rainbow Babies and Children's Hospital, Department of Pediatrics, Cleveland, OH.

Purpose/Background: Neuropsychological tests are frequently used to predict functional outcomes following pediatric traumatic brain injury. Unfortunately, the relationship between functioning and neuropsychological abilities in this population has yet to be established. TBI commonly leads to deficits in meeting demands of daily living; however neuropsychological tests may have limited sensitivity to these deficits. The current study examined the predictive validity of neuropsychological status after pediatric TBI in relation to long-term adaptive functioning. **Methods:** Assessments of neuropsychological skills and functioning were collected as part of a prospective longitudinal study of children injured between 6 and 12 years of age. The sample included 45 children with severe TBI, 54 with moderate TBI, and 63 with orthopedic injuries. Cognitive outcomes were assessed at 6 months post injury and included domains of Language, Attention, Memory, Visual-spatial processing, and Executive Function. Functional outcomes were measured by the Vineland Adaptive Behavior Scales (VABS)at 6-months and 4-years post injury. Group differences in post-injury adaptive behavior skills were examined using general linear mixed model analysis. **Results:** Results confirmed group main effects for all domains of functioning. Tests of simple effects revealed that outcomes were poorer for the severe TBI group than for the ORTHO group across all domains of functioning. The most common pattern of results across domains was a two-way interaction between group and neuropsychological skill predicting functioning. This finding occurred in each domain of functioning with various neuropsychological skills. In each case, groups were significantly different at lower levels of neuropsychological skill but not at higher levels. In two cases, analyses revealed interactions of Language with time since injury suggesting differential rates of growth according to initial level of ability. Analyses generally failed to reveal three-way interactions of group $\times$ neuropsychological skill $\times$ time. In most cases, time since injury was not significant suggesting a stable pattern of sequelae over time. **Conclusions:** Neuropsychological skills were generally predictive of functioning. Furthermore, Language, Memory, and Executive Functioning predicted multiple domains of current and future adaptive functioning as well as growth in some cases. Results also demonstrated improvement over time in all groups; however those with lower

neuropsychological skills shortly after injury had a slower progression. Injury groups were different from each other at lower levels of neuropsychological skill but not at higher levels. Children with high neuropsychological skill and severe TBI did not differ from other groups in long-term outcomes. It is possible that low neuropsychological skill soon after injury may be a signal of more severe or disperse injury. Poor neuropsychological skills early after injury could also be related to pre-injury neuropsychological functioning signaling an emerging deficit rather than a cumulative deficit. Current findings demonstrate the utility of early neuropsychological skills in predicting subsequent development in children with TBI. Further work is needed to better understand the cognitive basis of functional deficits and to develop neuropsychological tests with improved sensitivity to these problems.

Abstract # 19

Caregiver Coping Following Traumatic Childhood Injuries: Stability and Association with Interpersonal Stressors and Resources, Lisa Y. Ramirez, H. Gerry Taylor, Nori Minich; Case Western Reserve University, Departments of Pediatrics and Psychology, Cleveland, OH.

Purpose/Background: Caregiver coping styles following traumatic injuries in children are related to both immediate postinjury family burden and with subsequent changes in burden (Wade et al., 2001). However, we know little about the stability of coping styles over time postinjury or about associations of coping with other caregiver characteristics. **Methods:** To address these issues, we examined data from a longitudinal study of 52 children with severe traumatic brain injuries (TBI), 56 with moderate TBI, and 80 with orthopedic injuries only. Children 6–12 years of age at injury and their families were assessed soon after injury (baseline) and again at 6 and 12 months post baseline. Caregivers completed the COPE to assess coping styles that included acceptance, active coping/planning, denial, humor, religion, and seeking emotional support. Self reports of interpersonal stressors and social supports were obtained from caregivers using the Life Stressors and Social Resources Inventory. **Results:** Mixed model analysis indicated that coping styles changed little across the follow-up interval. Additionally, even when controlling for group effects and sociodemographic factors, greater conflicts at baseline were associated with higher use of humor (R2 change = .023, $p = .03$) and denial/disengagement (R2 change = .024, $p = .02$). Greater supports at baseline predicted higher use of religion (R2 change = .064, $p < .001$) and seeking emotional support (R2 change = .124, $p < .001$) as well as lower use of denial/disengagement (R2 change = .030, $p = .01$). **Conclusions:** In addition to suggesting that coping styles are stable after childhood injuries, the findings raise the possibility that the caregiver interpersonal relationships may help to account for associations of coping with postinjury family burden. Further research is needed to investigate caregiver correlates of coping and to determine if coping can be modified through direct intervention, which could lead to appropriate intervention programs and support for at-risk families.

Abstract # 20

Pediatrician Identification of Psychosocial Problems: Role of Child Behavior, Parent Affect, Parenting Behavior, Parenting Satisfaction And Efficacy, Robert Dempster[1], Beth G. Wildman[1], Diane Langkamp[2]; [1]Kent State University, Kent, OH; [2]Children's Hospital Medical Center of Akron, Akron, OH.

Purpose/Background: This study aimed to identify characteristics of parents and their children that differentiate whether or not children were identified with a behavioral or emotional (psychosocial) problem by their pediatrician (PCP). **Methods:** Participants were 480 parents of children (ages 2–16 years) who presented for routine care to four community-based pediatric practices in northeastern Ohio. Participants were approached in the waiting room and completed a demographic questionnaire along with measures of child problem behavior (Eyberg Child Behavior Inventory; ECBI), affect (Positive and Negative Affect Scale; PANAS), parenting practices (Parenting Scale; PS), and parenting efficacy (Parent Sense of Competence; PSOC). PCPs completed a checklist assessing their concerns about the mental health status of both the parent and the child. **Results:** Among parents of children with clinically elevated ECBI scores, measures of parental affect, parenting style, and parental self-efficacy were not statistically significantly different between parents of children who were identified by their PCP and those who were not. Children who were identified by their PCP with subclinical ECBI scores were more likely to have clinically elevated levels of attention difficulties than oppositional defiant or conduct problem related behaviors. PCPs were more likely to identify children as having a psychosocial problem if the child was attending school than if they were not in school, despite similar levels of symptoms. **Conclusions:** Findings indicated that neither parental distress nor clinically significant child symptomotology were predictive of PCP identification, but ADHD symptoms and school age were associated with increased identification. These findings are consistent with hypotheses that pediatricians PCPs identify problems that they can treat within their practice setting.

Abstract # 21

The Effect of Caregiver Perceptions of Child Vulnerability on Functioning and Health Care Utilization in Children With Chronic Pain Syndromes, Mark Connelly[1], Kelly Anthony[2], Laura Schanberg[2], Janet Wootton[2], Shelia Rittgers[2], Christopher Edwards[2]; [1]Children's Mercy Hospital and Clinics, Overland Park, KS; [2]Duke University Medical Center, Durham, NC.

Purpose/Background: Burgeoning research has begun to uncover parent/caregiver characteristics that adversely impact functional outcomes in children and adolescents with chronic pain. Caregiver perception of child vulnerability is a variable that has been found to significantly impact functioning and healthcare utilization for children with chronic illness. However, this variable has not yet been evaluated in pediatric chronic pain syndromes despite clinical observations that poorer prognoses are often associated with children whose parent perceives them as more vulnerable relative to other children. **Methods:** Eighty-seven (87) pediatric outpatients evaluated in an interdisciplinary pediatric pain clinic and their caregivers provided data for this study. Children completed measures of pain, functioning, and cutbacks in school and social activities. Caregivers completed measures of psychosocial adjustment, perceptions of child vulnerability, and healthcare utilization. All measures were completed and returned prior to undergoing an evaluation at the pediatric pain clinic. **Results:** Hierarchical regression analyses found that caregiver perceptions of child vulnerability predicted child functioning as well as healthcare utilization. Further, results of mediational regression analyses suggested that increases in perceptions of child vulnerability intercede the relationship between caregiver psychological adjustment and the functioning of children with chronic pain. Caregivers with poorer psychological adjustment perceived their children with chronic pain as more vulnerable; this in turn predicted poorer child functioning perhaps through a maintained focus on pain due to heightened caregiver vigilance. **Conclusions:** Our data suggest that educating caregivers about the nature of chronic pain and helping them empower the child to independently develop and apply effective pain coping skills may improve child functioning and reduce utilization of health care resources.

Abstract # 22

Withdrawn

Abstract # 23

Persistent Caregiver Stress and Children's Asthma Morbidity, Madeleine Shalowitz[1,2], Carolyn A. Berry[3]; [1]Evanston Northwestern Healthcare, Evanston, IL; [2]Northwestern University, Feinberg School of Medicine, Chicago, IL; [3]New York University, New York, NY.

Purpose/Background: Stress has been associated with asthma morbidity in cross-sectional studies. Emerging information links stress in infancy

and later asthma onset. Other work suggests that the cost of adaptation to stress over time (allostatic load) can be related to morbidity. This analysis from Social Factors and the Environment in Pediatric Asthma (SPARC, 1RO1 ES10908) assesses temporal precedence of caregiver life stress and later child asthma morbidity. Further it assesses caregiver stress profiles over time and their association with child asthma morbidity. **Methods:** SPARC is a longitudinal study on health disparities in pediatric asthma. Participants were initially drawn from an asthma survey effort in 15 low income, racially and ethnically diverse Chicago public elementary schools. The 321 caregivers in these analyses all had a child with diagnosed asthma or respiratory symptoms consistent with possible asthma. They participated in the baseline T1 telephone interview and the T2 home visit which were 6 months apart. 55% of the caregivers were Hispanic, 33% African-American and 10% White. 65.5% completed the interview in English; the others Spanish. Asthma morbidity at T1 at T2 was measured after validation of a four level set of composites of symptoms and health services use (from very mild to severe) generated by cluster analysis. Life stress over the prior 6 months was measured at T1 and T2 with the CRISYS-R. **Results:** In these low income (but not poor) neighborhoods, asthma morbidity at T2 was associated with life stress at both T1 and T2. At least 20% of respondents experienced these life stressors in the six months prior to T1: decreased income, debt, unpaid utility bills, neighborhood violence, illness and death of a family member. In the period between T1 and T2,among other stressors, the frequency of concern about violence and neighborhood safety rose to more than 30%. Using a median split of the CRISYS-R scores, participants were further characterized as being high at T1 and T2 (hi–hi, 36%), low at T1 and T2 (lo–lo, 38%), or lo–hi (13%) or hi–lo (13%). The hi–hi life caregiver stress profile was associated with higher child asthma morbidity at T2 and lo–lo was associated with lower morbidity. The changing profiles were not significantly associated with asthma morbidity. **Conclusions:** Current child asthma morbidity is associated with caregiver life stress over 2 prior 6 month periods. Changing profiles, even if the high stress is in the current period, do not show a consistent relationship to child asthma morbidity. A highly stressed caregiver profile is reflected in higher child asthma morbidity, consistent with the proposed influence of stress and allostatic load. Health providers' efforts to identify and address sources of caregiver stress are likely to accrue to better health for their children with asthma.

Abstract # 24

Children and Parents: How Do Their Ratings of Asthma Health Compare? Lynn M. Olson, Linda Radecki, Mary Pat Frintner; American Academy of Pediatrics, Elk Grove Village, IL.

Purpose/Background: In research and in patient care it is often not clear whom to ask: parent or child? This report compares child and parent reports of asthma health status, examining: a) level of agreement and b) direction of differences. We explore reports by child age and physical versus emotional health. **Methods:** Parents and children, in separate interviews answered equivalent questions about activities and impact of asthma in the past 2 weeks, including 5-point Likert scale items from Children's Health Survey for Asthma (CHSA). Scales were computed for: a) physical symptoms and b) emotional impact of asthma. Scale scores could range from 0–100; higher scores = better health. Level of agreement examined by % of parents and children who agreed on specific items and weighted kappas. Direction of differences based on paired-sample t-tests comparing parent-child mean scores. Results were examined by child age groups: 7–9, 10–12, and 13–16. **Results:** 414 parent-child pairs completed the study. 59% of children were male; mean child age = 10.9 years (range = 7–16 years); 46% African American. 42% of families reported annual incomes <$30,000/year. 41% of children had ever been hospitalized overnight for asthma. 53% currently had moderate/severe asthma as rated by parents. Percent agreement between children and parents on individual asthma-related items ranged from 69% to 93%, while kappa scores ranged from .09 to .26. Overall, children rated their asthma physical health (eg, wheezing, sleep disturbance) worse than did their parents (79.2 vs 84.4, $p < .001$); this pattern was the same in each age group. There were distinct age differences for emotional health, with teenagers (13–16 years) rating their emotional health better than did their parents (79.3 vs 69.1, $p < .001$). **Conclusions:** Child and parent reports differ, with children rating their asthma physical health worse than did their parents. The largest differences between parents and children were found among adolescents, who reported less of an impact of asthma on emotional health than did their parents. The findings underscore the importance of assessing both child and parent reports about symptoms and impact of asthma and other health conditions.

Abstract # 25

Informant Discrepancy in Cystic Fibrosis, Tracy L. Masterson[1,3], Beth G. Wildman[3], Benjamin Newberry[3], Gregory Omlor[2]; [1]du Pont Hospital for Children, Wilmington, DE; [2]Children's Hospital Medical Center of Akron, Akron, OH; [3]Kent State University, Kent, OH.

Purpose/Background: To evaluate whether informants differ in their perception of disease severity, treatment adherence, and psychological adjustment. Previous research suggests that there is a discrepancy between informant (child, parent, and physician) report of psychosocial and disease-related parameters (e.g. psychological adjustment, treatment adherence, and disease severity) (Abbott, Dodd & Webb, 1996; Connelly, Wagner, Brown, Rittle, Clouse & Taylor, 2005; Overholser, Spirito & Difilippo, 2000). As outcome variables in pediatric populations have been shown to vary as a function of the data source (Thompson & Gustafson, 1996), it is important to assess the relationship between multiple informants in pediatric populations (Connelly et al., 2005; Holmbeck, Li, Schurman, Friedman, and Coakley, 2002). **Methods:** Participants were 45 children with cystic fibrosis (CF) between the ages of 8 and 18 (and their guardians). Information regarding disease severity, psychosocial adjustment, and treatment adherence were collected from children, parents, and physicians during routine outpatient visits to the CF Clinic at the Children's Hospital Medical Center of Akron. **Results:** To determine if there was a statistically significant difference between child, parent and physician report of disease severity, treatment adherence, and psychological adjustment, the Friedman's statistic was employed. The analyses revealed significant differences between informants for disease severity ($X2 = 8.015$, $p = .018$) and psychological adjustment ($X2 = 6.021$, $p = .048$), but not for treatment adherence. Next, the Wilcoxin's T-test was performed to compare perceptions of the aforementioned parameters between groups: (1) child versus parent, (2) child versus physician, and (3)parent versus physician. Results demonstrated a significant difference between child versus physician report of disease severity ($Z = -2.528$, $p = .011$), parent versus physician report of disease severity ($Z = -2.179$, $p = .029$), child versus physician report of psychological adjustment ($Z = -2.151$, $p = .031$), and parent versus physician report of psychological adjustment ($Z = -3.047$, $p = .002$). **Conclusions:** These results support previous findings demonstrating discrepant reporting among informants in pediatric populations. In this sample, physician perception of disease severity and psychological adjustment were discrepant from child and parent report. Specifically, children and parents were more likely to view disease as more severe than physicians. As physician report of disease severity is based on objective medical indicators, physicians are likely to be more accurate than children or parents (Abbott, Dodd & Webb, 1995), suggesting that children and parents in this sample are over-estimating disease severity. Additionally, physicians tended to under-estimate children's levels of psychological distress compared with children and parents. Taken together, study findings indicate that there is a discrepancy between informants in this sample, with the most significant discordance between physicians and other informants. While there appears to be agreement between informants on report of child treatment adherence, physicians have a tendency to report less severe disease and

psychosocial distress than children and parents. Findings indicate good overall agreement between child and parent report.

Abstract # 26

Parental Distress, Family Functioning, and Social Support in Families With and Without a Child With Neurofibromatosis, Jennifer Reiter-Purtill[1], Elizabeth K. Schorry[2], Anne M. Lovell[2], Kathryn Vannatta[3], Cynthia A. Gerhardt[3], Robert B. Noll[1]; [1]Children's Hospital of Pittsburgh - Pediatrics, Pittsburgh, PA; [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH; [3]The Ohio State University - Pediatrics, Columbus, OH.

Purpose/Background: Neurofibromatosis 1 (NF1), an autosomal dominant genetic disorder, affects 80,000–100,000 individuals in the US. Expression of the disorder can vary from minimal impact to significant impairment, including orthopedic problems, cosmetic disfigurement, seizures, optic gliomas, and cognitive difficulties. NF1 in children, like other pediatric chronic conditions, has the potential to adversely affect the psychosocial adjustment of parents and the family. Concern about the child's well-being and the challenges associated with meeting medical needs can put strain on the social, emotional, and financial resources of a family. The purpose of the current study was to compare parental distress, social support, and family functioning between families of children with NF1 and demographically similar comparison families of children without a chronic illness. In addition, the impact of disease severity was examined. **Methods:** Medical records were used to identify every child with NF1 between the ages of 7–15 years who received care at a large, children's hospital in the Midwest. Children in full time special education were excluded. Fifty-four of the 65 eligible children identified with NF1 agreed to participate in the current study. Potential comparison children were identified from the classroom of each child with NF1. The family of the child who was the same gender and race and whose birthday was closest to that of the child with NF1 was contacted first. If they declined participation, the family of the child whose birthday was next closest was called. Eighty-five percent of these families were first choice comparisons (COMP). All COMP families were screened to ensure that none had a child with a severe chronic illness. Questionnaires (Demographics; SCL-90-R; Family Environment Scale; Norbeck Social Support Inventory; About Your Child's Eating-Revised) were completed in the home by the parents of the children with NF1 (54 mothers and 42 fathers) and the parents of comparison children (49 mothers and 32 fathers). A clinical geneticist independently rated children with NF1 on general disease, cosmetic, and neurological severity. **Results:** Few significant between group differences were identified for mother and father reports of mean levels of parental distress, social support, family environment, or mealtime climate. However, according to mothers of children with NF1, greater neurologic severity of their child's disease was associated with greater distress ($r = 0.34$, $p < .05$), more family conflict ($r = 0.44$, $p < .01$), less family support ($r = -0.35$, $p < .05$), less positive mealtime interactions ($r = -0.50$, $p < .001$), and less perceived social support ($r = -0.34$, $p < .05$). **Conclusions:** Overall, parents of children with NF1 report similar levels of distress, family functioning, mealtime climate, and social support as demographically similar families of children without a chronic illness. Mothers who have children with more severe neurologic disease may be at risk for greater distress, less social support, and poorer family relationships. Future work utilizing empirically supported interventions to alleviate distress among mothers of children with NF1 seems appropriate. One area that might be targeted by interventions is social support, since these mothers perceived less support and support may mediate the link between NF1 in the child and maternal distress.

Abstract # 27

Withdrawn

Abstract # 28

The Relationship Parent-Reported Social Support Conflict, Discrepancy in Decision-Making Autonomy and Adolescent Adherence to Medical Treatment in Families of Adolescents With Type 1 Diabetes, Amy Lewandowski[1], Dennis Drotar[1,2]; [1]Case Western Reserve University, Cleveland, OH; [2]Division of Behavioral Pediatrics and Psychology, Rainbow Babies and Children's Hospital, Cleveland, OH.

Purpose/Background: The current study used a comprehensive model that integrated diabetes social support theory, Belsky's (1984) model of spousal support, and Holmbeck's (1996) model of discrepancy in decision-making autonomy (DDMA) to examine the role of the social support systems for parents of adolescents with IDDM. The study investigated the relationships between both parent-reported spousal support and social network support, and parent-adolescent diabetes-related conflict, discrepancies in decision-making autonomy (DDMA), and adolescent adherence to diabetes treatment. **Methods:** Fifty-one mothers of adolescents with IDDM completed self-report measures of social support, diabetes-related conflict, and adolescent autonomy for diabetes care. Analyses tested the role of conflict and DDMA as mediators between parent-reported social support systems and adolescent adherence to treatment. **Results:** Findings from the current study indicated that higher levels of parent-adolescent diabetes-related conflict were associated with poorer adolescent adherence to treatment (R squared change = .17, $p < .05$). Parent-reported spousal support was significantly related to both parent-adolescent conflict (R squared change = .21, $p < .01$) and adolescent adherence to treatment (R squared change = .34, $p < .01$) (as measured by nurse report), with lower levels of support associated with increased conflict and worse treatment adherence. Sobel's test was conducted to approximate the significance of the indirect effect. Sobel's test approached significance ($p < .07$), indicating a statistical trend toward mediation. However, because Sobel's test did not reach $p < .05$, the hypothesis that diabetes-related conflict mediated the relationship between mother-reported spousal support and adolescent treatment adherence was not supported. Contrary to the hypotheses, DDMA were not predictive of parent-adolescent conflict and DDMA did not emerge as a mediator between parent-reported social support and adherence. **Conclusions:** The findings of this study highlight the important role of spousal support for parents of adolescents with IDDM. Results indicate that spousal support not only impacts parents' interactions with their adolescents, but that the level of spousal support mothers receive can play a role in the health care behaviors of their adolescents. The role of parent-reported social support in adolescent adherence to treatment is an important area for future intervention research, and future studies should examine the specific mechanisms of spousal support that parents report as being most helpful in caring for their children and adolescents with IDDM. The findings also suggests that treatment teams should consider taking an inventory of parents' spousal and social network support systems, to give clinicians an index of the total support a family is receiving and to indicate situations in which necessary social support may be lacking. Conducting these assessments early in the treatment process can help to identify problematic patterns of social support so that relevant interventions can be instituted.

Abstract # 29

Parent-Teacher Concordance Regarding Psycho-Educational Needs of Pediatric Cancer Survivors, Samantha E. Huestis[1], Lisa Y. Ramirez[1], Catherine C. Peterson[2]; [1]Case Western Reserve University, Cleveland, OH; [2]Rainbow Babies and Children's Hospital, Cleveland, OH.

Purpose/Background: Survivors of childhood cancer are at risk for neurodevelopmental (ND) late effects, which may result in academic, social, and emotional impairment. Screening survivors for potential impairment is important to ensure optimal psychological adjustment post-illness. As survivors re-integrate into their schools, teacher collaboration with the child's family and treatment team becomes increasingly important. The purpose of this project was two-fold: first, to examine concordance between parent and teacher reports on the Hematology-Oncology

Psycho-Educational (HOPE) Needs Assessment questionnaire for identifying ND late effects among cancer survivors; and second, to compare HOPE items to domains of psychological functioning assessed by the Behavioral Assessment System for Children (BASC). **Methods:** Study participants were the parents and teachers of 43 childhood cancer survivors ages 7 to 17 years recruited from an oncology clinic at a large children's hospital. Participants were mailed questionnaires upon consent. Pearson chi-squares and independent samples t-tests were calculated to determine rates of concordance and agreement between raters and measures. **Results:** Due to the potential for spurious findings, only significance values of <.01 are reported. Pearson chi-squares revealed significant concordance between informants' HOPE results regarding changes in attention or memory; history of special school services or an Individual Education Plan; teacher concerns about the child's behavior; and history of detentions or suspensions. Independent samples t-tests indicated that parents who reported academic performance concerns on the HOPE endorsed significantly more attention problems on the BASC. Similarly, parents who reported difficulties or changes in their child's ability to pay attention reported more attention problems on the BASC. Parents who reported HOPE teacher concerns about behavior endorsed higher BASC levels of aggression, attention problems, and hyperactivity. Parents concerned about their child's home behaviors indicated more conduct problems on the BASC. Parents who reported social difficulties on the HOPE noted more withdrawn behaviors on the BASC. Those concerned about their child's frustration tolerance endorsed higher levels of child withdrawal and depression. Finally, parents who endorsed somatic symptoms on the HOPE reported higher BASC somatization scores. Teachers concerned with the child's education on the HOPE endorsed lower study skills and more learning problems on the BASC. Those concerned with school behaviors also reported more aggression and conduct problems. Further, teacher concerns about attention indicated greater learning problems. Finally, teachers concerned with the child's friendships reported lower social skills. **Conclusions:** The HOPE is a clinically valuable screening tool for psycho-educational needs in cancer survivors at risk for ND late effects when validated against BASC-reported psychological functioning. Further, the present findings indicate good parent-teacher agreement on the HOPE, suggesting it is reliable in terms of multi-informant concordance. Future research with larger samples should emphasize both multi-informant and multi-measure concordance (e.g., neuropsychological measures) for identification of, and subsequent interventions for, those at-risk for ND late effects.

Abstract # 30

Longitudinal Study of the Relationship Between Illness Uncertainty and Anxiety Symptoms Among Children With Sickle Cell Disease, Ahna L. Pai[1], Lisa L. Ferguson[2], Sophie Foster-Fink[3], Dennis Drotar[3]; [1]Division of Oncology, Children's Hospital of Philadelphia, Philadelphia, PA; [2]Department of Psychology, Cleveland State University, Cleveland, OH; and [3]Tufts University, Medford, MA; [4]Case Western Reserve University School of Medicine and Rainbow Babies and Children's Hospital, Cleveland, OH.

Purpose/Background: The purpose of the current study is two fold: 1) to examine the longitudinal relationship of caregiver uncertainty about their child's illness to child reported anxiety, and 2) to examine the longitudinal relationship of child reported uncertainty to self-reported anxiety among children with sickle cell disease (SCD). **Methods:** Participants. Children with SCD (N = 27) ages 8–18 and their primary caregivers were recruited from an outpatient clinic at a Midwestern children's hospital. Sixty-three percent of the children were male, all participants identified themselves as African-American and 48% of the sample had a household income of less than $19,999. Measures. Caregivers completed a demographic questionnaire and the Parent Perception of Uncertainty Scale (Mishel, 1983). Children over the age of eight years completed the Children's Uncertainty in Illness Scale (Mullins & Hartman, 1995) and the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992). The anxiety subscale of the BASC was used to assess anxiety symptoms. Chart reviews were conducted to calculate the number of hospitalizations in the past year. Procedure. Questionnaire packets containing consent/assent forms, and measures were sent to the participants via post. Participants completed measures at baseline and at a 6 month follow-up. Participants received a gift certificate for packet completion. **Results:** Caregiver and child reports were examined separately. Only baseline data is reported here. Child uncertainty was significantly associated to anxiety symptoms ($r = .52$, $p = .003$) but parent uncertainty was not ($r = .12$, $p = .27$). Hierarchical regression analyses revealed that child uncertainty accounted for a significant proportion of variance in child anxiety after accounting for age, gender, and number of hospitalizations (R2ch = .17, $p = .03$). Six-month data collection was just completed and will be reported. Longitudinal analyses will examine if baseline parent and child illness uncertainty account for a significant proportion of variance in child anxiety symptoms at a 6-month follow-up after controlling for demographic and disease parameters as well as baseline anxiety. **Conclusions:** This preliminary study examined the relationship uncertainty to anxiety among children with SCD. Consistent with previous studies child reported uncertainty accounted for a significant proportion of anxiety symptoms. However, findings revealed that caregiver reported uncertainty did not predict child anxiety. Baseline findings suggest that illness uncertainty may be a modifiable cognitive mechanism contributing to increased anxiety among children with SCD. Strengths and limitations of the study will be discussed.

Abstract # 31

Does Parental Consent Bias Adolescent Substance Use Research? Neal L. Rojas[1,2], Lon Sherrit[1,2], Knight R. John[1,2]; [1]Children's Hospital Boston, Boston, MA; [2]Harvard Medical School, Boston, MA.

Purpose/Background: Few studies have assessed the effect of parental consent on study participation rates and sample characteristics among adolescents. It is unknown how requiring parental consent might bias a study sample in demographic characteristics and substance use severity. The purpose of this study is to assess the potential effects of requiring parental consent on study participation and sample characteristics. **Methods:** This retrospective study is a secondary analysis of data collected in two non-contemporaneous studies that included 14 to 18-year-old patients at the Adolescent/Young Adult Medical Practice at Children's Hospital Boston (AYAMP). We extracted study recruitment logs to obtain information on participation and refusal rates for both studies. We created a combined database comprised of all Study 1 participants (N = 538), and Study 2 participants (N = 168) who were in the 14 to 18-year-old age range (we excluded 12 and 13-year-olds) and who were recruited at the AYAMP site (we also excluded the other two study sites). The combined dataset included variables common to both individual datasets, including demographic characteristics, and CRAFFT substance abuse screening test responses. An ordinal regression model was then entered to predict CRAFFT score using the following variables: Age, gender, ethnicity (white, Black, Hispanic, Asian, and other), and Study membership. We also computed CRAFFT screen-positive rates for both studies, and adjusted Study 2 rates for differences in demographic characteristics. **Results:** 538 of 670 (80.3%) eligible patients agreed to participate in Study 1, compared to 168 of 413 (40.7%) of eligible participants in Study 2, for a near two-fold difference in study participation ($p = < .0001$). Study 1 recruited significantly more white participants than study 2 (50.6% vs. 16.7% $p < .0001$). Study 2 status predicted CRAFFT scores that were significantly lower ($p < .03$) in a regression model that controlled for age, gender, and ethnicity. **Conclusions:** This study suggests that parental consent may significantly and negatively affect study participation in adolescent health risk behavior research and that it may result in substantial self-selection bias. A greater proportion of higher-risk, white adolescent participants enrolled in the study that waived parental consent. Further studies should assess the mechanisms of parental consent bias across different cultures and risk behaviors.

Abstract # 32

Patients With Spina Bifida Frequently Identified With Inattentive Behaviors, Scott W. Stuart[1], Michelle M. Macias[1], Conway F. Saylor[2]; [1]Medical University of South Carolina, Charleston, SC; [2]The Citadel, Charleston, SC.

Purpose/Background: Spina bifida (SB) is a disorder that is associated with hydrocephalus, in which the vast majority will require placement of a ventriculoperitoneal shunt. This stretching and thinning of the cortex leads to a series of neurologic insults that can lead to several other medical and neurocognitive co-morbidities. Clinicians who provide care to the youth with SB population note a high prevalence of attention problems. What few reports that have been published demonstrate that the prevelance of Attention Deficit Hyperactivity Disorder (ADHD) in the SB population is 31–39.2%. If there is a marked increase of inattention in this population, it becomes a high priority to screen and provide appropriate interventions to prevent secondary impairment. We hypothesized that spina bifida has an increased prevalence of attention problems relative to the general population. **Methods:** Prospective cross-sectional descriptive study design that received approval in advance by the IRB. The objective was to assess the frequency of inattentive behaviors in a statewide sample of youth with SB as identified by parent completed Childhood Behavior Checklist (CBCL). Patients were enrolled into a CDC funded South Carolina state wide project designed to assess behavioral and learning profiles, and social support in youths with SB and their families. Study population consisted of 79 youths with SB ages 6–17 years old with 46.8% male and 53.2% female. Parents completed standardized questionnaires about learning, behavior, attention and social skills in these youth. Data were extracted from the parent CBCL to assess the frequency and severity of inattention behaviors and analyzed utilizing SPSS version 12. T-scores of 61–66 or 1 SD above the mean were considered borderline clinically significant for attention problems. T-scores >67 or 2 SD above the mean were considered clinically significant for attention problems. **Results:** In this descriptive analysis, 79 study participants had parents who completed the attention problems sub-scales in the CBCL. In regards to level to spinal defect, 35.4% were at the sacral level, 38% were at the L4–L5 level, and 26.6% were at the L3 to thoracic level. Twenty five subjects (31.6%) had attention problems t-scores that were concerning. Further delineation demonstrates 17.7% were one SD above the mean and 13.9% were 2 SD above the mean. **Conclusions:** In these data, 31.6% of youths with SB had behaviors indicative of attention problems. This is consistent with previously published results and supports that patients with SB have inattentive problems greater than that observed in the general population. Given these results, routine screening, identification and treatment of attention problems / ADHD in youth with SB is indicated to prevent secondary impairment. Further research specifically evaluating ADHD symptoms in this population is warranted.

Abstract # 33

Prevalence of ADHD in Girls with Turner Syndrome, Carol Forssell[1], Nancy E. Lanphear[1], Cynthia Molloy[2], Amy Newmeyer[1], Philippe Backeljauw[3]; [1]Cincinnati Children's Hospital Medical Center - Division of Developmental; and Behavioral Pediatrics - University of Cincinnati College of Medicine, Cincinnati, OH; [2]Cincinnati Children's Hospital Medical Center - Center of Epidemiology and Biostatics - University of Cincinnati College of Medicine, Cincinnati, OH; [3]Cincinnati Children's Hospital Medical Center - Division of Endocrinology - University of Cincinnati College of Medicine, Cincinnati, OH.

Purpose/Background: Turner syndrome (TS) is a genetic condition of girls, clinically characterized by short stature, ovarian dysgenesis and other multiple anomalies. Overall IQ in most girls with TS is in the normal range. Learning disability is reported to occur in 55% of girls with TS, compared to 26% of mixed gender controls. The estimated prevalence of Attention Deficit/Hyperactivity Disorder (ADHD) in the general population is 3–12%, with a female:male ratio of 1:3. In one unpublished study, 24.4% of the girls with TS met DSM-IV criteria for ADHD. In another study using DSM-III criteria and only parent report, an increased prevalence of ADHD was also found. Objective: To determine the prevalence of ADHD in a cohort of girls with TS utilizing the Vanderbilt Assessment Scale - Parent Informant (VASPI) and the Vanderbilt Assessment Scale - Teacher Informant (VASTI) forms. **Methods:** Girls with TS 5–18 years followed in the TS Clinic at our institution were approached for participation in this study. The parent(s) completed the VASPI. The girls' teachers were asked to complete the VASTI. Medical records were reviewed and parents were interviewed to elicit known risk factors of ADHD using a questionnaire designed for this study. If scores on either the VASTI or VASPI were positive for symptoms suggesting the diagnosis of ADHD, further cognitive and language evaluations were performed. A test of single proportion ($\alpha = 0.05$) was used to determine if the observed proportion of girls in the study cohort differed significantly from the 4% reported for the general population of girls. **Results:** Of 37 families approached about the study, 32 agreed to participate and 24 have completed data collection. Mean subject age = 11.5 yrs (SD = 3.5 yrs). Four girls were classified as having ADHD by both the VASPI & VASTI. In this cohort of girls with TS, the prevalence of ADHD = 0.16 is significantly greater than the proportion of girls with ADHD in the general population ($p = .002$). In addition, 1 girl was positive on the VASTI alone, while 3 girls were positive on the VASPI alone. **Conclusions:** Our preliminary data suggest an increased prevalence of ADHD in girls with TS. Because of this, we recommend all girls with TS should be screened for ADHD by their medical care providers as part of routine health maintenance. This can be done easily using the VASPI and VASTI.

Abstract # 34

Written Language Learning Disorder: Incidence in a Population-Based Birth Cohort, 1976–1982, Rochester, Minnesota, Slavica K. Katusic[1], William J. Barbaresi[2], Robert C. Colligan[3], Stephanie M. Bagniewski[4], Amy L. Weaver[4]; [1]Division of Epidemiology, Mayo Clinic College of Medicine, Rochester, MN; [2]Division of Developmental & Behavioral Medicine, Mayo Clinic College of Medicine, Rochester, MN; [3]Department of Psychiatry and Psychology, Mayo Clinic College of Medicine, Rochester, MN; [4]Division of Biostatistics, Mayo Clinic College of Medicine, Rochester, MN.

Purpose/Background: There is little information regarding the incidence of written language learning disorder (WLD). Most estimates are based on medical or school referred samples, potentially limiting their utility in understanding the etiology, natural history and societal impact of WLD. **Objective:** To determine the cumulative incidence of WLD in a well-defined, population-based birth cohort based on three definitions of WLD and information from all existing evaluation and remediation resources for children in Rochester, Minnesota. **Methods:** Subjects included all children born 1976–1982 in Rochester, Minnesota who remained in town after age 5 (N = 5718). Records from all public and private schools in District 535, all sources of medical care (Mayo Clinic and Olmsted Medical Center), and the Reading Center/Dyslexia Institute of Minnesota (the only local private tutoring agency) were reviewed in detail for every child in the birth cohort. All individually administered IQ and achievement tests were abstracted. Three formulas (regression-based discrepancy formula, a non-regression-based discrepancy formula, and one based on low achievement) were used to determine WLD. Cumulative incidence rates of WLD were estimated using the Kaplan-Meier method. Associations between gender and time to WLD were evaluated using Cox models. **Results:** Cumulative incidence rates of WLD by age 19 varied from 6.9% to 14.7% according to the formula (Table). Within each formula, males were more likely to be identified as having WLD than females, with relative risks ranging from 2.0 to 2.9. The mean age at diagnosis was around 9.5 years. **Conclusions:** This report offers important information on incidence rates of WLD. These data, from a community-based birth cohort, suggest that WLD is common among school children and more common among boys than girls, regardless of definition. Absolute rates,

however, vary by definition. WLD is a common LD which deserves the attention of clinicians and researchers.

Variables	Regression Formula	Discrepancy Formula	Low Achievement Formula
Number of cases	333	511	704
Cumulative incidence	6.9%	10.4%	14.7%
95% confidence interval	6.2–7.7	9.7–11.3	13.6–15.7
Relative risk (M:F)	2.9	2.5	2.0
95% confidence interval	2.3–3.7	2.1–3.0	1.7–2.3

Abstract # 35

The Co-Morbidity of Math Learning Disorder (Math LD) and Attention-Deficit/Hyperactivity Disorder (AD/HD): Results from a Population-Based Birth Cohort Study, William Barbaresi, Slavica K. Katusic, Robert C. Colligan, Stephanie M. Bagniewski, Amy L. Weaver; Mayo Clinic College of Medicine, Rochester, MN.

Purpose/Background: Previous research indicates that children with learning disorder (LD) are at increased risk for co-morbid AD/HD. Population-based information about the co-morbid occurrence of AD/HD in children with Math LD is limited. The objective os this study is to determine the occurrence of co-morbid AD/HD among children with Math LD in a population-based birth cohort. **Methods:** Subjects included all children from a 1976–1982 birth cohort who remained in the community after age 5 years (N = 5,718). Records from all public and private schools in the community, all sources of medical care, and the only private tutoring center were reviewed in detail for every subject. All individually administered IQ and achievement tests were abstracted. Math LD case status was determined by three formulas (regression-based discrepancy –RFM, non-regression based discrepancy–DS, and low achievement –LA). Research identified AD/HD cases (n = 379) were defined by a model combining three categories of information (DSM-IV criteria, ADHD-specific questionnaire results, and clinical diagnoses). **Results:** Children with Math LD by any of the three formulas were 11.8 times more likely to have AD/HD than children without Math LD, after adjusting for gender (odds ratio = 11.8; 95% CI = 9.5–14.8; $p < .001$). Specifically, among the 791 Math LD cases, 228 (28.8%) had AD/HD, whereas among the 4908 children without Math LD, just 151 (3.1%) had AD/HD. Girls with Math LD were 18.3 times more likely to have research-identified AD/HD than girls who did not have Math LD (95% CI = 11.8–28.4; $p < .001$), while boys with Math LD were 10.0 times more likely to have AD/HD than boys without Math LD (95% CI = 7.7–13.1; $p < .001$). Results were similar for each of the three Math LD definitions (RFM, DS and LA). **Conclusions:** These results from a population-based birth cohort demonstrate that AD/HD is significantly more common among children with Math LD, regardless of how Math LD is defined. When caring for a child with Math LD, clinicians should routinely assess for co-morbid AD/HD.

Abstract # 36

Functional Impairment in Preschool Children With ADHD-Combined Subtype vs. ADHD-Hyperactive/Impulsive Subtype: Is There a Difference? Catherine Riley[1], George DuPaul[2], Nathan Blum[1], Mary Pipan[1], Lee Kern[2], John Van Brakle[3]; [1]The Children's Hospital of Philadelphia, Philadelphia, PA; [2]Lehigh University, Bethlehem, PA; [3]Lehigh Valley Hospital, Allentown, PA.

Purpose/Background: Attention-deficit/hyperactivity disorder (ADHD) occurs in 2–5% of preschool children. Prior study in preschool children shows that most preschool children are diagnosed with either the combined or hyperactive-impulsive subtype and both are associated with functional impairment. However, little research has been done looking for differences in functional impairment between these subtypes. The purpose of this study is to evaluate whether preschool children with Hyperactive-Impulsive ADHD (ADHD-HI) and Combined ADHD (ADHD-C) have different levels of functional impairment in four domains: Externalizing symptoms, Internalizing symptoms, Social skills, and Academic functioning. **Methods:** Subjects are 102 children 3 to 5 years of age, meeting DSM-IV criteria for ADHD (71 combined and 31 hyperactive-impulsive subtype) based on a structured diagnostic interview and parent/teacher ratings. Subjects were recruited from pediatric practices, preschools and community daycare programs and enrolled in an ongoing behavioral intervention study. Exclusion criteria included mental retardation, autism, conduct disorder or motor impairment. Children with ADHD-C vs. ADHD-HI were compared across two measures for each functional domain of interest. Externalizing and Internalizing behavior were assessed using ratings on the Conners' Rating Scales-Revised: Long Form (CRSR-P for Parent ratings and CRSR-T for Teacher ratings). Social skills were evaluated using parent and teacher ratings on the Social Skills Rating System (SSRS) (K-6 version). Pre-academic functioning was assessed using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Woodcock-Johnson Psycho-Educational Battery-revised (WJ-R). Direct observation was completed in the preschool setting to assess off task and disruptive behavior. The Abikoff Structured School Observation Code was used during structured classroom time and a modified version of the Early Screening Profile (ESP) was used to observe classroom behavior during free play. **Results:** There were no significant differences reported by either teachers or parents on the Conners' Rating Scales (see Table). No statistically significant differences were found between the groups when examining off task and/or disruptive behavior during structured and free play observations at school (data not shown). Parents rated the ADHD-HI group as having slightly better social skills, whereas there was a trend toward teachers rating the ADHD-C group as having better social skills (see Table). No differences between the subtypes were found for pre-academic functioning on the Woodcock-Johnson or the DIBELS (see Table). **Conclusions:** Across the 4 areas of functioning assessed in this study, preschool children with ADHD-HI type and those with ADHD-C type demonstrated similar levels of functioning. This study suggests that preschool children with ADHD Hyperactive-Impulsive type have as much need for intervention as those with ADHD Combined type.

Measure	ADHD-C (S.D.)	ADHD-HI (S.D.)	*p* Value
CRSR-P Oppositional T Score	66.7 (13.5)	65.7 (11.7)	0.73
CRSR-T Oppositional T Score	70.9 (15.6)	75.5 (14.7)	0.17
CRSR-P Anxious T Score	53.5 (11.1)	53.2 (9.7)	0.90
CRSR-T Anxious T Score	59.2 (11.6)	58.5 (12.2)	0.77
SSRS-P Social Skills Raw Score	37.5 (9.0)	41.5 (8.1)	0.047
SSRS-T Social Skills Raw Score	25.8 (8.0)	22.7 (8.7)	0.08
DIBELS Initial Sound Fluency Raw Score	4.2 (4.6)	4.1 (4.0)	0.86
W-J III Applied Problems Standard Score	99 (14)	104 (16)	0.15

Abstract # 37

Efficacy and Safety of Extended-Release Dexmethylphenidate in Children With ADHD: A 12-Hour Placebo-Controlled Laboratory Classroom Study, Raul R. Silva[1], Rafael Muniz[2], Linda Pestreich[2], James Wang[2], Frank A. Lopez[3]; [1]New York University School of Medicine, New York, NY; [2]Novartis Pharmaceuticals Corporation, East Hanover, NJ; [3]Children's Development Center, Maitland, FL.

Purpose/Background: The objective of this study is to examine the efficacy of extended-release dexmethylphenidate (d-MPH-ER) in children

aged 6–12 years with attention-deficit/hyperactivity disorder (ADHD) over a 12-hour period. **Methods:** Data from two multicenter, placebo-controlled, randomized, crossover studies were pooled for a post-hoc analysis. Children aged 6–12 years old who had been stabilized on d-MPH (20 mg/day) or MPH (20–40 mg/day) for at least one month before the study were randomized to receive d-MPH-ER 20 mg/day or placebo for 7 days, followed by the alternate treatment for 7 days. The final dose of each treatment period was administered in a laboratory classroom setting where trained, blinded raters assessed participants. Efficacy variables included change from pre-dose to post-dose time points in Swanson, Kotkin, Agler, M-Flynn, and Pelham (SKAMP) Combined, Deportment, and Attention subscale scores, number of Math questions attempted (Math-Attempted) and number of Math questions answered correctly (Math-Correct). Predose SKAMP scores were compared with scores obtained from 0.5 to 6 hours (SKAMP $AUC_{0–6}$) and 6 to 12 hours post-dose (SKAMP $AUC_{6–12}$) after the final dose on Day 7 of each treatment sequence. An Analysis of Covariance (ANCOVA) model was used to assess comparative efficacy between groups at each time period. **Results:** A total of 122 children participated in the two studies and 121 had evaluable data. D-MPH-ER provided a significant improvement in ADHD symptoms 0.5 hours post-dose compared with placebo (SKAMP Combined score change from pre-dose −2.20 vs 3.49, respectively; $p = .001$). Greater improvements in ADHD symptoms with d-MPH-ER compared with placebo were noted during the first 6 hours post-dose and the second 6 hours post-dose (SKAMP Combined score $AUC_{0–6}$ change from pre-dose d-MPH-ER: −63.44; placebo: 34.63, and SKAMP $AUC_{6–12}$ d-MPH-ER: −50.80; placebo: 48.35, respectively). The superiority of d-MPH-ER versus placebo at all time points was also shown in the SKAMP deportment ($p < .05$ change from baseline), and attention subscores ($p < .05$), and Math-Attempted score ($p < .001$), and Math-Correct score ($p < .001$). The most frequent adverse events in the d-MPH-ER group (occurring in >3% of patients) were decreased appetite and anorexia. No patients receiving d-MPH-ER discontinued treatment due to adverse events. **Conclusions:** This post-hoc analysis from two randomized, placebo-controlled, multicenter studies showed that in school-age children, d-MPH-ER (20 mg/day) provided effective control of ADHD symptoms over a 12-hour period in a classroom laboratory setting. Clinically, this suggests that once-daily administration of d-MPH-ER to children with ADHD provides effective improvement in behavior as early as 0.5 hours after dosing, throughout the school day and into the early evening.

Abstract # 38

Response to Extended-Release Dexmethylphenidate in Ethnically Diverse Children With ADHD: A 12-Hour Placebo-Controlled Laboratory Classroom Study, Frank A. Lopez[1], Rafael Muniz[2], Linda Pestreich[2], James Wang[2], Raul Silva[3]; [1]Children's Development Center, Maitland, FL; [2]Novartis Pharmaceuticals Corporation, East Hanover, NJ; [3]New York University School of Medicine, New York, NY.

Purpose/Background: It has been suggested that ADHD symptoms vary by race and ethnicity. This post-hoc analysis examined the efficacy of extended-release dexmethylphenidate (d-MPH-ER) in the treatment of attention-deficit/hyperactivity disorder (ADHD) in children with diverse racial and ethnic backgrounds. **Methods:** Data from two multicenter, double-blind, randomized, crossover studies conducted in children aged 6–12 years who met DSM-IV criteria for ADHD were pooled and stratified according to "White", "Black", and "Hispanic/Other" racial and ethnic groups. Children stabilized on MPH (20–40 mg/day) or d-MPH (20 mg/day) for at least 1 month prior to entry to the studies were randomized to receive d-MPH-ER 20 mg/day or placebo for 7 days before switching to the alternate treatment for 7 days. The final dose of each treatment was administered in a laboratory classroom setting where trained, blinded raters assessed participants over 12 hours. Efficacy measures included change from pre-dose to various timepoints post-dose (0.5 to 12 hours) on the Swanson, Kotkin, Agler, M-Flynn, and Pelham scale (SKAMP Combined score, Deportment and Attention subscale scores) and written Math tests (questions attempted and number correct). Pre-dose SKAMP scores were compared with scores obtained from 0.5 to 6 hours (SKAMP $AUC_{0–6}$) and 6 to 12 hours (SKAMP $AUC_{6–12}$) post-dose on Day 7 of each treatment sequence. **Results:** 122 children participated and 121 had evaluable data. Demographic characteristics between the two studies were similar. Sixty-eight (55.7%) children were "White", 22 (18%) "Black", and 32 (26.2%) "Hispanic/Other". Significant (all $p < .01$) improvements in change from pre-dose in SKAMP Combined and subscale scores throughout the 12 hours post-dose were noted with d-MPH-ER compared with placebo for the complete study group and each ethnic group. A greater decline in SKAMP scores occurred during placebo treatment for the "Hispanic/Other" group than other ethnic groups; this trend was most pronounced in the morning and early afternoon (combined score $AUC_{0–4}$: Hispanic/other 25.4; black 19.6; white 21.2; $AUC_{4–8}$: Hispanic/other 43.0; black 36.4; white 39.6). The numbers of Math questions attempted and answered correctly were greater for all ethnic groups with d-MPH-ER than placebo at all timepoints ($p < .001$); black patients demonstrated greater improvements than other groups (Math attempted change from pre-dose at 4 hours post-dose: Hispanic/other 60.3; black 86.4; white 49.3. Math correct: Hispanic/other 58.0; black 75.0; white 48.3). **Conclusions:** The results of this post-hoc analysis suggest that there may be subtle differences in how different racial or ethnic groups respond to ADHD treatment. The deterioration in symptoms across the day may be greater in some ethnic groups when their ADHD medication is missed. Once-daily d-MPH-ER 20 mg can provide relief from ADHD symptoms for children from different racial and ethnic backgrounds.

Abstract # 39

Behavioral Effects of Methylphenidate Transdermal System in Children With ADHD, Frank A. Lopez[1], Tarra Shingler[2], Kristen Heinlein[2]; [1]Children's Development Center, Maitland, FL; [2]Shire, Wayne, PA.

Purpose/Background: This study was conducted to assess the efficacy and safety of a methylphenidate transdermal system (MTS) versus a placebo transdermal system (PTS) in a laboratory classroom setting. **Methods:** This was a randomized, double-blind, placebo controlled, laboratory classroom, cross-over study. Children aged 6–12 (mean age 9.1 years) diagnosed with attention-deficit/hyperactivity disorder (ADHD) by DSM-IV-TR criteria were enrolled. The primary behavioral outcome measure used in the classroom was the Swanson, Kotkin, Agler, M-Flynn and Pelham Rating Scale deportment (SKAMP-D) subscale. Additional efficacy measures included Permanent Product Measure of Performance (PERMP) age-adjusted math test scores. **Results:** Mean SKAMP-D scores for the MTS group were significantly better than for the placebo group [3.2 (±3.64) vs. 8.0 (±6.33), respectively; $p < .0001$]. A significant increase in number of completed and attempted math problems in the PERMP was also seen in the MTS group versus baseline (pre-dose) (Shire, Wayne, PA $< .001$). **Conclusions:** Compared with placebo, treatment with MTS resulted in statistically significant improvements in all efficacy measures analyzed. MTS was generally well tolerated and there were no serious adverse events reported. These data suggest that MTS may be an efficacious alternative for the treatment of ADHD in children.

Abstract # 40

The Effects of Transdermal Methylphenidate With Reference to OROS Methylphenidate in ADHD Frank A. López[1], Tarra Shingler[2], Kristen Heinlein[2]; [1]Children's Development Center, Maitland, FL; [2]Shire, Wayne, PA.

Purpose/Background: To evaluate the efficacy and safety of methylphenidate transdermal system (MTS) compared to placebo with reference to OROS methylphenidate in children with ADHD in a naturalistic

community setting. **Methods:** This was a randomized, double-blind, multi-center, parallel-group, placebo-controlled, dose optimization study in children aged 6 to 12 diagnosed with ADHD using DSM-IV-TR criteria. Primary efficacy was assessed by clinicians using the ADHD-RS-IV rating scale. Additional efficacy measures included clinician and parent global assessment ratings (CGI and PGA). **Results:** The change from baseline to study endpoint in mean ADHD-RS-IV scores was −24.2 (±14.55), −22.0 (±14.91), and −9.9 (±14.06), for treatment with MTS, OROS methylphenidate, and placebo, respectively. Compared with the placebo group, a significantly higher percentage of subjects treated with MTS ($p < .0001$) and OROS methylphenidate ($p < .0001$) were rated as improved by CGI and PGA. MTS was generally well tolerated and there were no serious adverse events reported. **Conclusions:** Subjects treated with MTS displayed statistically significant improvements in all efficacy measures used in this study, including the ADHD-RS-IV, CGI and PGA scales, compared with placebo-treated subjects.

Abstract # 41

OROS® MPH Prescribing Patterns among Physician Specialties Treating ADHD, Huabin Zhang[1], Harriette L. Starr[1], Kemner E. Jason[2], Cooper M. Kimberly[1]; [1]McNeil Consumer & Specialty Pharmaceuticals, Fort Washington, PA; [2]Ethicon USA, Somerville, NJ.

Purpose/Background: To examine OROS® methylphenidate (MPH) prescribing patterns among pediatricians and psychiatrists in a community-based setting that treat children with attention-deficit/hyperactivity disorder. **Methods:** Children 6 to 12 years of age who were treated with once-daily OROS® MPH and had complete dosage and titration information were identified from a prospective, open-label, 3-week, randomized (2:1 OROS MPH or atomoxetine) study. Two hundred ninety-seven children were treated by pediatricians (pediatricians and developmental and behavioral pediatricians) and 343 by psychiatrists (psychiatrists and child psychiatrists). Initiation and titration of medication was based on each investigator's clinical judgment. Titration period was defined as days to the final OROS MPH dose in the study. Investigators assessed ADHD symptoms using ADHD Rating Scale (ADHD-RS) and Clinical Global Impression-Severity of Illness (CGI-S). **Results:** Baseline ADHD symptoms were similar between children treated by the two physician groups. Pediatricians and psychiatrists applied similar titration periods (7.72 vs. 7.79 days) and prescribed comparable mean final dose of OROS MPH (32.5 mg/d vs. 33.4 mg/d). The distribution of final OROS MPH dosage was also similar between pediatricians and psychiatrists (18 mg: 22.9% vs. 24.1%; 27 mg: 23.9% vs. 18.7%; 36 mg: 38.4% vs. 39.1%; 54 mg: 13.8% vs. 16.9%; 72 mg: 1% vs. 1.2%; chi-square p = NS). At the end of study, ADHD symptom improvements were comparable between the two specialty groups. **Conclusions:** Pediatricians are similar to psychiatrists in prescribing patterns and ADHD symptom management.

Abstract # 42

OROS MPH Treatment Effects Between Girls and Boys With ADHD, Harriette L. Starr[1], Huabin Zhang[1], Jason E. Kemner[2], Kimberly M. Cooper[1]; [1]McNeil Consumer & Specialty Pharmaceuticals, Fort Washington, PA; [2]Ethicon USA, Somerville, NJ.

Purpose/Background: Studies are needed to evaluate treatment and symptom improvement in girls with attention-deficit/hyperactivity disorder (ADHD). The objective was to evaluate symptom improvement in OROS methylphenidate (MPH)-treated girls and boys with attention-deficit/hyperactivity disorder (ADHD). **Methods:** In this sub-analysis, all 850 once-daily OROS MPH-treated children (219 girls and 631 boys 6 to 12 years of age with ADHD) were identified from a prospective, open-label, 3-week, randomized (2:1 OROS MPH or atomoxetine) trial. Initiation and titration of medication was based on each investigator s clinical judgment. Investigators assessed ADHD symptoms and clinical improvement using the ADHD Rating Scale (ADHD-RS), Clinical Global Impression Severity of Illness (CGI-S) and Clinical Global Impression-Improvement of Illness (CGI-I). Gender differences were measured by ANOVA and Chi-square tests. **Results:** Baseline ADHD symptoms were similar between OROS MPH-treated girls and boys (ADHD-RS: 39.1 vs. 40.3; CGI-S: 4.52 vs. 4.75). At the end of study, ADHD symptom improvement was comparable between girls and boys: change from baseline on ADHD-RS was 20.2 vs. 20.5 and CGI-I was 2.26 vs. 2.21. Analyses comparing the percentage of subjects achieving response (defined as 30%, 40%, or 50% reduction from baseline ADHD-RS as well as scoring 2 on the CGI-I scale) were comparable by gender. **Conclusions:** OROS MPH is equally effective in the management of ADHD symptoms in both girls and boys with ADHD.

Abstract # 43

Improvements in Symptoms of Attention-Deficit/Hyperactivity Disorder in School-Aged Children with Lisdexamfetamine Dimesylate [LDX; NRP104] and Mixed Amphetamine Salts Extended-Release vs. Placebo, Joseph Biederman[1], Samuel W. Boellner[2], Ann Childress[3], Frank A. Lopez[4], Suma Krishnan[5], Hilary Mandler[6]; [1]Clinical and Research Program in Pediatric Psychopharmacology, Massachusetts General Hospital, Harvard Medical School, Boston, MA; [2]Clinical Study Centers, Little Rock, AR; [3]Center for Psychiatry and Behavioral Medicine, Las Vegas, NV; [4]Children's Developmental Center, Maitland, FL; [5]New River Pharmaceuticals Inc, Blacksburg, VA; [6]Shire Development Inc, Wayne, PA.

Purpose/Background: Lisdexamfetamine dimesylate [LDX] is designed as a pharmacologically inactive prodrug in which *d*-amphetamine is covalently bonded to *l*-lysine, a naturally occurring amino acid. It is not until it's metabolized that the pharmacologically active *d*-amphetamine molecule is gradually released, which may make drug tampering difficult and impractical. LDX was designed to have comparable efficacy and tolerability to currently marketed once-daily, extended-release stimulants with reduced potential for abuse, diversion and overdose toxicity. The objective of this study was to compare the efficacy and safety of LDX and mixed amphetamine salts extended-release (MAS XR) with placebo in school-aged children with attention-deficit/hyperactivity disorder (ADHD). **Methods:** This was a phase 2, multicenter study conducted in an analog classroom environment, comparing LDX (30 mg, 50 mg, or 70 mg) and MAS XR (10 mg, 20 mg, or 30 mg) with placebo, in children (6–12 years) with ADHD who had been treated with a stimulant for ≥1 month within the past 6 months. There was a 1-week screening phase, a 3-week MAS XR dose-optimization phase, and a randomized, double-blind, 3-week, 3-way crossover, with subjects receiving 1 week each of LDX (dose equivalent to subject's optimal MAS XR dose), MAS XR (subject's optimal dose), or placebo. Efficacy measures included the Swanson, Kotkin, Agler, M-Flynn, and Pelham scale (SKAMP) and Permanent Product Measure of Performance (PERMP). Safety parameters included adverse events (AEs), vital signs, and ECGs. **Results:** Fifty-two subjects were enrolled and 50 completed the study; 2 terminated during the first double-blind treatment week while on placebo. Least squares (LS) mean SKAMP-deportment scores significantly and comparably improved with both active treatments (LDX, 0.8; MAS XR, 0.8) versus placebo (1.7) ($p < .0001$, for both). Significant improvement in the LS mean PERMP-attempted (LDX, 133.3; MAS XR, 133.6; placebo, 88.2 [$p < .0001$, for both]) and PERMP-correct (LDX, 129.6; MAS XR, 129.4; placebo, 84.1 [$p < .0001$, for both]) was also seen with both active treatments versus placebo. AEs were mild to moderate in severity, with no notable vital signs or changes in ECG parameters with the active treatments. The most common AEs for LDX were insomnia (8%), decreased appetite (6%), and anorexia (4%); for MAS XR they were decreased appetite (4%), upper abdominal pain (4%), insomnia (2%), and vomiting (2%). **Conclusions:** LDX and MAS XR resulted in comparable, significant improvements in ADHD symptom control versus placebo and were well tolerated in school-aged children with ADHD.

Abstract # 44

Efficacy and Safety of Lisdexamfetamine Dimesylate [LDX; NRP104] in Children Aged 6 to 12 Years with Attention-Deficit/Hyperactivity Disorder, Joseph Biederman[1], Hilary Mandler[2], Suma Krishnan[3], Robert L. Findling[4]; [1]Clinical and Research Program in Pediatric Psychopharmacology, Massachusetts General Hospital, Harvard Medical School, Boston, MA; [2]Shire Development Inc, Wayne, PA; [3]New River Pharmaceuticals Inc, Blacksburg, VA; [4]Case Western Reserve University, Cleveland, OH.

Purpose/Background: Lisdexamfetamine dimesylate [LDX] is designed as a pharmacologically inactive prodrug in which *d*-amphetamine is covalently bonded to *l*-lysine, a naturally occurring amino acid. It is not until it's metabolized that the pharmacologically active *d*-amphetamine molecule is gradually released, which may make drug tampering difficult and impractical. LDX was designed to have comparable efficacy and tolerability to currently marketed once-daily, extended-release stimulants with reduced potential for abuse, diversion and overdose toxicity. The objective of this study was to compare the efficacy and safety of LDX with placebo in school-aged children with attention-deficit/hyperactivity disorder (ADHD). **Methods:** This was a phase 3, randomized, multicenter, double-blind, parallel-group study with children (6–12 years) with ADHD (either combined or hyperactive-impulsive subtypes), whether or not on medication for ADHD. The study consisted of 1 week to screen subjects, a 1-week washout, and 4 weeks for the double-blind treatment. Subjects were randomized in a 1:1:1:1 ratio to a single daily dose of LDX (30 mg, 50 mg, or 70 mg) or placebo. The primary efficacy measure was the ADHD Rating Scale (ADHD-RS). Safety parameters included adverse events (AEs), vital signs, laboratory tests, and ECGs. **Results:** Of the 290 randomized subjects, 230 (in brackets) completed the trial (placebo n = 72 [54]; LDX 30 mg n = 71 [56]; 50 mg n = 74 [60]; 70 mg n = 73 [60]). The most common reasons for discontinuations were lack of efficacy (placebo, 17%; 30 mg, 1%; 50 mg, 0%; 70 mg, 1%) and AEs (placebo, 1%; 30 mg, 9%; 50 mg, 5%; 70 mg, 14%). There were no notable demographic differences between groups, with 36% of the subjects previously treated for ADHD. At study end, the ADHD-RS changes from baseline were −6.2, −21.8, −23.4, and −26.7 for placebo, LDX 30 mg, 50 mg, and 70 mg, respectively. Significant improvements in ADHD symptoms were seen with all doses of LDX compared with placebo ($p < .0001$). Significant differences for all doses of LDX versus placebo were observed as early as week 1 ($p < .0001$ for all comparisons). Most AEs were mild to moderate in severity and occurred in the first week. The most common AEs were decreased appetite, insomnia, headache, and upper abdominal pain. **Conclusions:** In children with ADHD, short-term treatment with LDX significantly improved ADHD symptoms and was well tolerated.

Abstract # 45

Abuse Liability Of Intravenous Lisdexamfetamine Dimesylate [LDX; NRP104], Donald Jasinski[1], Suma Krishnan[2], George Kehner[3]; [1]The Johns Hopkins University, Baltimore, MD; [2]New River Pharmaceuticals Inc, Blacksburg, VA; [3]Shire Development Inc, Wayne, PA.

Purpose/Background: Lisdexamfetamine dimesylate [LDX] is designed as a pharmacologically inactive prodrug in which *d*-amphetamine is covalently bonded to *l*-lysine, a naturally occurring amino acid. It is not until it's metabolized that the pharmacologically active *d*-amphetamine molecule is gradually released, which may make drug tampering difficult and impractical. LDX was designed to have comparable efficacy and tolerability to currently marketed once-daily, extended-release stimulants with reduced potential for abuse, diversion and overdose toxicity. The objective of this study was to assess the safety, tolerability and abuse liability of IV LDX in patients with a history of stimulant abuse. **Methods:** LDX 50 mg, *d*-amphetamine 20 mg, and placebo IV were given over 2 minutes at 48-hour intervals to 9 stimulant abusers in a double-blind crossover design. Drugs were given according to 3 × 3 balanced latin squares. LDX 50 mg and *d*-amphetamine 20 mg contain equal *d*-amphetamine base on a mole weight basis. Each dosing day, vital sign measures, and subjective and behavioral effects were assessed with questionnaires before dosing and at 0.5, 1, 1.5, 2, 3, 4, 5, 6, 9, 12, 16, and 24 hours after dosing. At these times and at 5 minutes, a blood sample (5 mL) was taken for *d*-amphetamine levels. **Results:** For *d*-amphetamine, mean peak plasma level of 77.7 ng/mL of *d*-amphetamine occurred at 5 minutes and then rapidly subsided. *d*-amphetamine produced expected d-amphetamine-like effects with mean peak responses at 15 minutes. When compared to placebo, *d*-amphetamine 20 given intravenously produced significant "Liking scores" by both subjects and observers with no significant "Disliking scores" by subjects and observers indicating a significant euphoric response. ($p = .01$). For LDX, mean peak plasma level of 33.8 ng/mL of *d*-amphetamine occurred at 3 hours and remained at this level through the 4-hour observation. LDX produced *d*-amphetamine-like subjective, behavioral, and vital sign effects with mean peak responses at 1 to 3 hours. For the primary variable of Subject Liking VAS, when compared to placebo, LDX 50 mg did not produce significant "Liking scores" by both subjects and observers with significant "Disliking scores" by subjects and observers indicating a lack of significant euphoric response ($p = .29$). Changes in blood pressure following LDX were significant. At the end of the study, subjects were asked which treatment they would take again. Six subjects chose *d*-amphetamine 20 mg, 2 subjects chose none of the treatments, and 1 subject chose LDX 50 mg. **Conclusions:** LDX 50 mg did not produce euphoria or amphetamine-like subjective effects, although there were late occurring increases in blood pressure. The findings support the hypothesis that LDX itself is inactive. After 1 to 2 hours, LDX is converted to *d*-amphetamine. Taken IV, LDX has significantly less abuse potential than immediate-release *d*-amphetamine containing an equal amount of *d*-amphetamine base.

Abstract # 46

Salivary Testosterone, Cortisol, and Dehydroepiandrosterone Levels and Diurnal Variation: Relation to Pediatric Psychotropic Medication Status, Leah C. Hibe[1], Douglas A. Granger[1], Dante Cicchetti[2,3], Fred Rogosch[2]; [1]Penn State University, University Park, PA; [2]University of Rochester - Mt. Hope Family Center, Rochester, NY; [3]University of Minnesota - Institute for Child Development, Twin Cities, MN.

Purpose/Background: Technical advances that enable the non-invasive measurement of biomarkers in saliva combined with the contemporary theoretical emphasis on modeling individual differences as a function of multi-level biosocial processes has added a new dimension to the study of developmental psychopathology. The widespread application of this approach has generated important findings, but in the process, potential confounds capable of affecting our conceptual and statistical models have also been revealed. This study rigorously addressed whether medications prescribed to children with problem behavior are associated with levels of, and diurnal variation in, salivary biomarkers most commonly employed in developmental science- cortisol (C), testosterone (T), and dehydroepiandrosterone (DHEA). **Methods:** Saliva was collected in the AM, midday, and afternoon from 432 disadvantaged and maltreated children ages 6–13 years. Samples were assayed for T, C and DHEA. Psychotropic medications were rigorously documented and coded as antipsychotics, antidepressants, anticonvulsants, hypotensives, or psychostimulants: methylphenidate (Ritalin), methylphenidate (Concerta) and amphetamine salts (Adderall). **Results:** Relative to the no medication comparison group, children taking (1) antipsychotic medications had higher DHEA levels and flat C diurnal rhythms, (2) Ritalin or Adderall had flat T diurnal rhythms, (3) Concerta had higher T levels, (4) antidepressants had flat DHEA diurnal rhythms, and (5) hypotensives had flat C and DHEA diurnal rhythms and higher T levels. **Conclusions:** The findings strongly suggest that medications prescribed to children with problem behavior have potential to introduce error variance in salivary hormones that should be carefully monitored in studies of the endocrine correlates and consequences of developmental psychopathology.

Abstract # 47

The Physical Environment as a Contributing Factor to Overweight in Preschool-Age Children, John Worobey, Harriet S. Worobey; Rutgers University, New Brunswick, NJ.

Purpose/Background: Child obesity in the United States has reached near epidemic proportions, with risk for overweight seen as early as toddlerhood. Given the multifactorial causes of the problem, the purpose of this study was to explore whether diet, activity, or physical setting relates to preschool-age children's Body Mass Index (BMI). **Methods:** Forty children, age 4–5, attending either a University Preschool (UP) or a local Head Start (HS) center participated in this study. The children attending the UP were from middle-income white families, while the HS children were Black or Hispanic, from low-income families. Trained observers recorded what children ate while at UP or HS, and caregivers completed 24-hour diet records the same day. In addition, parents and teachers rated the children on activity. To measure their motor activity, children had an actometer attached to their ankle when they arrived at UP or HS in the morning. **Results:** A 90-minute segment of time corresponding to free play was chosen to compare activity levels of children across programs. Comparisons revealed the HS children to have significantly higher caloric intake and significantly lower motor activity. The HS children had a slightly higher BMI relative to the UP children. However, using CDC growth charts, 52% of the HS children were at risk for overweight, with 28% of them already considered as overweight. In contrast, 37% of the PS children were at risk, with only 1 of them overweight. **Conclusions:** Although the racial/ethnic composition differed by program, an alternate explanation for the motor activity discrepancy rests with the physical environment. Measurement of the two settings revealed that the HS classroom was slightly less than one-half the size in square feet of the UP classroom. As has been reported by Finn et al. (2002), physical activity may be reduced as a response to the restricted play space of particular childcare centers. With obesity rates on the rise, future research should examine the possible role of the physical environment in suppressing spontaneous childhood activity. Work on this project was supported by grants to the first author from Johnson & Johnson, the New Jersey Agricultural Experiment Station, and R01HD047338.

Abstract # 48

Does Desiring a Fat Baby Result in a Fat Baby? John Worobey; Rutgers University, New Brunswick, NJ.

Purpose/Background: Obesity in infancy is due to a variety of complex factors, such as genetic predisposition, excessive feeding, low activity, and mother-infant interactions. It is possible that cultural attitudes toward infant weight gain may also influence the baby's energy intake. Among less educated mothers, for example, the belief that a "heavy" infant is a "healthy" infant has been reported, even in cases where the mothers identify themselves as being obese (Baughcum et al., 1998). **Methods:** 242 low-income mothers and their infants were seen when recruited at a WIC center at about 1-month of age, and again at home when their babies were 3- and 6-months. As part of a larger project, these mothers were asked to indicate where they perceived their infant to fall on a pictorial continuum of babies who differed by size, from leanest to fattest (Rand & Wright, 2000). They were next asked to indicate what size they would like their infant to be. **Results:** At the time of recruitment, Mexican mothers estimated their infants to be the leanest, followed by Other Latina, Black, and White. The same order prevailed in terms of desired infant size, with Mexican mothers appearing to want infants that were heavier than average, followed by the other groups who desired decreasingly leaner infants. By the time of the 3-month home visit, the Mexican infants had in fact exceeded their expected growth by 6 ounces, while infants in the other groups were either at or below their expected weights. **Conclusions:** The results suggest that formula-feeding mothers who view a heavier infant as desirable may actually be overfeeding their infant in an effort to help them grow more rapidly. Culturally speaking, the Mexican mothers may be facilitating an outcome that can unfortunately lead to early overweight and its resultant health problems. Work on this project was supported by NIH Grants R03HD039697 and R01HD047338 to the author.

Abstract # 49

Use of Complementary and Alternative Therapies in an Hispanc Immigrant Inner City Population, Ranjini Chugh[1], Candace J. Erickson[1,2], Margarita Fermin[1]; [1]St. Barnabas Hospital, Bronx, NY, and St. Barnabas Hospital, Bronx, NY; [2]Columbia University College of Physicians and Surgeons, New York, NY.

Purpose/Background: Studies report 12–21% pediatric patients use complementary and alternative medicine (CAM) therapies. These samples have only 2–5% Hispanics. Immigrants may come from cultures where CAM practices are common, so knowing their use of such practices is helpful. This study's purpose was to determine the use of specific CAM practices in a largely Hispanic immigrant pediatric population. We hypothesized that there would be higher rates of CAM use in children whose caregivers had used CAM, had a child with a chronic illness, and were recent immigrants. **Methods:** A structured interview assessing demographics, children's ongoing medical problems and use of CAM modalities was administered by bilingual research assistants to a convenience sample of female caretakers of 4–18 yr olds presenting to 3 inner city general pediatric clinics on specified days during July - August 2005. Statistical analysis was performed using SPSS version 11. **Results:** 101 female caregivers (94% mothers) were interviewed . The children were 53.9% male, with a mean age of 9.2 yrs. 86.3% were Hispanic and 9.8% African-Americans. 76.2% of caregivers were NOT born in the US. For those, the mean years in US was 12. The mean highest grade completed was 10.4. 38.6% of the mothers worked. 52% had children with ongoing medical problems. 23.5% had children with asthma. 37% of mothers reported that their children used at least 1 CAM modality. 30% used home rememdies, 18% herbs and 12% prayer healing. 1–4% used chiropractic, massage, acupuncure, spiritual healing or naturopathy. Parents only reported using CAM modalities for their children that they had used themselves. All parents reporting use of a CAM modality for themselves or their child found it helpful. Use of CAM by children in this population was associated with the mother's use of CAM (Pearson $r = .70$, $p < .001$) and higher maternal education (ANOVA $F = 4.84$, $p = .03$), but was not significantly related to age or sex of the child, mother's age, country of birth, years since immigration, ethnicity, employment status, or having a child with an ongoing medical problem or with asthma. **Conclusions:** There was a higher use of CAM by inner city, immigrant, Hispanic pediatric patients than is reported in other populations. The most commonly used CAM modalities are similar to those described in previous surveys and include home remedies, herbs, and prayer healing. All modalities used were reported as useful. Use of CAM in this population was highly correlated with use of CAM by the caregiver. No child used a CAM modality that had not been used by the caregiver. Pediatric use of CAM was associated with higher caregiver educational level. These associations are similar to those reported by previous pediatric CAM surveys. However, in this sample, other potentially important variables including being an immigrant, time since immigration, and presence of an ongoing illness in a child were not significantly associated with child CAM use.

Abstract # 50

Treatment of Tics in Patients with Tourette Syndrome with Self-Hypnosis Training Enhanced with Videotapes, Jeffrey Lazarus[1,2], Susan K. Klein[2]; [1]University Hospitals Health System, Cleveland, OH; [2]Rainbow Babies and Children's Hospital, Cleveland, OH.

Purpose/Background: Tourette Syndrome (TS) is a complex neuro-behavioral disorder characterized by multiple motor tics, as well as

vocalizations, which wax and wane. Many people believe that these tics and vocalizations are involuntary. However, many patients are able to exercise some control over these behaviors. Self-hypnosis (SH) has been used successfully to treat patients with TS. It can be used either as a primary therapeutic modality, without the use of medication, or as an adjunctive therapy in addition to medication. When used as an adjunct, medication can often be decreased or even discontinued. Daily practice of SH may decrease tic behavior even when the patient is not focusing on the actual tics. **Methods:** Experience with twenty-one patients with TS will be presented. In addition to SH, videotapes were used to help treat all of these patients except the first one. **Results:** In sixteen of the patients, SH alone was successful in controlling their tics. In another patient, clonidine had been successful in controlling one tic, but he developed copropraxia while on this medication. With SH, he was successful in eliminating his copropraxia as well as the other tic. One patient was on multiple medications which were ineffective; SH allowed him to discontinue his medications. SH was also helpful in a patient who developed TS after taking lamotrigine to control his seizures. In another patient, SH was introduced after he had taken clonidine for two years and he was able to discontinue his morning dose without any increase in tic behaviors. Dramatic response was noted after two visits in 14 patients, after three visits in three patients, and there was no response in four patients. Two were not bothered by the tics and were therefore not motivated to make a change. Two additional patients did not respond and were referred for psychological counseling. **Conclusions:** To our knowledge, this is the first report of the use of videotapes to help children with TS modulate their tic behaviors.

Abstract # 50

The Use of Pharmacotherapy to Treat Pediatric Insomnia in Hospitalized Patients, Judith Owens[1], Christine Gould[1], Lisa Meltzer[2], Jodi Mindell[2], Juhee Lee[1]; [1]Brown Medical School, Providence, RI; [2]Philadelphia Children's Hospital, Philadelphia, PA.

Purpose/Background: The purpose of the study was to determine the prevalence of medication use for insomnia in hospitalized children, the types of medications being prescribed, and the medical and demographic variables related to medication use in pediatric inpatients. **Methods:** A retrospective chart review was conducted on all children who were pediatric inpatients at a tertiary care childrens' teaching hospital on 17 randomly chosen dates between 1/1/04 and 12/31/04. Patient demographic variables, medical information (length of stay, admitting and consultation services, admission and discharge diagnoses, etc), and information regarding medications were gathered from an extensive review of the patient discharge summary, physician and nursing notes, consult reports and notes, nursing flow sheets, order sheets and medication records and coded by two independent raters. The charts of all patients on any medication that was administered between 1800 and 0400 on a daily (QD) or as needed (PRN) dosing schedule from one of 8 specific potential sleep medication categories (22 medications total) were then coded for specific medication indications. **Results:** Mean age for hospitalized children included in sample (N = 805) was 7.1 years of age; 55.2% were male, and 66.7% Caucasian, 9.4% African-American, and 11.4% Hispanic. A total of 40 patients (4.9%) were initially classified as having been prescribed a sleep medication; however, less than half of these patients (n = 18) were confirmed by secondary chart review as being on at least one medication for a sleep indication. Sleep medications used were: clonidine (n = 4), diazepam (n = 2), diphenhydramine (n = 6), trazodone (n = 4), zolpidem (n = 4); nine of the prescriptions (45%) were for medications already prescribed at home. The nature of the sleep problems were not specified in the charts for 61.1% (N = 11) of the patients taking sleep medications. Inpatients that were prescribed a sleep medication did not differ from the non-medicated sample by gender or ethnicity; however, patients on sleep medications were older ($t(803) = 2.16$, $p < .05$), and had a longer length of stay ($t(803) = 3.27$, $p = .001$), were more likely to have a psychiatric diagnosis, ($\kappa^2(1, N = 804) = 38.51$, $p < .0001$) and to have had a psychosocial consult during their hospital stay, ($\kappa^2(1, N = 804) = 5.37$, $p < .05$). **Conclusions:** Sleep medications are infrequently prescribed for pediatric inpatients, but are more commonly used in children with a psychiatric diagnosis. Studies using proxy definitions for sleep medications may overestimate the number of sleep medications administered in hospitalized children.

Abstract # 52

Outcome and Symptom Reduction for Children in Enuresis Conditioning Treatment, Michael W. Mellon, Stephen Whiteside; Mayo Clinic, Rochester, MN.

Purpose/Background: Nocturnal enuresis is considered a common childhood disorder that affects between 8% to 10% of the school-aged population and is more common in males. Extensive research has demonstrated the enuresis conditioning alarm to be an empirically established treatment with initial success rates as high as 75% to 80% with low relapse rates. The published literature has infrequently reported characteristics about those children who fail to complete treatment and even less about symptom reduction. Although children who drop out early or those who continue to be enuretic are typically classified as treatment failures, current standards for outcome metrics call for indicators of "symptom reduction" to be included. This study compared the efficacy of an enuresis-conditioning program in a community sample to that reported in the published literature, quantified symptom reduction in children who completed treatment versus those who dropped out, and identified factors associated with treatment drop-out. **Methods:** Subjects were consecutive referrals to an enuresis-conditioning treatment clinic from 1990 to 2001. Data were retrospectively analyzed with regard to sample demographics, multiple indicators of treatment outcome, and symptom reduction. Analyses were first completed with the total sample, including patients who dropped out of treatment (n = 333), secondly for those patients who completed treatment regardless of outcome (n = 261), and then a select sample who were retreated after initial failure or relapsing (n = 73). **Results:** The average age at the start of treatment was 8.77 years, with 60% of males comprising the total sample A total of 65% of the sample were cured with treatment lasting an average of 25.1 weeks. A total of 19% of the sample dropped out prior to 20 weeks. However, those children who dropped out, and those children continuing to wet beyond 20 weeks, benefited from a significant reduction in wetting frequency, 49% and 57%, respectively. For the group that completed treatment, 80% were cured. Younger children were in treatment longer: $F(1,330) = 3.94$, $p = .048$. Children who evidenced more frequent wetting at initiation of treatment led to treatment failure: $F(1,319) = 4.06$, $p = .045$. Those patients who initially failed and then were retreated demonstrated a 60% cure rate. **Conclusions:** This study adds further evidence that the enuresis conditioning treatment is an Empirically Supported Intervention and should be considered a first-line treatment for simple bedwetting. Those patients who actually complete at least 20 weeks of treatment were much more likely to achieve a complete cessation of wetting. Future research should focus on supporting younger children and those who wet more often at baseline in completing an adequate amount of time in treatment in order to increase cure rates. Symptom reduction should also be considered a valid outcome variable by which to judge the effectiveness of the enuresis conditioning treatment.

Abstract # 53

Resident Education in Developmental-Behavioral Pediatrics: Impact of the 80-Hour Work Week and Competency-Based Learning, Viren A. D'Sa[1,2], Pamela C. High[1,2]; [1]Brown Medical School, Providence, RI; [2]Hasbro Children's Hospital, Providence, RI.

Purpose/Background: The ACGME limited resident work to a maximum of 80 hours a week and on-call activity to no more than 30 consecutive hours beginning July 2003. Through the Outcome Project it endorsed general competencies for resident education with integration beginning

July 2002. Little has been studied about the impact of these mandates on resident education, especially in the field of DBP. The objectives of this study are to assess the structure of resident DBP rotations in the context of the duty hour rule, to study the impact of these requirements on resident DBP training and to identify teaching and evaluation of general competencies in resident DBP training. **Methods:** A 39-item online survey was distributed electronically to resident DBP rotation directors in 134 pediatric residency programs in late April 2006. Questions addressed structure of DBP rotations including call schedules, impact of the duty hour rule and competency-based instruction. The initial 45 responses representing 46 pediatric residencies are analyzed in this preliminary report. (Additional responses will be included in any SDBP presentation). **Results:** Data from 46 programs with a mean of 52 pediatric residents (range: 18–150) was obtained. 82% of the respondents were DBP rotation directors with a mean of 8 years (range: 1–30) in that role. Of these, 49% were board certified (BC) DBPs, 13% Pediatricians board eligible in DBP, 11% BC Neurodevelopmentalists, 13% Psychologists, 9% other MDs, and 4% other disciplines. Overall, 68% of respondents have a single DBP rotation (mean: 4.2 weeks), 66% during the PGY-1 year. A third of residency programs reported at least one week of vacation during their DBP rotation. More than 90% of responding programs report that residents take call during the rotation, over half reporting overnight call. Since institution of the 80-hour work week, 72% of responding programs report decreases in DBP block rotations. No increases were reported. Decreases were in clinical (37%), community-based (42%) and didactic (40%) areas of DBP training. Programs with overnight calls were more likely to report reductions in DBP block rotations (15.2% vs. 5.7% reduction; $p < .01$). Medical Knowledge, Patient Care and Communication were often taught in 78–82% of rotations, while Professionalism was often taught in 64%. These competencies were often evaluated in 58–69% of rotations. Practice-based Learning and Systems-based Practice, the 2 most elusive competencies, were often taught in 56–58% of rotations and evaluated in 38%. Priorities for increasing resident education in DBP listed by rotation directors were 1) more faculty time for DBP education, 2) more resident time on DBP rotations and 3) greater DBP presence in continuity settings. **Conclusions:** Preliminary returns from this DBP rotation director survey indicate that programs have made changes in response to ACGME duty hour mandates, resulting in a decrease in DBP block rotations in clinical, community and didactic domains. Overnight call, in particular, appears to be limiting DBP education. Resident education in Practice-based Learning and Systems-based Practice is integral in DBP rotations in well over half of programs surveyed. Opportunities exist for sharing curriculum and evaluation tools to enhance learning in these mandated competencies, which have been more difficult to integrate into resident education.

Abstract # 54

Does Focus on the 15 and the 18 Month Age Facilitate Training in Evidence-Based Developmental Screening? Mary H. Pavan, Sharon Dabrow, Jennifer Takagishi, Rani Gereige, Lynn Ringenberg; University of South Florida, Tampa, FL.

Purpose/Background: Developmental screening with standardized tools such as the Ages and Stages Questionnaire (ASQ) is recommended at every well childcare (WCC) visit. However, we train residents to use focused developmental questions and clinical judgment to identify concerns. An informal survey of the other Florida programs indicates that we are not unique. Only 23% of practicing pediatricians report using standardized tools: only 7% using the ASQ. This project seeks to implement ASQ screening in Continuity Clinics (CC) to facilitate training in evidence-based developmental screening. With methods from Practice-Based Learning and Improvement, the project started small to determine if standardized developmental screening with the ASQ can be increased by focusing on only the 15 and the 18 month WCC visits. **Methods:** Clinic staff at two locations was trained on the importance of screening and the benefits of the ASQ. Staff gave ASQ to each family coming for WCC at 15 or 18 months of age. Doctors scored and discussed results with families. Residents were trained during noon conferences, Development Rotation, and CC. The protocol was shared by email with attendings and residents. Under IRB approval, one author examined the patient log to identify the total number of visits and the WCC visits being studied. All children at 15 and 18 month WCC visits were assigned a unique study number, and charts were reviewed for responses to focused developmental questions, completion of ASQ, concerns identified, and referrals made. Visits in the prior year were compared. **Results:** The rate of focused questions (428/439 = 97.5%) was consistently high. ASQ use increased from 3/166 = 1.8% before the study began to 143/272 = 52.6% during the study. Use was lowest during the busiest month: December (32%). It was highest at the end of the study in March (63%). Doctors documented ASQ review with only 78/121 = 64% of those completed. Some families returned them to the nurse, or did not finish completing them. Family satisfaction with the process and content was measured as part of the ASQ (response rate 112/143 = 78%). Respondents expressed high levels of satisfaction with the process. Forty-six percent (n = 51) gained new ideas for play with their children while 38% (n = 42) were alerted to skills that their child can do. The average number of ASQs done per resident was 2.7 in the 6 month period of study. The number of children with concerns identified with focused questions (238/439 = 54.2%) was compared with the number of children with concerns identified on ASQs (35/143 = 25%). When six of the 46 pediatric and 13 internal medicine-pediatric residents were asked, 5/6 recommended continuing ASQs at 15 and 18 month WCC visits and 4/6 recommended expanding to at least one more WCC visit. They felt the ideal number of ASQs per resident was an average of 12 in 6 months time. **Conclusions:** Our study demonstrates improvement in the rate of standardized developmental screening. Starting at the 15 and the 18 month age is shown to be a useful strategy. This study was supported in part by the Pediatric Clinical Research Center of All Children's Hospital and the University of South Florida, and the Maternal and Child Health Bureau, R60 MC 00003–01, Department of Health and Human Services, Health Resources and Services Administration.

Abstract # 55

Screening in Primary Care: Validation of Parents' Evaluation of Developmental Status: Developmental Milestones (PEDS-DM), Frances P. Glascoe[1], Michelle M. Macias[2], Lynn M. Wegner[3]; [1]Vanderbilt University, Nashville, TN; [2]Medical University of South Carolina, Charleston, SC; [3]Learning First Associates, Chapel Hill, NC.

Purpose/Background: Most primary care providers use informal measures of developmental skills in their efforts to detect children with delays and disabilities. Because fewer than 30% are identified by such an approach, there is need for a brief checklist that has high levels of sensitivity and specificity. **Methods:** Data was drawn from the 2003 standardization and validation studies of the Brigance Inventory of Early Development-II (IED-II), a diagnostic measure of more than 700 items used in special education programs. Subjects were 1171 children, ages 0–7 years of age from 22 states whose sociodemographic characteristics conformed to US population parameters. Pediatric offices/public health clinics, day care/preschool/Head Start programs served as sites. IED-II items were normed by parental report, direct administration or both. The measure has high levels of internal consistency, test-retest reliability and inter-rater reliability (.92–.99), correlates closely with other diagnostic measures, discriminates children with various kinds of disabilities, and has validity in predicting outcomes two to six months later. Children's performance on each domain of the IED-II was grouped into those whose quotients fell at or below the 16th percentile versus above. Binary logistic regression analyses were run at each age level (grouped in 1–3 month intervals in the first and second years of life, and in 4–6 month intervals thereafter) using items within each domain to predict overall performance in

the same domain. Once potential items were identified, each was viewed for sensitivity and specificity. Final item selection was also based on simplicity of stimuli (e.g., did not require scissors, blocks, etc.), and known/perceived likelihood that parents could easily observe or elicit targeted skills. This process refined items to 1 per domain (fine motor, self-help, gross motor, expressive language, receptive language, social-emotional, and, for older children, academic skills in math and reading) for a total of 6–8 items per age range. Sensitivity and specificity were computed across domains and separately across age levels. Analysis of readability was conducted on each age level of the new measure (with response options excluded so as to avoid underestimation). **Results:** For each domain, sensitivity to performance at or below the 16th percentile ranged from 75% to 90% with specificity from 79% to 86%. When analyzed by each age level, sensitivity across domains to performance at or below the 16th percentile ranged from 70% to 93% with specificity from 77% to 93%. Items required a mean reading level of 4.3 grades (range 2.6–6.7). **Conclusions:** The PEDS-DM shows promise as a brief and accurate replacement for informal measures. Additional research should include further study of reliability, reanalysis of accuracy in comparison with other measures, discriminant validity in detection of a range of conditions, feasibility of use in clinic settings, and impact on parents and providers over time.

Accuracy of the PEDS-DM According to Developmental Areas in Identifying Performance in that Same Domain on the IED-II

Domain	Ns Failing Item/Ns Below 16th% tile	Sensitivity	Ns Passing Items/Ns Above 16th% tile	Specificity
Fine Motor	163/191	85%	747/936	80%
Gross Motor	172/197	87%	678/828	82%
Expressive Language	139/168	83%	816/947	86%
Self-Help	132/146	90%	832/982	85%
Receptive Language	152/186	81%	795/934	84%
Social-Emotional	133/177	75%	797/936	85%
Academic/Preacademic (for 39+ months)	63/78	81%	322/407	79%
TOTAL	954/1143	84%	5002/5962	84%

Abstract # 56

Parental Satisfaction with Screening and Diagnosis of Neuro-Developmental Disorders in Young Children: Effects of Demographic Factors, Thyde M. Dumont-Mathieu[1,2], Leandra Wilson[2], Deborah Fein[2]; [1]University of Connecticut Department of Pediatrics, Farmington, CT; [2]University of Connecticut Department of Psychology, Storrs, CT.

Purpose/Background: To explore correlations between parental socio-demographics (maternal education, paternal education and household income), minority status, child diagnostic status (ASD or non-ASD) and satisfaction with the screening, evaluation, and diagnosis of neuro-developmental disorders, including ASDs. **Methods:** As part of an ongoing Early Detection study at the University of Connecticut, parents complete the Modified Checklist for Autism in Toddlers (M-CHAT) during a visit to their pediatric provider or at their Early Intervention site when the child is between 16 and 30 months old. If they remain a positive screen after a follow up Telephone Interview, they are offered a comprehensive developmental and diagnostic evaluation. At the end of a 3-hour evaluation, the family receives verbal feedback regarding the child's developmental functioning, diagnosis and recommendations. A report is mailed to the family within a month of the evaluation. Included with the report are a pre-paid return envelope and a 30 item Post-Evaluation Satisfaction Questionnaire. The Post-Evaluation Satisfaction Questionnaire is a modification of the Client Satisfaction Questionnaire (CSQ-8; Attkisson, C., 1989). **Results:** Satisfaction questionnaires were completed and returned for seventy-four children (mean age = 31 months) who were evaluated and diagnosed with an autistic spectrum disorder (45) or non-autistic spectrum disorder (29). Overall, parents were 'mostly' to 'extremely' satisfied with the screening and evaluation process (sample mean of 3.43 on a 4 point scale). There were differences with certain aspects of the screening, evaluation and diagnostic process by 1) MINORITY STATUS: minority participants reported lower levels of satisfaction with the "quality of the screening and evaluation" that they received (2.70 vs. 3.53; $p = .000$), and reported more unmet needs (2.73 vs. 3.25; $p = .008$); 2) DIAGNOSIS (ASD versus non-ASD): the parents of the children diagnosed with a non-ASD diagnosis reported less ambivalence about completing a developmental screening checklist (3.52 vs. 3.14; $p = .025$); 3) MATERNAL EDUCATION: those with less formal education reported higher levels of satisfaction with the clarity of the explanation provided regarding the child's diagnosis (3.44 vs. 3.06; $p = .018$); 4) PATERNAL EDUCATION: less education was associated with reports that the staff tried to make the family feel comfortable (3.86 vs. 3.63; $p = .033$); agreement with the diagnosis given at the conclusion of the evaluation (3.52 vs. 3.06; $p = .009$); and the intention to follow-through with the recommendations included in the report (3.72 vs. 3.23; $p = .001$); 5) HOUSEHOLD INCOME: families with less household income were more satisfied with the amount of information they were provided at the end of the evaluation (3.83 vs. 3.44; $p = .031$). **Conclusions:** The reported differences in satisfaction with specific aspects of the screening and diagnostic process may be related to expectations of health care providers. Understanding the factors influencing parental satisfaction is an important step if clinicians are to improve the rates of early identification of neuro-developmental disorders.

Abstract # 57

Asking for Help with Child Psychosocial Problems: Race of Parent and When Parents Seek Help, Christine Golden[1], Beth G. Wildman[1], John C. Duby[2]; [1]Kent State University, Kent, OH; [2]Children's Hospital Medical Center of Akron, Akron, OH.

Purpose/Background: Surveys of the American Academy of Pediatrics membership indicate primary care physicians (PCPs) believe attention to behavioral health is an important part of their role, and surveys of parents indicate they want information about psychosocial issues from their child's PCP. However, less than half of the approximately 20% of children seen by PCPs are identified and even less are managed by their PCP. Many parents who are concerned about their child's psychosocial functioning fail to share their concerns with their child's PCP, a necessary precursor to PCP identification and management. Previous research indicates that mothers who are members of racial minority groups are less likely to seek help from PCPS for psychosocial problems than Caucasian mothers. This study examined predictors of mothers help-seeking from professionals for their children's psychosocial problems among African-American and Caucasian mothers. **Methods:** Participants were 44 African American mothers and 66 Caucasian mothers of children between the ages of 4 and 12 years scheduled for a well-child or acute-care appointment with their PCP. Mothers completed a questionnaire asking from whom they had sought help regarding their child's behavior or emotions, as well as, questions regarding potential barriers to help-seeking. **Results:** African American mothers were less likely to seek help from professionals than Caucasian mothers$^2 = 3.881$, $p = .049$). Logistic regressions were performed among African-American and Caucasian mothers with mothers' years of education and mothers' perception that their child was being treated badly by others predicting help-seeking from a professional. For both African-American and Caucasian mothers, tests of the models were significant ($\kappa^2 = 7.006$, $p = .030$; $\kappa^2 = 9.718$, $p = .008$, respectively) with mothers' endorsement that her child was being treated badly by others as the only significant predictor of professional help-seeking for both groups (African-American, b = 2.107, $p = .034$; Caucasian, b = 2.734, $p = .015$). **Conclusions:** Results support

previous findings that African-American mothers are less likely to seek professional help for their child's psychosocial problems than are Caucasian mothers. However, these differences are substantially reduced among mothers who perceive their child is being treated badly by others because of their behavior or emotion. African-American mothers were 7 times more likely to seek help from a professional when they perceived their child's behavior resulted in poor treatment by others. These findings suggest PCPs may be more successful in identifying psychosocial problems in African-American children by asking parents about whether others treat their child poorly because of their child's behavior, rather than asking about parental concern about their child's behavior. Findings of both this study and others indicate that African-American mothers seek help from professionals at lower rates than Caucasian mothers. To identify children at risk for psychosocial problems, PCPs need to assess African-American children in a manner that is likely to result in parental disclosure. Our data indicate that PCPs should ask mothers, "Do you think people treat your child badly because of his/her behavior or emotions?" as this question significantly increased the odds of mothers help-seeking from a professional for both African Americans and Caucasians.

Abstract # 58

Exploratory and Confirmatory Factor Analyses of the Child Health Questionnaire-Child Form 87 (CHQ-CF87) With Children Chronic Conditions and Healthy Children, Witherspoon Dawn[1], Drotar Dennis[2,1], Greenley Rachel[2], Zebracki Kathy[1], Palermo Tonya[3], Burant Christopher[1]; [1]Psychology, Case Western Reserve Univeristy, Cleveland, OH, USA; [2]Rainbow Babies and Children's Hospital, Cleveland, OH, USA; [3]Rainbow Babies and Children's Hospital, Cleveland, OH, USA.

Purpose/Background: The Child Health Questionnaire-Child Form 87 (CHQ-CF87) was constructed to evaluate the self-perceived psychosocial and physical well-being of children and adolescents using multi-item summated rating scales. The goal of this study was to conduct separate exploratory (EFA) and confirmatory factor analyses (CFA) of the CHQ-CF8 with a sample of children and adolescents with chronic conditions. **Methods:** 207 children with chronic conditions including cancer, epilepsy, recurrent headache, inflammatory bowel disease, juvenile rheumatoid arthritis, sickle cell disease, and recurrent sleep disturbance completed the Child Health Questionnaire-Child Form (CHQ-CF87). **Results:** The EFA yielded a reduced version of the measure resulting in less factors and items. Structural equation modeling procedures were used to conduct a second order CFA, which yielded the secondary factors as well. A CFA yielded a good fit to the data. **Conclusions:** CFA derived model of the CHQ-CF87 demonstrated validity for children and adolescents with chronic health conditions.

Plenary Session III
Monday, September 18, 2006 8:30 a.m. – 9:15 a.m.

Abstract # 59

A Memory-Guided Saccade Task of Executive Functions in Subtypes of Attention-Deficit/Hyperactivity Disorder (ADHD), Irene M. Loe[1], Beatriz Luna[2,3], Enami Yasui[2], Heidi M. Feldman[1,3]; [1]Children's Hospital of Pittsburgh, Pittsburgh, PA; [2]Western Psychiatric Institute and Clinics, Pittsburgh, PA; [3]University of Pittsburgh, Pittsburgh, PA.

Purpose/Background: DSM-IV recognizes ADHD subtypes based on behavioral symptoms. Neuropsychological tests do not consistently differentiate ADHD-Combined (C) and ADHD-Predominantly Inattentive (I) subtypes. Oculomotor tasks are objective, non-verbal measures of executive function, easily performed by children, and used to study cognitive and brain systems in children with typical development and neurodevelopmental disorders. Objective: To determine whether responses of children with ADHD-C, ADHD-I, and controls differ on an oculomotor task of spatial working memory (SWM), the memory-guided saccade task (MGS). **Methods:** Experimental cross-sectional study compared 8 to 13 year olds with ADHD-C, ADHD-I and controls. ADHD subjects met DSM-IV criteria. Subjects on stimulants withheld medication the day of testing. Controls were group matched to subjects on age, sex, and IQ. Tasks: (1) visually-guided saccade (VGS) tests the ability to shift gaze to a peripheral stimulus (control condition) and (2) MGS tests the ability to fixate on a central target, encode the location of a stimulus viewed in peripheral vision, and then use working memory to direct gaze to the remembered location after a short (2.5 sec) or long (7.5 sec) delay. MGS was evaluated for % of trials with response inhibition (RI) errors (child broke fixation to look toward the location of the peripheral stimulus prior to the end of the delay period), accuracy of initial and final saccades (degrees of visual angle from the target location), and reaction time (msec) to initiate the first saccade at short vs. long delays. **Results:** All children performed well on the VGS control task (p ns), indicating intact basic sensorimotor function. RI errors decreased with increasing age ($p = .001$). Children with ADHD had more RI errors than controls ($p = .017$). ADHD-C had significantly more errors than controls ($p = .045$) with ADHD-I intermediate (p ns). There was a main effect of group on reaction time to initiate saccades. ADHD-I and control children showed faster reaction times compared to children with ADHD-C on correct MGS trials. There was a trend for a group x delay interaction with ADHD-C children having prolonged reaction times with increased delays on the MGS, compared to shorter reaction times for controls and children with ADHD-I. This finding suggests that children with ADHD-C do not use the increased delay time to prepare a response. There were no differences between the groups on the accuracy of the initial saccade or final resting saccade (p ns). All 3 groups showed similar improvement in the location of the final saccade. **Conclusions:** The MGS task did not demonstrate differences in SWM accuracy in subtypes of ADHD and controls. However, the task revealed differences in response inhibition and in response preparation as indicated by reaction time. These findings indicate difficulties with cognitive control, the ability to filter and suppress irrelevant information, thoughts or actions in favor of relevant ones. Deficits in cognitive control implicate differences in frontostriatal circuits, consistent with other studies on ADHD. The MGS task, coupled with other oculomotor tasks, demonstrates behavioral differences between ADHD subtypes and may elucidate different neural systems underlying them.

MGS Results

	% Response Inhibition Errors	RT Short Delay (SD)	RT Long Delay (SD)	Accuracy in Degrees of Visual Angle (SD)	
Controls (n = 27)	28	616 (154)	499 (158)	2.9 (1.5)	2.6 (2.3)
ADHD-I (n = 12)	37	607 (121)	570 (126)	2.4 (0.9)	1.9 (1.0)
ADHD-C (n = 13)	42	661 (159)	702 (274)	2.6 (1.2)	2.3 (1.0)
Sig (p)	.067	Group $p = .027$; Group*Delay $p = .089$	0.58	0.58	

Abstract # 60

Do Verbal-Performance IQ Discrepancies at 5 Years Persist and Predict School Performance at 8 Years in High Risk Children? Patricia Schram, Noelle Huntington, Clarissa Valim, Marie McCormick, Alison Schonwald; Children's Hospital Boston, Boston, MA.

Purpose/Background: Low birth weight children are at increased risk for learning disabilities (LD) and academic achievement difficulties. It would be

useful to have a means of identifying those children at greatest risk as early as possible. Large discrepancies in Verbal IQ (VIQ) and Performance IQ (PIQ) in younger children are often considered risk factors for the future development of LD. However, the data to support these contentions remain sparse and debatable. The purpose of our study is to compare the VIQ-PIQ discrepancy at age 5 between low-birth-weight children and the general population, and to examine the association between the VIQ-PIQ discrepancy at age 5 and academic achievement at age 8 in a low-birth-weight sample. **Methods:** This is a secondary data analysis of a randomized controlled intervention for premature infants with birth weight < or = 2500 g. Every child had cognitive testing at 5 years of age using the WPPSI and cognitive and academic testing at 8 years of age using the WISC-III and the Woodcock-Johnson Test of Achievement-Revised (broad reading and math scores). Children with a diagnosis of cerebral palsy and/or with FSIQ <80 or >119 were excluded. A total of 503 participants were included in the analyses. **Results:** The VIQ-PIQ discrepancy was considered in the central range if it was between −10 and +10; PIQ > VIQ by more than 10 points was considered a negative discrepancy and VIQ > PIQ by more than 10 points was considered a positive discrepancy. At age 5, the percentage of children outside the central range was 40% in the LBW sample and 24% in the general population. At age 8, 41% of the LBW and 44% of the general population had a VIQ-PIQ discrepancy outside the central range. At age five, the VIQ-PIQ discrepancy ranged from −44 to +29; 40% were outside the central range with 32% showing a negative discrepancy and 8% showing a positive discrepancy. Although there was a moderate correlation between VIQ-PIQ discrepancy scores at age 5 and age 8 ($p < .0001$.), the actual scores changed significantly ($p < .001$) as a result of a decrease in PIQ scores and an increase of VIQ scores. There was no correlation between VIQ-PIQ discrepancy at 5 years and academic performance at 8 years, for either broad reading scores (r = 0.08; $p = .08$) or math scores (r = 0.08; 0.06). Children with extreme discrepancy scores at age 5 still tended to earn average academic scores at age 8. However the children with a positive discrepancy (VIQ > PIQ) at age 5 had significantly higher scores in both reading ($p = .05$) and math ($p = .02$) than those in the central range or with a negative discrepancy. **Conclusions:** Early VIQ-PIQ discrepancies may not be a useful indicator of later academic difficulties. One reason may be that, by age 8, this high risk population looked very similar to the general population in terms of VIQ-PIQ discrepancies and academic performance. This "normalization" process, similar to that seem in other areas of development for low birth weight infants, may create non-linearity in academic development making it difficult to predict future academic performance.

Abstract # 61

Developmental Assessment of Latino Kindergarten Children As They Transition To English-Speaking School Settings, Emily K. Forrest, Bernard P. Dreyer, Purnima T. Valdez, Jennifer W. Fleming, Ingrid Luchsinger, Leyla Almanza, Alan L. Mendelsohn; New York University School of Medicine-Bellevue Medical Center, New York, NY.

Purpose/Background: Children of immigrant parents may be exposed to limited English prior to school entry, making interpretation of developmental assessments challenging. One approach recommended for preschool children from bilingual households is the use of composite measures (e.g., assessment including both languages). However, there is no consensus regarding the developmental assessment of children with limited prior English exposure once they transition to English-dominant school settings. The objective of this study was to compare language and concept readiness scores when Latino children are evaluated using English, Spanish and composite measures. **Methods:** Latino mother-infant dyads were enrolled during the postpartum period in an urban public hospital as part of a long-term longitudinal study. All families were considered high risk due to poverty and low maternal education. Children enrolled in kindergarten were assessed with the Developmental Indicators for the Assessment of Learning, 3rd edition (DIAL-3), using both the English and Spanish versions. Standardized domain scores (Language and Concepts) for the English and Spanish versions were computed according to the manual. In addition, composite scores were computed by summing scaled item scores, using the higher of the two scores (i.e., English or Spanish), and applying the single standardization used across the English and Spanish versions. Information was obtained by parental interview regarding the child's language exposure at home, preschool and kindergarten. Assessment of additional children from the cohort is ongoing. **Results:** 20 children were assessed, all during second half of the kindergarten year. Mean (SD) age was 5.7 (0.25) years. 20 children (100%) were exposed mostly or exclusively to Spanish in the home. 10 (50%) had been exposed to either English or bilingual daycare or preschool. 15 (75%) were in monolingual English kindergartens, with 5 (25%) in bilingual classrooms. Mean (SD) DIAL-3 language scores were 88.7 (15.7) in English, and 83.3 (13.7) in Spanish, and 95.5 (15.0) on the composite ($F = 28.5$, $p < .001$), and concept scores were 89.1 (10.5) in English, 82.1 (10.7) in Spanish and 93.1 (11.0) on the composite ($F = 28.4$, $p < .001$). On the language domain, 50% performed > = 1/3 SD better on the English version, 25% performed better on the Spanish version, and 25% did equally well; on the concept scale, 60% performed better on the English version, 10% performed better on the Spanish version, and 30% did equally well. No association was seen between better performed version and language exposure prior to kindergarten; however, power was limited by sample size. **Conclusions:** Use of monolingual measures of language and concept readiness may lead to underestimation of skills in Latino kindergarten children transitioning from Spanish-predominant to English language settings. Consideration should be given to the development and use of composite measures.

Abstract # 62

Assessing Psychosocial Risk: Mother, Physician, Nurse Report, Anna Maria Patino-Fernandez[1], Ahna Pai[1], Melissa Alderfer[1,2], Merritt M. Jensen-Pace[1], Anne Reilly[1,2], Anne E. Kazak[1,2]; [1]Children's Hospital of Philadelphia, Philadelphia, PA; [2]The University of Pennsylvania, Philadelphia, PA.

Purpose/Background: The Psychosocial Assessment Tool (PAT, Kazak et al., 2001; 2003) is a brief screener for psychosocial risk in pediatric oncology based on the Pediatric Psychosocial Preventative Health Model (PPPHM) a three-tier model (Kazak, in press). Most families are expected to adjust well to their child's diagnosis, despite acute distress (Universal). The second tier includes families with specific vulnerabilities and greater risk (Selected). The third tier is smallest;those at greatest risk (Targeted). The data in this paper are from a revised PAT for family members (PAT 2.0) and a new, parallel, physician and nurse form (Staff PAT). Descriptive data regarding psychosocial risk as rated by mothers, physicians and nurses are reported and associations between the reports of these respondents are assessed. **Methods:** Mothers (N = 130) of patients newly diagnosed with cancer completed the PAT 2.0, which assesses psychosocial risk across 18 domains and yields a sum score. Cutoffs to correspond with the PPPHM were derived. Oncologists (MD; N = 30) and nurses (RN; N = 47) completed the Staff PAT, a 16-item scale with a Likert scale and a categorical classification of risk (Universal, Selected, Targeted). Median time from diagnosis to study participation was less than one week and 89% of approached families consented. The sample was 74% Caucasian. 80% of participants were married/partnered and 61% of the children were male. The average age of mothers was 38 yrs and of children 8 yrs. Families were primarily middle class. Staff PATs were completed within 3 weeks. **Results:** PAT 2.0 scores for this sample ranged from 0–10.5 (M = 2.2, SD = 2.0). Mothers' PAT 2.0 scores were positively correlated with child age (r = .30, $p = .001$). Therefore, child age was controlled in the analyses. Staff PAT scores for MDs ranged from 0–39 (M = 10.6, SD = 7.7) and for RNs from 0–29 (M = 9.4, SD = 6.7). MDs' and RNs' scores were significantly correlated (r = .57, $p < .001$). Staff PAT scores were also significant correlated with PAT 2.0 scores (r[MD] = .47, $p = .001$; r[RN] = .36, $p = .001$). Mother PAT

2.0 scores were classified into categories based on the PPPHM Model and MDs and RNs provided categorical ratings (Table 1). Chi-square analyses were used to compare level of risk ratings by mothers, physicians and nurses. MD and RN risk classification did not significantly differ ($\kappa^2(4) = 7.3$, $p = .12$) and nurse risk classification did not differ significantly from mothers ($\kappa^2(4) = 3.7$, $p = .45$). However, MD classification differed from mother report ($\kappa^2(4) = 16.7$, $p = .002$). **Conclusions:** The PAT 2.0 provides a feasible brief psychosocial risk screening that can be used immediately after the diagnosis of cancer in a child. Physicians and nurses easily and consistently used the form. In general, there is significant association among the three raters (mothers, physicians, nurses) in terms of assessment of psychosocial risk. Consistent with the PPPHM, approximately three quarters of families seen with a newly diagnosed child in our pediatric oncology center are at low risk for ongoing psychosocial distress, despite acute distress at this difficult time. Nevertheless, one quarter of families are at higher risk, related to child or family factor factors, as confirmed by MD and RN report. The data provide evidence that the PPPHM risk classification may be useful in distinguishing which families need the most intense level of psychosocial care.

Table 1: Risk Classification

	Universal	Selected	Targeted
PAT score	78% (101)	17% (22)	5% (7)
Oncologist (N = 120)*	73% (87)	18% (22)	9% (11)
Nurse (N = 104)**	76% (79)	22% (23)	2% (2)

*53% attendings, 47% fellows; average yrs of experience: 7 (range 1–30 yrs).
**60% primary nurse, 40% bedside; average yrs of experience: 5 (range 1–19 yrs).