SDBP
Society for Developmental & Behavioral Pediatrics

# 25th Anniversary Meeting

## Program Book

September 30 - October 1, 2007
The Westin Providence
Providence, RI

www.sdbp.org

SDBP
Society for Developmental & Behavioral Pediatrics

# 25th Anniversary Meeting

September 30 - October 1, 2007
The Westin Providence
Providence, RI

## Table of Contents


Schedule of Activities ..... 2
Schedule-at-a-Glance ..... 3
General Information ..... 4
Hotel Meeting Room Locator (Map) ..... 7
Program Committee and Council ..... 8
Awards and Grants ..... 9
Speaker Disclosures & Corporate Support ..... 10
Exhibitor Product Descriptions ..... 11
Program Schedule ..... 12
2007 Lecture Award Handouts ..... 23
Handouts for Concurrent Sessions ..... 39
Plenary Session Abstracts ..... 139
Poster Session Board Assignments ..... 147
Poster Session Abstracts ..... 149
Advertisements ..... 171



*SDBP National Office*

6728 Old McLean Village Drive
McLean, VA 22101
703-556-9222
Fax 703-556-8729
Email info@sdbp.org
**www.sdbp.org**

# Schedule of Activities

### On-site Registration Hours
Saturday, September 29..... 7:00 am – 5:00 pm
Sunday, September 30..... 7:00 am – 5:00 pm
Monday, October 1..... 8:00 am – 4:00 pm

### Pre-meeting Education Committee Workshops
Friday, September 28..... 1:00 pm – 5:30 pm

### Pre-meeting Fellow Education Workshop
Friday, September 28..... 6:00 pm – 9:00 pm

### Pre-meeting Workshop (A)
Saturday, September 29..... 8:30 am – 12:00 pm

### Pre-meeting Workshops (B, C)
Saturday, September 29..... 8:00 am – 12:00 pm

### Pre-meeting Workshops (D, E, F)
Saturday, September 29..... 1:00 pm – 5:00 pm

### ADHD and Autism SIG Session
Saturday, September 29..... 8:00 pm - 10:00 pm

### Annual Meeting Scientific Sessions
Sunday, September 30..... 9:00 am – 7:00 pm
Monday, October 1..... 7:00 am – 4:00 pm

### Poster Session
Sunday, September 30..... 6:00 pm – 7:00 pm

### SDBP Business Meeting
Sunday, September 30..... 5:00 pm – 6:00 pm

### Luncheon Meeting
Sunday, September 30..... 12:00 noon – 1:45 pm
- Trainee Luncheon
- JDBP Editorial Board Luncheon
- Nurse Practitioners Luncheon

Monday, October 1..... 12:30 pm – 2:00 pm
- Developmental-Behaviroal Pediatrics Program Directors Luncheon
- Past Presidents Luncheon

### Exhibits
Saturday, September 29..... 8:00 am – 7:30 pm
Sunday, September 30..... 8:00 am – 6:30 pm
Monday, October 1..... 8:00 am – 4:30 pm

### SOCIAL EVENTS - *The Westin Providence*
### Welcome Reception
Saturday, September 29..... 6:00 pm – 7:00 pm

### Dinner Social
Sunday, September 30..... 7:00 pm – 10:00 pm

# Schedule-At-A-Glance

| Friday, September 28 | Saturday, September 29 | Sunday, September 30 | Monday, October 1 |
|---|---|---|---|
| **8:00am - 6:00pm**<br>*Pre-Meeting Hypnosis Workshops*<br><br>**1:00pm – 5:30pm**<br>Pre-Meeting Education Workshop: Teaching Developmental-Behavioral Pediatrics to Residents<br>FREE FOR TRAINEES<br><br>**6:00pm – 9:00pm**<br>Pre-Meeting Workshop: Training Developmental Behavioral Pediatrics Fellows in the Age of the Competencies<br><br>**5:00pm – 9:00pm**<br>Executive Council Meeting | **8:00am - 5:00pm**<br>*Pre-Meeting Hypnosis Workshops*<br><br>**8:00am - 12:00noon**<br>*Executive Council Meeting*<br><br>**8:00am - 12:00noon**<br>*3 Half Day Workshops*<br>**Workshop A only will begin at 8:30**<br><br>A. Grantsmanship and Mock Grant Review<br>*Note: Workshop A only will begin at 8:30*<br>B. Interdisciplinary Collaborative Family Systems Intervention for Children with both Medical and Psychiatric Disorders: Applications of a Day Treatment Model<br>C. Improving Payment for Developmental/Behavioral Services Workshop<br><br>**8:00am – 7:30pm**<br>*Exhibits*<br><br>**1:00pm- 5:00pm**<br>*3 Half Day Workshops*<br><br>D. An overview of Empirically Supported Treatments in Pediatric Psychology and an Introduction to Specific Well-supported Techniques<br>E. Complexities of diagnosing Autism Spectrum Disorder in sub-populations: Down Syndrome, Vision Impairment, Hearing Impairment<br>F. Motivational Interviewing: Clinical Skills Training<br><br>**6:00pm – 7:00pm**<br>*Wine and Cheese Welcome Reception*<br><br>**8:00pm - 10:00pm**<br>*ADHD and Autism SIG Session*<br>ADHD and Autism Special Interest Groups and Registries as Agents for Quality Improvement in Developmental-Behavioral Pediatrics | **7:00am – 9:00am**<br>*Committee Meetings*<br>Development<br>Practice Issues<br>Program<br>Communications<br><br>**8:00am – 6:30pm**<br>*Exhibits*<br><br>**9:00am - 7:00pm**<br>*Posters Up*<br><br>**9:00am - 9:15am**<br>*Welcome*<br><br>**9:15am - 10:30am**<br>*Plenary Session 1 - Abstract Presentations 1 - 5*<br><br>**10:30am – 10:45am**<br>*Break*<br><br>**10:45am - 12:00noon**<br>*Lectureship Award and Presentation*<br>New Frontiers for Developmental and Behavioral Pediatrics: Drilling down and Breaking Out<br><br>**12:00noon – 1:45pm**<br>*Trainee Luncheon*<br>*JDBP Editorial Board Luncheon*<br>*Nurse Practitioners Luncheon*<br><br>**1:45pm – 3:15pm**<br>*Concurrent Sessions 1-3*<br><br>**3:15pm - 3:30pm**<br>*Break*<br><br>**3:30pm - 5:00pm**<br>*Concurrent Sessions 4-6*<br><br>**5:00pm – 6:00pm**<br>*SDBP Business Meeting*<br><br>**6:00pm - 7:00pm**<br>*Meet the Author Poster Session*<br><br>**7:00pm - 10:00pm**<br>*Dinner Social* | **7:00am – 8:30am**<br>*Committee Meetings*<br>Membership<br>Research<br>Education<br>Advocacy<br><br>**8:00am – 4:30pm**<br>*Exhibits*<br><br>**8:30am - 9:45am**<br>*Plenary Session 2 - Abstract Presentations 6 - 10*<br><br>**9:45am – 11:00am**<br>*Plenary Session 3 - Abstract Presentations 11 - 15*<br><br>**11:00am – 11:15am**<br>*Break*<br><br>**11:15am – 12:15pm**<br>*Presidential Address*<br><br>**12:15pm - 12:30pm**<br>*Incoming President Address*<br><br>**12:30pm – 2:00pm**<br>*Lunch on your own*<br>*Developmental-Behavioral Pediatrics Fellowship Program Directors Luncheon*<br>*Past Presidents Luncheon*<br><br>**2:00pm – 3:30pm**<br>*Concurrent Sessions 7-9* |

# General Information

## Who Should Attend
This program is planned to meet the needs of pediatricians (researchers, teachers, and/or clinicians), pediatric psychologists, nurses, social workers and other healthcare providers and researchers interested in developmental and behavioral pediatrics. A variety of educational formats will encourage the exchange of new scientific and clinical information and support the interchange of opinions regarding care and management issues relevant to developmental and behavioral pediatrics. Scientific material will be presented through symposia, oral abstracts, small group sessions designed for in-depth exploration of specific topics, and poster presentations.

## Goals
After attending this meeting, participants will be able to:
- Describe social and economic policy issues that affect the healthy development of children
- Explain how an individual pediatrician or program can advocate for families
- Discuss the results of current research
- Demonstrate strategies and skills for teaching others about topics in developmental-behavioral pediatrics

## Registration
All attendees must be registered for the meeting. Registration is located in the Narragansett Lobby. Registration hours are listed in the Schedule of Activities on page 2.

## Pre-Meeting Half-Day Workshops
A select number of courses addressing the needs of pediatricians, psychologists and other professionals caring for children with developmental or behavioral problems will be presented again this year. Workshops will be in half-day formats. Registration for these sessions is in addition to the annual meeting registration. Registration is limited in some sessions, so please check with the meeting registration desk for availability.

## Abstracts
Abstracts selected for the 2007 SDBP Annual Meeting will be presented in plenary and poster sessions highlighting the most outstanding papers from a variety of subspecialties relating to pediatric developmental and behavioral medicine. All accepted abstracts of new and previously presented research are published in this official SDBP program book. Abstracts presenting new scientific findings will also be published online in the *Journal of Developmental and Behavioral Pediatrics*.

## Poster Session and Reception
A poster session highlighting both new and previously presented research will be held on Sunday, September 30 from 6:00 p.m. to 7:00 p.m.

## Exhibits
Exhibits will be located in the Waterplace Ballroom throughout the duration of our meeting.

## Camera and Cell Phone Use
Cameras or video cameras are not permitted in any event during the SDBP Annual Meeting. As a courtesy to fellow attendees, please turn off or silence cell phones during educational sessions.

## Accreditation
We will be offering continuing education credit for the following professions: Physicians, Psychologists, Social Workers and California Board of Behavioral Sciences.

**Physicians**
Cincinnati Children's Hospital Medical Center is accredited by the Ohio State Medical Association to provide continuing medical education for physicians.

Cincinnati Children's Hospital Medical Center designates this educational activity for a maximum of 20.75 (10.0 Saturday, 5.5 Sunday and 5.25 Monday) AMA PRA Category 1 Credit(s) TM. Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Psychologists**
This course is co-sponsored by Amedco and the Society for Developmental and Behavioral Pediatrics. Amedco is approved by the American Psychological Association to sponsor continuing education for psychologists. Amedco maintains responsibility for this program and its content. Maximum of 26.0 hours.

**California Board of Behavioral Sciences**
This course is co-sponsored by Amedco and the Society for Developmental and Behavioral Pediatrics. Course meets the qualifications for up to 26.25 hours of continuing education credit for MFTs and/or LCSWs as required by the California Board of Behavioral Sciences, Provider #PCE875.

**Social Workers**
This course is co-sponsored by R. Cassidy Seminars and the Society for Developmental and Behavioral Pediatrics. R. Cassidy Seminars, ASWB provider #1082, is approved as a provider for continuing education by the Association of Social Work Boards, (www.aswb.org, phone: 1- 800-225-6880) through the Approved Education (ACE) program. R. Cassidy Seminars maintains responsibility for the program. Social workers should contact their regulatory board to determine course approval. Social workers will receive up to 26.25 continuing education clock hours in participating in this course.

# General Information

**Satisfactory completion for Psychologists, California Board of Behavioral Sciences and Social Workers**
Participants must have paid tuition fees, attended their chosen sessions in their entirety and completed an online Attendance/Evaluation form in order to receive a certificate of completion/attendance. Participants not fulfilling these requirements will not receive a certificate. Certificates are available immediately after completing the online evaluation form.

**ADA Statement**
ADA accommodations will be made in accordance with the law. SDBP has made arrangements prior to this meeting for those indicating a need. If you require ADA accommodations, please visit the registration desk.

## Full Disclosure Policy
All faculty participating in the continuing medical education programs are expected to disclose to the program audience any real or apparent conflict(s) of interest related to the content of thier presentation(s). Full disclosure of faculty relationships can be found on page 10 of this program.

## Evaluations
Your opinions are important to us! Please be sure to complete an evaluation form to aid the SDBP Program Committee in evaluating the effectiveness of this educational activity. Please leave your form at the registration desk or mail to SDBP, 6728 Old McLean Village Drive, McLean, VA 22101.

## Nurse Practitioners Luncheon
Nurse practitioners are invited to join in a discussion of the future education and professional development of NP's in the field of developmental-behavioral pediatrics. This is a growing clinical field in which NP's currently have an important role and it is anticipated that this will increase in the future. The education of NP's is changing, with the proposed entry into practice at the doctoral level, yet there remains no formal mechanism for preparation for clinical practice and research in developmental-behavioral peds for NP's. This meeting on Sunday will discuss possible solutions to this need.

## Social Events
**Welcome Reception**
Saturday, September 29, 6:00 pm - 7:00 pm
The Westin Providence
Enjoy time with friends and colleagues in a casual setting.

**Dinner Social**
Sunday, September 30, 7:00 pm - 10:00 pm
The Westin Providence
After viewing the latest science in developmental and behavioral pediatrics at the Poster Session (6:00 in the Waterplace Ballroom), join colleagues and friends for a fabulous dining experience. *The Dinner Social is included in the Annual Meeting registration fee*.

All guests must be registered as an Accompanying Person in order to attend the Social Events.

## WaterFire
While in Providence, be sure to see WaterFire the evening of September 29. This spectacular sight centers on a series of 100 bonfires that blaze just above the surface of the three rivers that pass through the middle of downtown Providence. Visit their web site www.waterfire.org for more information.

## Committee Information
Sunday, September 30, 7:00 am - 9:00 am
Development - Bristol Room
Practice Issues - Kent Room
Program - Washington Room
Communication - Newport Room

Monday, October 1, 7:00 am - 8:30 am
Membership - Bristol Room
Research - Washington Room
Education - Newport Room
Advocacy - Kent Room

**Committee Descriptions**
**PRACTIC ISSUES**
The Practice Issues Committee, which is open to new members, will address the following Goal 6 objectives of the July 2007 Strategic Plan:
1. Analyze, interpret and disseminate the results of the Practice Parameters and Financial Factors survey.
2. Facilitate discussion of practice issues, to include: sessions on coding at annual meetings, venues for discussion at the annual meeting and DB:PREP; and collaboration with the AAP Section on DBP.
3. Determine strategies to champion interdisciplinary practice, to include publicizing successful models of interdisciplinary practice.
4. Evaluate the needs for SIGs and research registries for quality improvement in clinical practice.
5. Promote best practices in DBP to all child health care providers, to include exploration of development of standards of care.

Consider collaborating with other relevant groups to conduct a workforce analysis for the field.

# General Information

**MEMBERSHIP**
The Membership Committee is working on meeting Goal 1 of the strategic plan. Goal 1 reads, "To become the organizational home for professionals engaged in interdisciplinary approaches to developmental-behavioral health." The committee is open to new members.

**RESEARCH**
Description: The research committee works in an interdisciplinary manner to support the SDBP Strategic Goal of promoting and disseminating research in developmental-behavioral health. Its membership spans a broad range of research interests, and is comprised of both experienced and less experienced individuals.

Goals for 2007-2008: Create a database of research expertise within the SDBP Increase mentoring of junior researchers within the SDBP Identify research networks outside the SDBP for potential liaison and collaboration Continue to coordinate the SDBP Research Award Continue to provide expert review of abstracts submitted for the Annual Meeting

The Research Committee is open to new members.

**EDUCATION**
The Education Committee is an interdisciplinary group of individuals interested in promoting innovative, efficient and effective education in Developmental and Behavioral Pediatrics as a means of equipping teachers to help their trainees become competent in promoting optimal developmental and behavioral health for all children. Current goals of the committee include: 1) promoting optimal resident education in DB Pediatrics through providing educational workshops focusing on model methods of teaching and evaluating residents and establishing an online library of such resources; 2) promoting lifelong learning of DB Pediatricians through additional educational activities (e.g. DB Prep, DB Peds Self-Assessment); and 3) provide for ongoing communication among DB Pediatrics educators to address new and ongoing concerns. The committee is open to any member wishing to participate and encourages the participation of fellows.

**ADVOCACY**
The primary agenda item for the Advocacy committee this year will be the identification of 1 and no more than 2 advocacy issues for a 3 year focus. The committee is open to new members and is also seeking a Co-Chair.

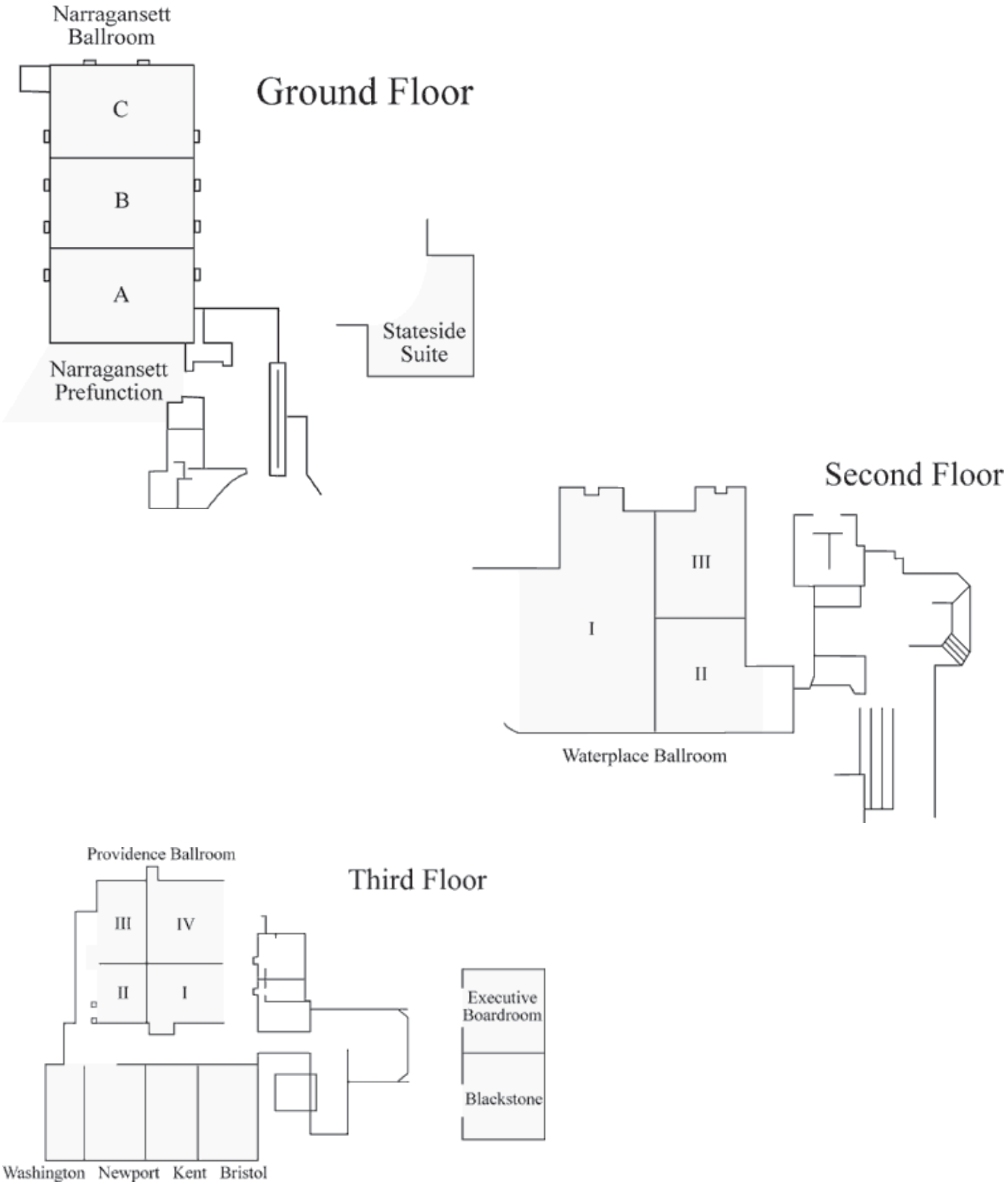
**FELLOWSHIP TRAINING** (the committee is meeting as part of the Program Directors lunch Monday)
The DBP Fellowship Training Committee has had a busy and productive year. As our first official year as a committee, we focused on preparing current and future program directors for the reporting requirements of the ACGME. To this end, Mary Pipan and Carol Weitzman submitted a workshop proposal for the pre-meeting educational workshops that will focus on teaching the ACGME competencies and evaluating programs, fellows and faculty. Dan Coury, Franklin Trimm and Adam Pallant will be presenting at the workshop on different aspects. We hope to have a fellowship relevant workshop submitted each year and anticipate that this will be a valuable and informative workshop.

The other major thrust of the committee in the past year has been to develop a webpage on the SDBP website that will serve as a warehouse of materials that can be used by existing and new programs to evaluate all aspects of their program. In addition, we are gathering current PIFs that we can post for centers considering applying for accreditation. Last, we have added links to valuable websites related to ACGME competencies and writing PIFs.

In the coming year, we hope to continue to develop the webpage, submit another workshop proposal and examine membership in SDBP among fellows who have graduated training programs. We are looking for additional members who wish to contribute ideas and some effort over the next year.

**PROGRAM**
The program committee plans the annual meeting. In this endeavor, we strive to achieve a balance of topics, to select the best science in our field and to present a broad range of topics to be interesting to a diverse group of clinicians, researchers and teachers. The committee selects workshops, evaluates abstracts and meets annually at the meeting. In addition, periodic conference calls occur. The committee is a small but dedicated group and this is not an open meeting. If you are interested in being considered as a member, please contact Program committee chair, Nancy Lanphear MD. We periodically have openings to join this group.

# Hotel Floor Plan



# Program Committee & Executive Council

## SDBP 2007 Program Planning Committee

**Nancy E. Lanphear MD, Chair**
Cincinnati Children's Hosp MC

**Nathan J. Blum, MD**
Children's Hospital of Philadelphia

**Carolyn F. Bridgemohan, MD**
Harvard Medical School
Children's Hospital Boston

**Pamela C. High, MD**
Brown Medical School

**Ronald V. Marino, DO, MPH**
Winthrop University Hospital

**Robyn Mehlenbeck, PhD**
Brown Medical School
Rhode Island Hospital

**Ellen J. Silver, PhD**
Albert Einstein College of Medicine

**Franklin Trimm, MD**
University of South Alabama

**Paul P. Wang, MD**
Pfizer Global Research & Development

## 2006 - 2007 Executive Council

**President**
**David J. Schonfeld, MD (07)**
Cincinnati Children's Hospital
Medical Center

**President Elect**
**Glen P. Aylward, PhD (07)**
Southern Illinois University

**Immediate Past President**
**Paul H. Dworkin, MD (07)**
Connecticut Children's Medical Center

**Secretary-Treasurer**
**John C. Duby, MD (07)**
Akron Children's Hospital

**Council Members**
**William J. Barbaresi, MD (09)**
Mayo Clinic

**Frances Glascoe, PhD (07)**
Vanderbilt University

**Robin L. Hansen, MD (07)**
University of California, Davis

**Pamela C High, MD (09)**
Brown Medical School

**Michelle M. Macias, MD (08)**
Medical University of South Carolina

**Susan Rosenthal, PhD (08)**
University of Texas Medical Branch-Galveston

**Executive Director**
**Laura Degnon, CAE**
McLean, VA

# Awards and Grants

The 2007 SDBP Lecture Award Recipient is:

## Jack P. Shonkoff, M.D.

Jack P. Shonkoff, M.D., is the Julius B. Richmond FAMRI Professor of Child Health and Development at the Harvard School of Public Health and Harvard Graduate School of Education, and founding director of the university-wide Center on the Developing Child at Harvard University. He also chairs the National Scientific Council on the Developing Child, a multi-university collaboration comprising leading scholars in neuroscience, developmental psychology, pediatrics, and economics, whose mission is to bring sound and accurate science to bear on public decision-making affecting the lives of young children.

Dr Shonkoff has received multiple professional honors, including elected membership to the Institute of Medicine of the National Academy of Sciences, elected membership to the American Pediatric Society, designated National Associate of the National Academies, the C. Anderson Aldrich Award in Child Development from the American Academy of Pediatrics, and the Award for Distinguished Contributions to Public Policy for Children from the Society for Research in Child Development. Under the auspices of the National Academy of Sciences, Dr. Shonkoff chaired the Committee on Integrating the Science of Early Childhood Development for the Institute of Medicine and the National Research Council, which produced a landmark report entitled From Neurons to Neighborhoods: The Science of Early Childhood Development. He also served as Chair of the Board on Children, Youth, and Families, and as a member of the Panel on Child Care Policy, the Committee on the Assessment of Family Violence Interventions, and the Roundtable on Head Start Research.

Dr. Shonkoff has served on numerous professional networks and public interest advisory boards, including the core scientific group of the MacArthur Research Network on Early Experience and Brain Development, the Governing Council of the Society for Research in Child Development, and the Executive Committee of the Section on Developmental and Behavioral Pediatrics of the American Academy of Pediatrics. He has authored more than 130 publications, including nine books; co-edited two editions of the widely-heralded Handbook of Early Childhood Intervention; and served on the editorial board of a number of scholarly journals, including Child Development and Infant Mental Health Journal.

Dr. Shonkoff completed his undergraduate studies at Cornell University, medical education at New York University School of Medicine, pediatric training at Bronx Municipal Hospital Center and the Albert Einstein College of Medicine, and fellowship in developmental pediatrics at Harvard Medical School and Children's Hospital in Boston. He has been a visiting professor and delivered named lectureships at 25 universities in the United States, Canada, Mexico, Puerto Rico, Israel, Australia, and China. Prior to assuming his current position, he was the Samuel F. and Rose B. Gingold Professor of Human Development and Social Policy and Dean of The Heller School for Social Policy and Management at Brandeis University.

---

### Young Investigator Manuscript Award

Since 1999, SDBP is again pleased to sponsor the SDBP Young Investigator Award. This award is designed for a first author of a manuscript accepted for publication in the Journal of Developmental and Behavioral Pediatrics who is a trainee, or has completed postdoctoral training within 3 years of the date of submission of the paper. For the purpose of this award, a trainee is defined as an undergraduate or medical student, pediatric resident, fellow in pediatrics, or graduate student or post-graduate clinical trainee in psychology or an allied health profession (i.e., nursing, speech/language therapy, occupational or physical therapy). Due to the excellence of the candidates, this year we are awarding a prize to manuscripts in both the "MD" and "non-MD" categories. The winners of this award will each receive a check in the amount of $500 along with a certificate. This year's recipients will be announced during the SDBP Business Meeting on Sunday, September 30 from 5-6PM.

### SDBP Research Grant

It is with great pleasure that the Society for Developmental and Behavioral Pediatrics announces the return of the SDBP Research Grant for 2007. This is the third year we are offering this award. The SDBP Research Grant is designed to promote research in developmental and behavioral pediatrics, by providing a research grant to a young investigator in our field. The $5,000 grant is for a period of one year, beginning November 1, 2007. Financial support for this grant was provided by generous contributions from a number of former presidents of the society. This year's recipient will be announced during the SDBP Business Meeting on Sunday, September 30 from 5-6PM.

# Disclosure

**Acknowledgement of Commercial Support**
Eli Lilly and Company
Baylor College of Medicine – Medical Genetics Laboratories

**Learning Objectives**
After attending this meeting, participants will be able to:
- Describe social and economic policy issues that affect the healthy development of children
- Explain how an individual pediatrician or program can advocate for families
- Discuss the results of current research
- Demonstrate strategies and skills for teaching others about topics in developmental-behavioral pediatrics

**Statement of Disclosure**
All faculty and planners participating in the continuing medical education programs sponsored by the Society for Developmental and Behavioral Pediatrics are expected to disclose to the program audience any real or apparent conflict(s) of interest related to the content of their presentation(s).

**Faculty Disclosure**

G=Grant/Research Support
C=Consultant/Scientific Advisor
S=Speaker's Bureau
E=Employee
M=Major Stockholder
N=Absence of any relevant financial relationship
O=Other Financial Relationship

R1=Restricted to Best Available Evidence & ACCME content validation statement
R2=Altered Relationship
R3=Altered Control
R4=Peer Reviewed
X=None provided at time of printing

| Name | Disclosure/Resolution |
|---|---|
| Adair, Robin | N/NA |
| Augustyn, Marilyn | N/NA |
| Aylward, Glen P. | N/NA |
| Berlin, Kristoffer S. | N/NA |
| Boegers, Julie | N/NA |
| Carskadon, Mary A. | X |
| Coury, Dan | G - Novartis, Lilly, McNeil<br>C- Novartis, Lilly, McNeil<br>S- Novartis |
| Denboba, Diana | X |
| Dudani, Ameeta | N/NA |
| Dworkin, Paul | X |
| Feldman, Heidi | X |
| Ferran, Diane | N/NA |
| Froehlich, Wendy | X |
| Gannotti, Mary E. | N/NA |
| Hallett, Joseph | N/NA |
| Hironaka, Kari | X |
| Jones, Persephone | N/NA |
| Lanphear, Nancy | X |
| Limbers, Christine A. | N/NA |
| Manning-Courtney, Patricia | N/NA |
| Maslow, Gary | N/NA |
| Needlman, Robert | N/NA |
| Nielsen, Britt | N/NA |
| Owens, Judith A. | G-Cephallon, Boehringer-Ingelhein, and Sepracor. |
| Owens, Judith A. (cont) | C- Sanofi-Aventis, Cephallon, Boehringer-Ingelhein, and Sepracor.<br>S-Cephallon |
| Pandey, Aradhana | N/NA |
| Schonfeld, David | N/NA |
| Schor, Edward | X |
| Shalowitz, Madeline U. | N/NA |
| Shonkoff, Jack P. | N/NA |
| Shulman, Lisa H. | N/ NA |
| Smith, Allison M. | G- R03-NIMH |
| Smith, Jean | N/NA |
| Sutcliffe, Trenna L. | N/NA |
| Stancin, Terry | N/NA |
| Tames, Pamela | N/NA |
| Trimm, Franklin | N/NA |
| Valdez, Purnima T. | N/NA |
| Vanderbilt, Douglas | N/NA |
| Vohr, Betty | N/NA |
| Wang, Paul P. | O- Full Time Employee for Pfizer |
| Wegner, Lynn | N/NA |
| Wirojanan, Juthamas | N/NA |
| Wolfson, Amy | X |
| Wolraich, Mark | G- Eli Lilly/Shire,C- Eli Lilly/Shire |
| Yeatman, Jason D. | N/NA |
| Zimmer, Michelle H. | N/NA |

# Exhibitor Product Descriptions

**Elsevier Medical Pulishers** Booth 1
Medical books, journals, clinics, and electronic media.

**Baylor College of Medicine-Medical Genetics Laboratories** Booth 2
The Medical Genetics Laboratories offer a broad range of diagnostic genetics tests including DNA diagnostics, diagnostic sequencing, cytogenetics, FISH diagnostics, chromosomal microarray analysis, biochemical genetics, and Mitochondrial DNA analysis. Updates of existing tests are also available. Please visit our booth for more information.

**Novartis Pharmaceuticals Corporation** Booth 3
Novartis Pharmaceuticals Corporation is dedicated to discovering, developing, manufacturing and marketing prescription drugs that help meet our customers' medical needs and improve their quality of life. Please visit our exhibit where Novartis Specialists will be available to discuss our products, answer questions and supply scientific information.

**Ellsworth & Vandermeer Press/Forepath.org** Booth 4
Accurate, fast, developmental-behavioral screening, surveilance, and milestones measures. Information on billing/coding and reimbursement.

**Eli Lilly & Company** Booth 5
We provide "Answers that Matter" through scientific innovation, deep clinical medical expertise, and exceptional customer service, to enable people to live longer, healthier, and more active lives.

**Brookes Publishing Co.** Booth 6
For over 29 years, Brookes Publishing has been a leading provider of resources on education, disabilities, child development, early intervention, communication, language, behavior, and mental health. An independent company, Brookes Publishing is headquartered in Baltimore, Maryland.
Website: www.brookespublishing.com

**National Institute of Mental Health** Booth 7
The National Institute of Mental Health, Bethesda, MD, is conducting clinical research studies on Autism and Obsessive Compulsive Disorder for children ages 1-17. Contact: 301-435-7962 or nimh-asd@mail.nih.gov.

**Center for Promotion of Child Development through Primary Care** Booth 8
CHADIS is a web-based system: parents, teens, & teachers complete previsit questionnaires about development, mental health and family functioning; scored results are linked to text and resources; allows information sharing/research.

**CDC: "Learn the Signs. Act Early."** Booth 9
The Center for Disease Control and Prevention (CDC) launched a public awareness campaign called "Learn the Signs, Act Early." To help educate parents about developmental milestones and the warning signs of developmental delays.

**The Society for Developmental and Behavioral Pediatrics (SDBP)** Booth 10
SDBP is an interdisciplinary professional organization that promotes the developmental and behavioral health of all infants, children, adolescents and their families by advancing research, education, evidence-based clinical practice and advocacy. Our Vision is to be the interdisciplinary leaders in optimal developmental and behavioral health for all children. SDBP's Core Values include Biopsychosocial model, Collaboration , Scientific basis of field, Interdisciplinary, Collegiality, Child and family advocacy, Cultural competency, and Teachers/Educators.

**JDBP Book Reviewer Table** Booth 11
SDBP members are invited to select books from the table to review. Reviewers will submit their contact information, take the book home (and keep!) to review, then submit a review for the *Journal of Developmental and Behavioral Pediatrics*.

# Program Schedule

## Friday, September 28, 2007

**1:00pm – 5:30pm** Pre-Meeting Education Workshop - ***An extra fee applies to attend.***
Teaching Developmental-Behavioral Pediatrics to Residents
Chair/Facilitator: *Franklin Trimm, MD*
**Providence Ballroom II and III**

The Education Workshop has been organized to help Developmental-Behavioral Pediatrics residency rotation directors and faculty address the challenges of teaching a large curriculum content in a limited time. The format will consist of an initial large group meeting followed by small group sessions. These sessions will present creative methods to teach residents specific content including parenting, performing developmental-behavioral assessments, normal development, developmental screening and pediatric sleep problems. There will also be sessions on interactive teaching methods and evaluation of longitudinal curriculum. This workshop continues the tradition of previous successful education workshops in providing innovative tools for teaching through interactive and practical sessions.

**5:00pm – 9:00pm** Executive Council Meeting
**Blackstone Room**

**6:00pm – 9:00pm** Pre-Meeting Workshop - ***An extra fee applies to attend.***
Training Developmental Behavioral Pediatrics Fellows in the Age of the Competencies
*Mary Pipan, MD, Dan Coury, MD, Adam Pallant, MD, Franklin Trimm, MD and Carol Weitzman MD*
**Providence Ballroom II and III**

## Saturday, September 29, 2007

**7:00am - 5:00pm** Registration
**Narragansett Lobby**

**8:00pm – 12:00noon** Executive Council Meeting
**Blackstone Room**

**8:00am – 12:00noon** 3 Half Day Workshops
(***Workshop A only will begin at 8:30***)

Workshop A: Grantsmanship and Mock Grant Review - *Workshop A only will begin at 8:30*
Chair: *Paul Wang, MD*
*Lynne Haverkos, MD, MPH, Program Director, Pediatric Behavior and Health Promotion, NICHD/NIH and Marita R. Hopmann, PhD, Associate Director, Training and Staff Development, NICHD Division of Scientific Review*
**Narragansett Ballroom A**

Drs. Haverkos and Hopmann will lead a mock review of 1-2 real grant proposals that have been contributed by SDBP members. The review and subsequent discussion will illustrate the process of grant review by NIH study sections and key elements of high-scoring grant proposals. The aim of this workshop is to assist SDBP members, whether they are novice or experienced grant writers, in the preparation of NIH grant proposals.

# Program Schedule

Workshop B: Interdisciplinary Collaborative Family Systems Intervention for Children with both Medical and Psychiatric Disorders: Applications of a Day Treatment Model
*Robyn Mehlenbeck, PhD, Jack Nassau, PhD, Michelle Rickerby, MD, Pamela High, MD, Diane DerMarderosian, MD, Heather Chapman, MD, Viren D'sa, MD, Fran Pingitore, RN, MSN, Lynn Pascale, LICSW, Tracy Bergeron, RD, Lauren Minotis, BS, DT, Kerry Burke, RN, Darlene Amoroso, RN, Ana Santos, BS, Melissa Soares, BS, GN, Donna Silva, BA, Ann Boland, M.Ed, David Desjardins, MEd*
**Providence Ballroom II and III**

---

Workshop C: Improving Payment for Developmental/Behavioral Services Workshop
*Lynn M. Wegner, MD, Pediatrics Department, University of North Carolina, Chapel Hill, NC, Michelle M. Macias, MD, Division of Developmental Pediatrics and Genetics, Charleston, SC*
**Kent/Bristol Rooms**

**1:00pm- 5:00pm** 3 Half Day Workshops

Workshop D: An Overview of Empirically Supported Treatments in Pediatric Psychology and an Introduction to Specific Well-supported Techniques
*Anthony Spirito, PhD, ABPP, Gary Buchanan, PhD, Angela Stewart, PhD*
**Narragansett Ballroom A**

---

Workshop E: Complexities of diagnosing Autism Spectrum Disorder in sub-populations: Down Syndrome, Vision Impairment, Hearing Impairment
*Susan E. Wiley, MD, Patricia Manning-Courtney, MD, Bonnie Patterson, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH*
**Providence Ballroom II and III**

---

Workshop F: Motivational Interviewing: Clinical Skills Training
*Mariann Suarez, PhD, ABPP and Terry Stancin, PhD, MetroHealth Medical Center, Cleveland, OH*
**Kent/Bristol Rooms**

---

**8:00am – 7:30pm** Exhibits
**Waterplace Ballroom**

**6:00pm – 7:00pm** Welcome Reception
**Waterplace Ballroom**

**8:00pm – 10:00pm** SIGs – NEW ADDITION
ADHD and Autism Special Interest Groups and Registries as agents for Quality Improvement in Developmental-Behavioral Pediatrics
*Pamela High MD, FAAP from SDBP, Michelle Macias MD, FAAP from AAP SODBP, and Mark L. Wolraich MD, FAAP from ABP subspecialty section*
**Narragansett Ballroom A**

# Program Schedule

## Sunday, September 30, 2007

**7:00am - 5:00pm** Registration
**Narragansett Lobby**

**7:00am – 9:00am** Committee Meetings
Development – *Chair Dan Coury, MD*
**Bristol Room**
Practice Issues – *Chair Robin Adair, MD*
**Kent Room**
Program – *Chair Nancy Lanphear, MD*
**Washington Room**
Communication – *Chair Robert Needleman, MD*
**Newport Room**

**8:00am – 6:30pm** Exhibits
**Waterplace Ballroom**

**9:00am – 7:00pm** Posters Up
**Waterplace Ballroom**

**9:00am - 9:15am** Welcome
**Narragansett Ballroom**

**9:15am – 10:30am** Plenary Session 1 - Abstract Presentations
Chair: Nathan J. Blum, MD
**Narragansett Ballroom**

**9:15am - 9:30am** Abstract #1: Language & Behavior: Impact of Degree of Hearing Loss and Very Early Early Intervention
*Betty R. Vohr, Pediatrics, Brown Medical School and Women & Infants' Hospital, Providence, RI, Julie A. Jodoin-Krauzyk, Richard Tucker, Pediatrics, Women & Infants' Hospital, Providence, RI, Deborah Topol, Linguistics, Mary Jane Johnson, Early Intervention, Rhode Island School for the Deaf, Providence, RI*

**9:30am - 9:45am** Abstract #2: The Association of SES, Cognitive Abilities, and Language Skills at 3 and 4 years of age and Reading Skills at 9-12 years of age
*Jason D. Yeatman, Irene M. Loe, Heidi M. Feldman, Pediatrics, Stanford University, Palo Alto, CA*

**9:45am - 10:00am** Abstract #3: The Efficacy of Melatonin Treatment for Sleep Problems in Children with Autism and Fragile X Syndrome
*Juthamas Wirojanan, Sabastian Jacquemont, Beth Goodlin-Jones, Rafael Diaz, Thomas F. Anders, Randi J. Hagerman, M.I.N.D. Institute, University of California Davis, Sacramento, CA*

**10:00am - 10:15am** Abstract #4: Characterization of Autistic Symptoms in Children diagnosed with Autism Spectrum Disorder before age 2
*Lisa H. Shulman, Pediatrics, Albert Einstein College of Medicine, Bronx, NY, Sabrina J. Goodman, Psychology, Fordham University, Hewlett, NY, Maria D. Valicenti-McDermott, Rosa M. Seijo, Deborah J. Meringolo, Pediatrics, Albert Einstein College of Medicine, Bronx, NY*

**10:15am - 10:30am** Abstract #5: Cultural influences on Health Care Use: perceptions of unmet needs and expectations by Latino and Euro-American parents of children with special health care needs
*Mary E. Gannotti, Physical Therapy, University of Hartford, West Hartford, Connecticut, Lawrence C. Kaplan, Pediatrics, Dartmouth Medical School, Lebanon, New Hampshire*

**10:30am – 10:45am** Break
**Waterplace Ballroom**

**10:45am - 12:00noon** Lectureship Award and Presentation
New Frontiers for Developmental and Behavioral Pediatrics: Drilling down and Breaking Out
*Jack P. Shonkoff, MD*
**Narragansett Ballroom**

This presentation will focus on the need to advance the neuroscientific foundations of DBP as well as the importance of building greater capacity to deal with broader social and economic policy issues that affect the healthy development of children.

**12:00noon – 1:45pm** Luncheons
Trainee Luncheon
**Newport Room**
JDBP Editorial Board Luncheon
**Washington Room**
Nurse Practitioners Luncheon Meeting
**Hotel Restaurant**

**1:45pm – 3:15pm** Concurrent Sessions

Concurrent Session 1: Continuing the conversation about the new direction for Developmental and Behavioral Pediatrics
*Jack P. Shonkoff, MD*
**Narragansett Ballroom A**
This will be a time for further discussion with Dr. Shonkoff on the topics and provocative ideas he presents as part of his keynote address. It will be an informal interchange of ideas and discussion and hopefully will raise awareness and challenge the attendee to consider next steps and alternative strategies.

---

Concurrent Session 2: Sleep and Daytime Functioning in Adolescents
*Judith A. Owens, MD, Providence, RI, Mary A. Carskadon, PhD, East Providence, RI, Amy Wolfson, PhD, Worcester, MA*
**Narragansett Ballroom B**

---

Concurrent Session 3: Dyslexia: emerging knowledge of etiology, clinical expression and diagnosis
*Joseph J. Hallett, MD, Anjali Palav, PhD, Pawtucket, RI*
**Narragansett Ballroom C**

**3:15pm - 3:30pm** Break
**Waterplace Ballroom**

**3:30pm - 5:00pm** Concurrent Sessions

Concurrent Session 4: Medical-Legal Partnerships for Developmental and Behavioral Pediatrics
*Douglas Vanderbilt, MD, Division of Developmental and Behavioral Pediatrics, Pamela Tames, Esq., The Medical-Legal Partnership for Children, Betsy McAlister-Groves, LICSW, Child Witness to Violence Project, Kari Hironaka, MD, Division of Developmental and Behavioral Pediatrics, Boston, M*
**Narragansett Ballroom A**

---

Concurrent Session 5: Group Mentoring for Adolescents with Chronic Illness: Promoting positive attitudes towards illness
*Gary Maslow,MD, Wendy Froehlich, MD, The Adolescent Leadership Council of Hasbro Children, Providence, RI*
**Narragansett Ballroom B**

---

Concurrent Session 6: She's too little for THAT: Trauma and the Young Child
*Marilyn Augustyn, MD, Betsy Groves, LICSW, Boston University, Boston, MA*
**Narragansett Ballroom C**

**5:00pm – 6:00pm** SDBP Business Meeting
**Narragansett Ballroom A**

**6:00pm - 7:00pm** Meet the Author Poster Session
**Waterplace Ballroom**

**7:00pm - 10:00pm** Dinner Social
**Narragansett Ballroom**

## Monday, October 1, 2007

**7:00am – 8:30am** Committee Meetings
Membership – *Chairs Heidi Feldman, MD, PhD and Terry Stancin, PhD*
**Bristol Room**
Research – *Chair Paul Wang, MD*
**Washington Room**
Education – *Chair Franklin Trimm, MD*
**Newport Room**
Advocacy – *Chair Jean Smith, MD*
**Kent Room**

**8:00am - 4:00pm** Registration
**Narragansett Lobby**

**8:30am - 9:45am** Plenary Session 2 - Abstract Presentations
Chair: Ronald V. Marino, DO, MPH
**Narragansett Ballroom**

**8:30am - 8:45am** Abstract #6: Impact of Media Exposure and Content on Later ADHD Related Symptoms
*Purnima T. Valdez, Pediatrics, Weill Medical College of Cornell University, New*

*York, NY, Emily K. Forrest, Benard P. Dreyer, Suzy Tomopoulos, Alison B. Smoller, Alan M. Mendelsohn, Pediatrics, NYU School of Medicine, New York, NY*

**8:45am - 9:00am** Abstract #7: The Effect of Caregiving on Attention in Institutionalized and Previously Institutionalized Children
*Persephone Jones, Noelle L. Huntington, Charles A. Nelson, Children's Hospital Boston, Harvard Medical School, Boston, MA*

**9:00am - 9:15am** Abstract #8: Relationship Between Childhood Internalizing Symptoms and Feeding Problems
*Kristoffer S. Berlin, Department of Psychiatry and Human Behavior, Brown Medical School, Providence, RI, Debra J. Lobato, Department of Child and Adolescent Psychiatry, Brown Medical School/Rhode Island Hospital, Providence, RI, Kathryn S. Holman, Psychology, University of Wisconsin-Milwaukee, Milwaukee, WI, Alan H. Silverman, Pediatrics, Medical College of Wisconsin, Milwaukee, WI, W. Hobart Davies, Psychology/Pediatrics, University of Wisc-Milwaukee/Medical College of Wisc, Milwaukee, WI*

**9:15am - 9:30am** Abstract #9: Sleep in Hospitalized Children
*Julie Boergers, Psychiatry & Human Behavior, Judith A. Owens, Pediatrics, Brown Medical School, Providence, RI, Meredith Halsey, Brown University, Providence, RI, Darryl Etter, Rhode Island Hospital, Providence, RI*

**9:30am - 9:45am** Abstract #10: Determinants of Psychosocial Morbidity in Children with Asthma
*Madeleine U. Shalowitz, Pediatrics, Northwestern University, Feinberg School of Medicine, Evanston, IL, Laura Curtis, Christopher Lyttle, Institute for Healthcare Studies, Northwestern University, Feinberg School of Medicine, Chicago, IL, Lisa Sharp, Medicine, University of Illinois in Chicago, Chicago, IL*

**9:45am – 11:00am** Plenary Session 3 - Abstract Presentations
Chair: Robyn Mehlenbeck, PhD
**Narragansett Ballroom**

**9:45am - 10:00am** Abstract #11: Developmental Disregard Predicts Improvement after Constraint-induced Movement Therapy in Hemiplegic Children
*Trenna L. Sutcliffe, Pediatrics, Stanford University, Palo Alto, CA, William C. Gaetz, Diagnostic Imaging, William J. Logan, Neurology, Douglas O. Cheyne, Diagnositc Imaging, Darcy L. Fehlings, Pediatrics, University of Toronto, Toronto, Ontario, Canada*

**10:00am - 10:15am** Abstract #12: Types of Childhood Trauma as Differential Predictors of Health-Related Quality of Life
*Allison M. Smith, Christine B. Sieberg, Ellen C. Flannery-Schroeder, Psychology, University of Rhode Island, Kingston, RI*

**10:15am - 10:30am** Abstract #13: The PedsQL(tm) as an Internet-Administered Health-Related Quality of Life Instrument in Pediatric Endocrinology
*Christine A. Limbers, Psychology, James W. Varni, Pediatrics, Landscape Architecture & Urban Planning, Texas A&M University, College Station, Texas, Tasha M. Burwinkle, William Bryant, Don P. Wilson, Pediatrics, Texas A&M University Health Science Center, Temple, Texas*

# Program Schedule

**10:30am - 10:45am** Abstract #14: Parent-Child Interactions shortly after Brain Injury in Young Children
*Shari L. Wade, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Britt Nielsen, Psychiatry, Terry Stancin, Pediatrics, MetroHealth Medical Center, Cleveland, OH, H. G. Taylor, Pediatrics, Case Western Reserve University, Cleveland, OH, Nicolay C. Walz, Lori A. Bernard, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Keith O. Yeates, Pediatrics, Children's Hospital Columbus, The Ohio State Univ., Columbus, OH*

**10:45am - 11:00am** Abstract #15: The Impact of the Family and Social Environment on Preschool Developmental Outcome of Low and Normal Birth Weight Children
*Ameeta Dudani, Hala Tamim, Alison Macpherson, School of Kinesiology and Health Science, York University, Toronto, Ontario, Can*

**11:00am – 11:15am** Break
**Waterplace Ballroom**

**11:15am – 12:15pm** Presidential Address
*David Schonfeld, MD, SDBP President*
**Narragansett Ballroom**

*Back to the Future: A Constructivist Perspective of Developmental-Behavioral Pediatrics*
Learning objective: By participating in the session, the learner will become familiar with one perspective of the field of Developmental-Behavioral Pediatrics and the implications it holds for future directions in the field.

**12:15pm - 12:30pm** Incoming President Address
*Glen P. Aylward, PhD*
**Narragansett Ballroom**

**12:30pm – 2:00pm** Lunch on Own

**12:30pm – 2:00pm** Developmental-Behavioral Pediatrics Fellowship Program Directors Luncheon - ***An extra fee applies to attend.***
*Chair: Carol Weitzman, MD*
**Washington Room**

The Fellowship Training Committee Annual Lunch will begin with Dr. Brian Alverson from Hasbro Children's Hospital giving a brief but informative talk entitled, Adult Medical Education: Strategies for Lifelong Learning. We will then review the accomplishments of the past year and then prioritize our goals for the coming year and begin planning.

Past Presidents Luncheon - ***Invitation Only***
*Chair: David Schonfeld, MD*
**Bristol Room**

**2:00pm – 3:30pm** Concurrent Sessions

Concurrent Session 7: Alternative Therapies for Children with Autism Spectrum Disorders
*Michelle H. Zimmer, MD, Cincinnati Childrens Hospital Medical Center, Cincinnati, OH, Cynthia R. Johnson, PhD, Children's Hospital of Pittsburgh, Benjamin Handen, PhD, John Merck Program Western Psychiatric Institute, Pittsburgh, PA, Patricia Manning- Courtney, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH*
**Narragansett Ballroom A**

Concurrent Session 8: Novel approaches to well child practices
*Chair: Nancy Lanphear, MD*
*Speakers: Diane A Ferran, MD, Columbia University at Harlem Hospital Center, New York, NY; Trenna L. Sutcliffe, MD, Stanford University, Palo Alto, CA, Aradhana Pandey, MD, MetroHealth Medical Center, Celveland, OH; Lynn M. Wegner, MD, University of North Carolina, Chapel Hill, NC*
**Narragansett Ballroom B**
We will present innovative ideas for teaching and learning in well child care. Our topics will cover training, reimbursement, libraries in clinic and the identification of barriers to screening. This session will allow the learner consider these same topics in their practice or training. Our hope is that you leave this session with information and the enthusiasm to work toward change and quality improvement in your own setting. We will strive to have interaction with the audience and to allow enough time for a discussion with the panel of presenters. Format will be an initial 10-15 minute presentation followed by time for discussion and questions.

---

Concurrent Session 9: Systems Change Approaches for Improving Services for Children with or at Risk of Developing Special Needs
*Mark Wolraich, MD University of Oklahoma Health Sciences Center, Paul Dworkin, MD University of Connecticut School of Medicine, Edward Schor, MD Commonwealth Fund, Diana Denboba, BS Maternal and Child Health Bureau*
**Narragansett Ballroom C**

SDBP
Society for Developmental & Behavioral Pediatrics

# 25th Anniversary Meeting

HANDOUTS

## Slide Presentations


**PAGE**
**Concurrent Session I: Continuing the Conversation about the New Direction for Developmental and Behavioral Pediatrics**
*Jack P. Shonkoff, MD; Chair: Nancy Lanphear, MD*

**PAGE**
Concurrent Session 2: **Sleep and Daytime Functioning in Adolescents**
*Judith Owens, MD*

**PAGE**
**Concurrent Session 3: Dyslexia: Emerging Knowledge of Etiology, Clinical Expression and Diagnosis**
*Joseph Hallett, MD*

PAGE
Concurrent Session 4: Medical-Legal Partnerships for Developmental and Behavioral Pediatrics
*Douglas Vanderbilt, MD*

**PAGE**
**Concurrent Session 5: Group Mentoring for Adolescents with Chronic Illness: Promoting positive attitudes towards illness**
*Gary Maslow, MD*

**PAGE**
**Concurrent Session 6: She's too little for THAT: Trauma and the Young Child**
*Marilyn Augustyn, MD*

**PAGE**
**Concurrent Session 7: Alternative Therapies for Children with Autism Spectrum Disorders**
*Michelle Zimmer, MD*

**PAGE**
**Concurrent Session 8: Novel approaches to well child practices**
*Chair TBD*

**PAGE**
**Concurrent Session 9: Systems Change Approaches for Improving Services for Children with or at Risk of Developing Special Needs**
*Mark-Wolraich, MD*

SDBP
Society for Developmental
& Behavioral Pediatrics

# 2007 SDBP Lecture Award

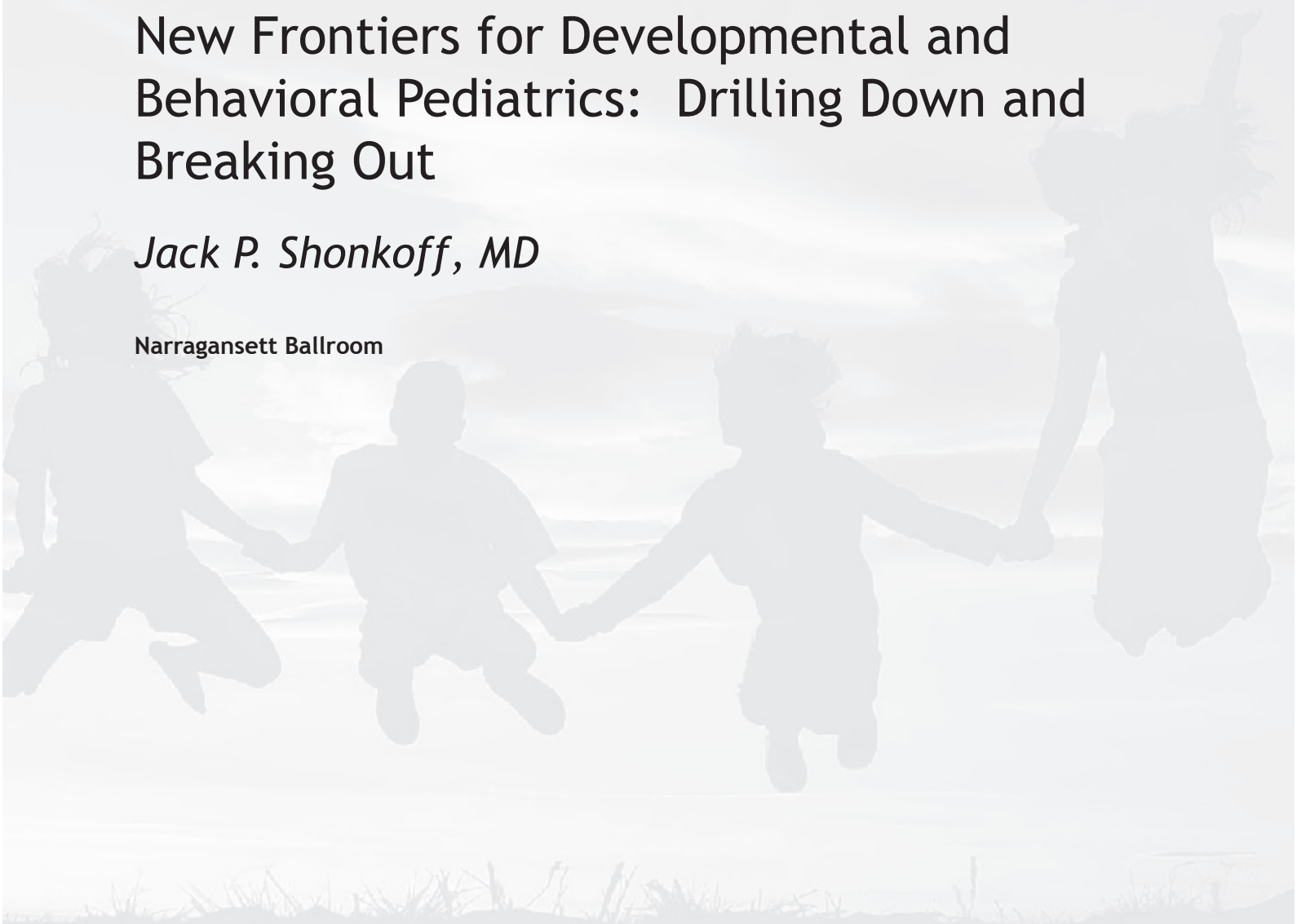
## Sunday, September 30, 10:45 am - 12:00 noon

---

## New Frontiers for Developmental and Behavioral Pediatrics: Drilling Down and Breaking Out

*Jack P. Shonkoff, MD*

**Narragansett Ballroom**



Center on the Developing Child
HARVARD UNIVERSITY

## New Frontiers for Developmental and Behavioral Pediatrics:

### Drilling Down and Breaking Out

Jack P. Shonkoff, M.D.
Julius B. Richmond FAMRI Professor of Child Health and Development
Director, Center on the Developing Child
Harvard University

Meeting of the Society for Developmental and Behavioral Pediatrics
Providence, RI September 30, 2007

Center on the Developing Child
HARVARD UNIVERSITY

## Confronting the Imperative of a Deeper and Broader Science

**Promising Opportunities at the Interface of Neurobiology, Behavioral Research, and Rigorous Program Evaluation**

Center on the Developing Child
HARVARD UNIVERSITY

## The Importance of Viewing the Needs of Children in a Broad Context

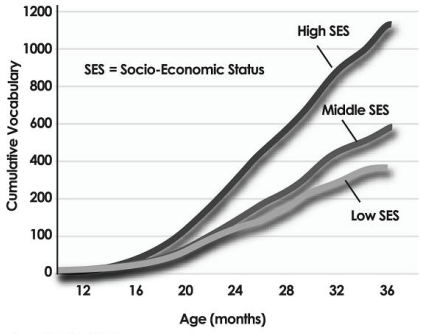
**The healthy development of all children benefits all of society by providing a solid foundation for economic productivity, responsible citizenship, strong communities, and a secure nation.**

Center on the Developing Child
HARVARD UNIVERSITY

## Data to Think About

Center on the Developing Child
HARVARD UNIVERSITY

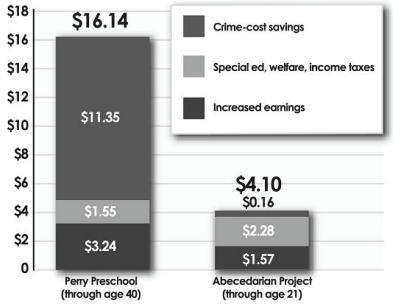
**Disparities in Early Vocabulary Growth**




Source: Hart & Risley (1995)

Center on the Developing Child
HARVARD UNIVERSITY

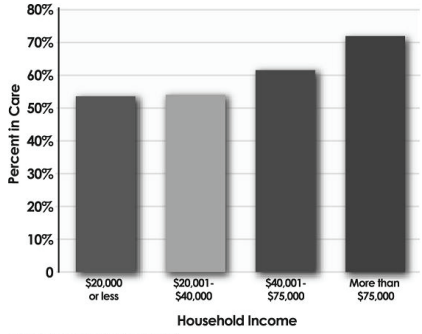
**Cost/Benefit for Two Early Childhood Programs**
(Dollars returned for each dollar invested)




Source: Schweinhart, Montie, Xiang, et al. (2005); Masse & Barnett (2002)

Center on the Developing Child
HARVARD UNIVERSITY

**Children in Nonparental Care**




Source: U.S. Department of Education (2001)

Center on the Developing Child
HARVARD UNIVERSITY

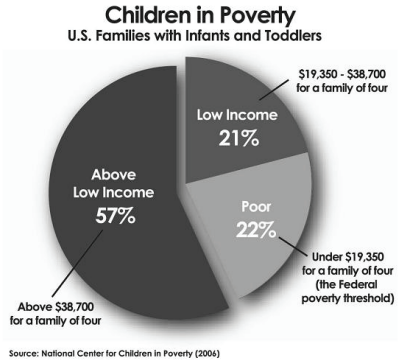
## Canaries in the Mine

**In a study of 188 children under age 3 with newly opened child protection cases, 66% had developmental delays that met the criteria for IDEA-Part C services (MECLI, 2005).**

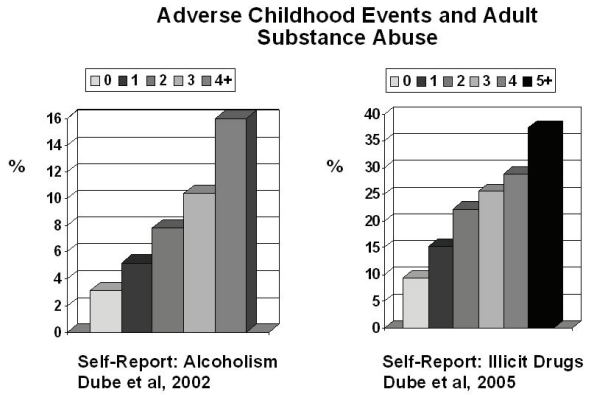
**In a survey of 119 preschool teachers, 39% reported expelling at least one child from their program in the preceding year (Gilliam, 2004).**

**In a survey of two state Medicaid programs and an HMO, stimulant treatment for 2-4 year olds increased 3-fold over 5 years (Zito et al, 2000).**

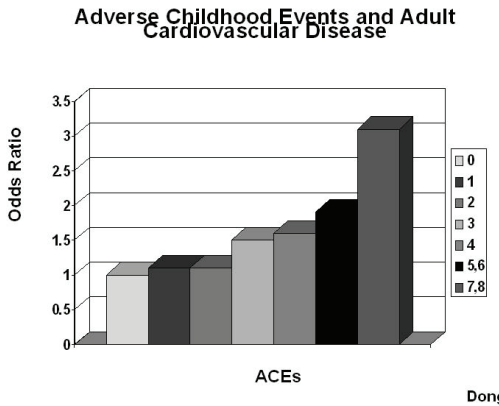
Center on the Developing Child
HARVARD UNIVERSITY




Center on the Developing Child
HARVARD UNIVERSITY




Center on the Developing Child
HARVARD UNIVERSITY




Center on the Developing Child
HARVARD UNIVERSITY

## Building an Integrated Science of Early Childhood Development

**Convergence of findings from neuroscience, developmental psychology, molecular biology, economics, and program evaluation research.**

Center on the Developing Child
HARVARD UNIVERSITY

## Core Concepts of Development

**Brains are built over time, neural circuits are wired in a bottom-up sequence, and the capacity for change decreases with age.**

**The interaction of genes and experience shapes the architecture of the developing brain, and the active agent is the "serve and return" nature of children's relationships with the important adults in their lives.**

Center on the Developing Child
HARVARD UNIVERSITY

## Core Concepts of Development

**Positive and tolerable stress are compatible with normal child development.**

**Toxic stress can damage developing brain architecture and create a short fuse for the body's stress response systems that leads to lifelong problems in learning, behavior, and both physical and mental health.**

Center on the Developing Child
HARVARD UNIVERSITY

## Positive Stress

**Moderate, short-lived physiological responses, such as brief increases in heart rate or mild changes in stress hormone levels.**

**Precipitants include the challenges of meeting new people, dealing with frustration, getting an immunization, or dealing with adult limit-setting.**

**An important and necessary aspect of healthy development that occurs in the context of stable and supportive relationships.**

Center on the Developing Child
HARVARD UNIVERSITY

## Tolerable Stress

**Stress responses that could disrupt brain architecture, but are buffered by supportive relationships that facilitate adaptive coping.**

**Precipitants include death or serious illness of a loved one, a frightening injury, parent divorce, a natural disaster, or terrorism.**

**Generally occurs within a time-limited period, which gives the brain an opportunity to recover from potentially damaging effects.**

Center on the Developing Child
HARVARD UNIVERSITY

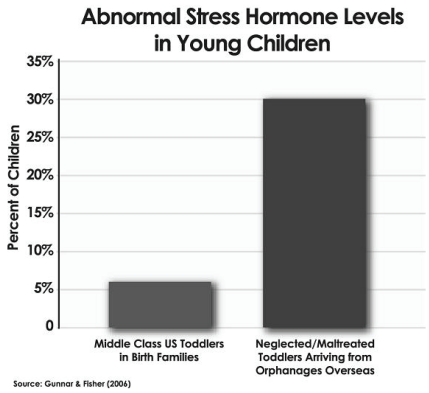
## Toxic Stress

**Strong and prolonged activation of the body's stress management systems in the absence of the buffering protection of adult support.**

**Precipitants include physical or emotional abuse, chronic neglect, severe maternal depression, substance abuse, or family violence.**

**Disrupts brain architecture and leads to stress management systems that respond at relatively lower thresholds, thereby increasing the risk of stress-related physical and mental illness.**

Center on the Developing Child
HARVARD UNIVERSITY




Center on the Developing Child
HARVARD UNIVERSITY

## Implications for Early Childhood Policy

Center on the Developing Child
HARVARD UNIVERSITY

## Science Points Toward a Two-Tiered Approach to Reducing Disparities

**Basic health services and good quality early care and education can promote healthy development and facilitate early detection of problems in all children.**

**Targeted services for children experiencing tolerable or toxic stress can reduce disruptions of the developing nervous and immune systems that lead to later problems in learning, behavior, and health.**

Center on the Developing Child
HARVARD UNIVERSITY

## Maximizing Return on Investment

The basic principles of neuroscience and human capital formation indicate that later remediation will produce less favorable outcomes than preventive intervention.

Low cost services that have little impact are a waste of money. Responsible investments focus on effective programs that are well implemented and improved continuously.

Center on the Developing Child
HARVARD UNIVERSITY

## Policies that Affect Children Extend Beyond Health Care and Education

If we really want to promote better outcomes for children, then we must apply the science of early childhood and brain development to a broad range of policies …

including child protective services, adult mental health, environmental protection, and workforce development programs for low income mothers, among others.

Center on the Developing Child
HARVARD UNIVERSITY

## Three Core Challenges Facing Developmental and Behavioral Pediatrics

Center on the Developing Child
HARVARD UNIVERSITY

## Closing the Gap Between What We Know and What We Do

Need to address the paradox of a rapidly growing science base, yet persistently inadequate investment in the health and development of vulnerable, young children and families, including limited commitment to the training and retention of a skilled early childhood workforce.

Center on the Developing Child
HARVARD UNIVERSITY

## Searching for New Partners and a More Powerful Message

Need for creative alliances with leaders in both the public and private sectors to reduce significant inequalities in health and development, beginning in the earliest years of life, as both a moral responsibility and a critical investment in our nation's social and economic future.

Center on the Developing Child
HARVARD UNIVERSITY

## Expanding the Boundaries of Developmental and Behavioral Pediatrics Beyond the Clinical Setting

Need to broaden and deepen the scientific foundation, enlarge the field of active engagement, and establish a unique niche as a trusted knowledge broker at the interface of science, policy, and practice.

Center on the Developing Child
HARVARD UNIVERSITY

**www.developingchild.harvard.edu**

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

**A Promising Opportunity for Developmental and Behavioral Pediatrics at the Interface of Neuroscience, Psychology, and Social Policy: Remarks on Receiving the 2005 C. Anderson Aldrich Award**

Jack P. Shonkoff

*Pediatrics* 2006;118;2187-2191
DOI: 10.1542/peds.2006-1728

**This information is current as of November 4, 2006**

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://www.pediatrics.org/cgi/content/full/118/5/2187

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2006 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

SPECIAL ARTICLE

# A Promising Opportunity for Developmental and Behavioral Pediatrics at the Interface of Neuroscience, Psychology, and Social Policy: Remarks on Receiving the 2005 C. Anderson Aldrich Award

**Jack P. Shonkoff, MD, FAAP**

Center on the Developing Child, Harvard University, Cambridge, Massachusetts

The author has indicated he has no financial relationship relevant to this article to disclose.

I AM DEEPLY grateful to the American Academy of Pediatrics for this wonderful award and truly humbled by the distinguished list of previous recipients. I view this recognition less as a personal accolade and more as an opportunity to reflect on how the evolution of my own career might contribute to the ongoing process of defining both the science and the practice of pediatrics.

Twenty years ago, I was the director of a division of developmental and behavioral pediatrics in a university hospital. Ten years ago, I changed my work address but not my core interests and accepted a position as dean of a graduate school for social policy and management. Five years ago, I participated in a press conference at the National Academy of Sciences to announce the release of a new report from the Institute of Medicine and National Research Council entitled, *From Neurons to Neighborhoods: The Science of Early Childhood Development*.[1] And, 3 years later, I had the pleasure of joining 11 distinguished neuroscientists, developmental psychologists, economists, and communications researchers to launch the National Scientific Council on the Developing Child.

The mission of the National Scientific Council is to build informed, bipartisan leadership in both the public and the private sectors to close the gap between what we know and what we do to create a strong foundation for successful learning, adaptive behavior, and sound physical and mental health beginning in the earliest years of life. Central to this concept is the ongoing generation, analysis, and integration of established knowledge and the critical task of educating policy-makers, business executives, and civic leaders about the rapidly growing science of early childhood development and its underlying neurobiology. My personal commitment to this effort is deeply grounded in a recognition that the promotion of healthy development requires far more than access to hospitals and clinical offices. To this end, I have worked hard to strengthen my ability to serve as a knowledge broker on behalf of young children and their families in the complex world of social policy.

The list of previous Aldrich Award honorees provides an instructive historical record of the multifaceted incorporation of developmental knowledge into pediatric practice and public policy. Four decades ago, Julius Richmond (1967) laid

www.pediatrics.org/cgi/doi/10.1542/peds.2006-1728

doi:10.1542/peds.2006-1728

This article is adapted from remarks presented on the occasion of receiving the C. Anderson Aldrich Award at the October 2005 meeting of the American Academy of Pediatrics. It addresses the need for a broader and deeper science of developmental and behavioral pediatrics and for expanding its boundaries beyond the clinical setting and into the realm of social policy.

Accepted for publication Jun 16, 2006

Address correspondence to Jack P. Shonkoff, MD, FAAP, Center on the Developing Child, Harvard University, 50 Church St, 4th Floor, Cambridge, MA 02138. E-mail: jack_shonkoff@harvard.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275). Copyright © 2006 by the American Academy of Pediatrics



Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

down the gauntlet by identifying child development as the basic science of pediatrics.[2] Over the ensuing years, the fundamental importance of relationships for both understanding and facilitating healthy adaptation has been underscored by honoring the work of Erik Erikson, Sally Provence, John Kennel, Marshal Klaus, and Mary Ainsworth, among others. Award presentations to Benjamin Spock and Berry Brazelton highlighted the importance of translating the science of development into the art of child rearing. Honors for Leo Kanner, Gunnar Dybwad, and Allen Crocker affirmed the academy's commitment to both empirical inquiry and committed advocacy on behalf of children with exceptional needs. Recognition of the work of William Frankenburg and Paul Dworkin acknowledged the complex challenges of assessing development in the pediatric setting. And, tributes to the seminal thinking of Morris Green and Robert Haggerty affirmed the critical importance of viewing the health and development of children within a broad community and societal context.

## BUILDING A BROADER AND DEEPER SCIENCE OF DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS

As we reflect on the contributions of 4 decades of Aldrich awardees in the context of contemporary medicine, it is clear that the time has come to reenergize Richmond's notion of child development as a basic science of pediatrics.[3] Although the study of the developing child remains central to the promotion of children's health, its underlying scientific foundations and its interdisciplinary roots are increasingly complex. From its early origins in the descriptive work of Arnold Gesell, among others, the knowledge base for child development has now moved far beyond the domain of psychology and into the realms of neuroscience, molecular biology, genomics, and a broad range of social and behavioral sciences, and the implications of this growth in knowledge are compelling. Stated simply, developmental and behavioral pediatrics must move beyond its longstanding focus on the attainment of age-linked milestones and begin to focus more on the core concepts of human development that emerge at the interface among multiple biological and social sciences.[4–7] The following are offered as examples of these fundamental principles.

### Brains, Skills, and Health Are Built Over Time

The early years of life matter because the interactive influences of both early experience and gene expression affect the architecture of the brain, the emergence of capabilities, and the development of the immune system. As these complex systems mature, they establish either a sturdy or a fragile foundation for all the developmental achievements and physical and mental health that follow.

### Social, Emotional, and Cognitive Development Are Highly Interrelated

Although each of these domains can be studied individually in a laboratory or described separately in its own chapter in a textbook, the brain is a highly integrated organ, and its multiple functions cannot be isolated from each other in vivo. Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities, and all are important prerequisites for success in school, in the workplace, and in the community. Therefore, if we really want to build a strong platform for healthy development and effective learning in the early childhood years, then we must pay as much attention to children's emotional well-being and social capacities as we do to their cognitive abilities and early literacy skills.

### Brain Architecture and Human Capabilities Are Built in a Hierarchical, "Bottom-up" Sequence

The neural circuits that process basic information are wired earlier than those that process more complex information. Higher circuits build on lower circuits, skills beget skills, and the development of higher-level abilities is more difficult if lower-level circuits are not wired properly.

### Brain Plasticity and the Ability to Change Behavior Decrease Over Time

Brain circuits stabilize with age, making them increasingly more difficult to alter. Thus, although the window of opportunity for adaptive development remains open for many years, the costs of remediation grow with increasing age. Stated simply, it is more efficient, both biologically and economically, to get things right the first time than to try to fix them later.

### Relationships Are the "Active Ingredients" of Early Experience

Nurturing and responsive interactions build healthy brain architecture that provides a strong foundation for later learning, behavior, and health. Recurrent and excessive stress in the absence of protective relationships results in persistent activation of the body's stress-management systems, which includes the continuous elevation of serum cortisol. These increased hormone levels undermine the immune response and disrupt brain architecture by impairing cell growth and interfering with the formation of healthy neural circuits.

### The Dynamics of Stress in the Developing Child Offer a Promising Model for Thinking About Causal Mechanisms That Mediate Differences in Learning, Behavior, and Physical and Mental Health

The higher prevalence of developmental problems, school difficulties, and poor health outcomes among children who live in disadvantaged environments has been well documented for decades. That robust cor-



Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

relation needs no further confirmation. What is needed, however, is greater understanding of how the adverse experiences associated with poverty, abuse, neglect, racial/ethnic discrimination, and exposure to family violence, among others, can lead to a lifetime of illness and diminished capabilities. Research on the biology of stress in the early years of life offers a promising avenue of investigation to elucidate this phenomenon.

The National Scientific Council on the Developing Child (2005) has proposed a simple taxonomy for addressing the experience of adversity in young children, based on 3 categories: positive, tolerable, and toxic stress.[6]

"Positive stress" is characterized physiologically by moderate, short-lived stress responses such as brief increases in heart rate or mild changes in stress hormone levels. Precipitants include the challenges of meeting new people, dealing with frustration, mastering separation, getting an immunization, and accepting adult limit-setting, among many others. The key feature of positive stress is that it is an important and necessary aspect of healthy development. Its defining characteristic is that it occurs in the context of stable and supportive relationships.

"Tolerable stress" refers to stress responses that could potentially disrupt brain architecture but are buffered by supportive relationships that create safe environments that facilitate adaptive coping. Precipitants include the death or serious illness of a loved one, a frightening injury, serious family conflict, a natural disaster, terrorism, and homelessness. The defining characteristic of tolerable stress is that it generally occurs within a time-limited period, during which protective relationships help to bring the body's stress-management systems back to baseline, which then gives the brain time to recover and thereby reverse potentially damaging effects.

"Toxic stress" refers to strong, frequent, and/or prolonged activation of the body's stress-management systems in the absence of the buffering protection of adult support. Precipitants include extreme poverty, recurrent physical and/or emotional abuse, chronic neglect, severe maternal depression, parental substance abuse, and family violence. The defining characteristic of toxic stress is that it disrupts brain architecture and leads to stress-management systems that establish relatively lower thresholds for responsiveness that persist throughout life, thereby increasing the risk of stress-related physical and mental illness well into the adult years.

The primary prevention of toxic stress in early childhood and the provision of immediate intervention when it is detected at any age present a critical challenge to the practice of pediatrics. In many respects, the primary care setting is the most natural place to coordinate such critical work. On the other hand, fully effective prevention and treatment require resources and expertise that exceed the capacity of all but a few medical facilities, even at the tertiary care level. Thus, although the nature of the problem lies at the intellectual center of developmental and behavioral pediatrics, the key to its solution rests in the broader domain of social policy.

## USING KNOWLEDGE TO INFORM CONSTRUCTIVE CHANGE IN BOTH POLICY AND PRACTICE

The recent reauthorization of 2 federal laws illustrates how the gap can be narrowed between what we know and what we do to promote healthy child development. The first example was illustrated by the renewal of the Child Abuse Prevention and Treatment Act as the Keeping Children and Families Safe Act of 2003 (Pub L 108–36). This legislation requires states to establish "provisions and procedures for referral of a child under the age of 3 who is involved in a substantiated case of child abuse or neglect to early intervention services funded under Part C of the Individuals with Disabilities Education Act." The second example can be found in the reauthorization of the Individuals with Disabilities Education Act of 2004 (Pub L 108–446), which included a similar provision. Both of these changes in federal law were based on an explicit recommendation included in *From Neurons to Neighborhoods*.

Before the enactment of this new policy mandate, a pilot project was conducted in Massachusetts to test and study its implementation. During a 2-year period, 218 children under 3 years of age with newly opened child protection cases were successfully referred to local early intervention programs and received developmental evaluations. Examination of the assessment data found that 51% of the children had documented delays or diagnosed conditions that met eligibility criteria for Individuals with Disabilities Education Act-Part C services (Massachusetts Early Childhood Linkage Initiative, unpublished data). These findings indicate the extent to which skull radiographs and skeletal surveys are necessary but clearly not sufficient to complete the clinical assessment of a young child who has been abused or neglected. The data also send a clear message that foster care placements for maltreated children without the inclusion of sophisticated developmental and behavioral services are seriously shortchanging many of the most vulnerable of our youngest children.

These study findings, in conjunction with the new federal requirement for linkage between the child welfare and early intervention systems, underscore the need to rethink traditional approaches to child protective services. The old way, for example, focuses largely on documenting bodily injury, assessing the risk of recurrent harm, and making decisions about legal custody in the service of assuring the child's physical safety. In contrast, contemporary neurobiology and social science tell us that child maltreatment should be evaluated and treated


Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

primarily as a health and development emergency in the context of a family relationship crisis, which requires sophisticated expertise in both early childhood and adult mental health. Thus, regularized referrals of suspected cases of abuse or neglect from the child welfare system to the early intervention system provide a promising step forward toward policies and practices that are grounded in state-of-the-art developmental knowledge. The absence of new funding to support the implementation of this new legislation, however, presents a formidable obstacle. The resolution of this dilemma is not simply a social service concern or a political problem. It is a core challenge to the practice of 21st-century developmental and behavioral pediatrics.

## SCIENCE POINTS TOWARD A MULTIPRONGED APPROACH TO HEALTH PROMOTION AND DISEASE PREVENTION

Universal access to prenatal care and primary health services assures the detection of threats to health that can benefit from early diagnosis and preventive intervention. Targeted services for children experiencing toxic stress is essential to reduce disruptions of the developing nervous and immune systems that can lead to lifelong problems in learning, behavior, and both physical and mental health. Science tells us that a combination of both is essential and that services for vulnerable, young children can have positive impacts on brain development that generate a significant return on investment over a lifetime. But, science also tells us that targeted interventions that work require the quality and sustainability that come from low staff turnover and well-trained personnel with expertise that matches the needs of the children and families they are asked to serve.

Finally, if we really want to promote better health and developmental outcomes for all children, then we must apply the science of early childhood and early brain development to a much broader range of policies that affect the causes and consequences of toxic stress. Beyond the needs of children involved in the child welfare system, this includes those who live in families receiving public assistance (particularly where mothers are facing time limits for support), as well as children whose parents are enrolled in substance abuse and/or mental health programs or are homeless. The need for a stronger child-focused lens in these disparate domains of contemporary social policy is essential to the promotion of child health. The responsibility to influence such policies is fundamental to the effective practice of pediatrics and critical to the evolving professional identity of developmental and behavioral pediatricians.[8,9]

## PERSISTENT CHALLENGES FACING DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS

The rich and rapidly growing science of human health and development points toward 3 core challenges for developmental and behavioral pediatricians.

### Closing the Gap Between What We Know and What We Do by Rethinking the Balance Between Individual and Shared Responsibility for Child Well-being

There is a compelling need to address the striking paradox of a strong and expanding science base yet persistently inadequate and ineffective societal investments in the healthy development of children and their families, particularly for those who are the most vulnerable. This indefensible gap calls out for new, bipartisan strategies to build broad-based public will that recognizes the complementary (not mutually exclusive) responsibilities of family, community, school, workplace, and government to promote the health and development of all children. As the one profession that is (or should be) involved in the life of every young child and his or her family, pediatrics should be at the forefront of that campaign, and developmental and behavioral pediatricians should be positioned prominently at the helm.

### Searching for New Partners and a More Powerful Message

There is a clear imperative for pediatricians to build creative, new alliances with a broader array of leaders in both the public and private sectors. Beyond the need for fresh messengers, however, there is also a need for more effective messages to create a greater sense of urgency about the imperative of reducing significant inequalities in health and development, beginning in the earliest years of life. The well-being of young children is not only a compelling moral responsibility. It also benefits all of society by providing a solid foundation for responsible citizenship, economic productivity, strong communities, sustainable democracy, and future prosperity.

### Expanding the Boundaries of Developmental and Behavioral Pediatrics Beyond the Clinical Setting

The challenge is clear, and the stakes are high. The number of children whose lives are threatened by social and economic adversity is unacceptably large, and the knowledge that could be used to promote their healthy development is exploding. The time has come to broaden and deepen the scientific foundations of developmental and behavioral pediatrics and to enlarge its field of active engagement. Central to this task is the need for stronger impact in the public policy arena that is grounded in science and avoids ideological advocacy. The maturing discipline of developmental and behavioral pediatrics can best address this critical opportunity by establishing a unique niche as a trusted knowledge broker at the interface of science, policy, and practice.[10]



Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

No other group is positioned to play a comparable role. No other group could have as much influence.

## REFERENCES


1. Shonkoff JP, Phillips DA, eds; Committee on Integrating the Science of Early Childhood Development, Board on Children, Youth, and Families. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academy Press; 2000
2. Richmond J. Child development: a basic science for pediatrics. *Pediatrics*. 1967;39:649–658
3. Shonkoff J, Green M. Child development: a basic science for pediatrics. *Pediatrics*. 1998;102(suppl):243–245
4. National Scientific Council on the Developing Child. Young children develop in an environment of relationships. Working Paper No. 1. Available at: www.developingchild.net/reports.shtml. Accessed September 15, 2006
5. National Scientific Council on the Developing Child. Children's emotional development is built into the architecture of their brain. Working Paper No. 2. Available at: www.developingchild.net/reports.shtml. Accessed September 15, 2006
6. National Scientific Council on the Developing Child. Excessive stress disrupts the architecture of the developing brain. Working Paper No. 3. Available at: www.developingchild.net/reports.shtml. Accessed September 15, 2006
7. Knudsen E, Heckman J, Cameron J, Shonkoff J. Economic, neurobiological, and behavioral perspectives on building America's future workforce. *Proc Natl Acad Sci U S A*. 2006;103:10155–10162
8. Shonkoff J. Reflections on an emerging academic discipline: the prolonged gestation of developmental and behavioral pediatrics. *J Dev Behav Pediatr*. 1993;14:409–412
9. Shonkoff J. From neurons to neighborhoods: old and new challenges for developmental and behavioral pediatrics. *J Dev Behav Pediatr*. 2003;24:70–76
10. Shonkoff J. Science, policy, and practice: three cultures in search of a shared mission. *Child Dev*. 2000;71:181–187


### BELIEVABILITY OF RELATIVE RISKS AND ODDS RATIOS IN ABSTRACTS: CROSS SECTIONAL STUDY

"**Objective:** To compare the distribution of P values in abstracts of randomized controlled trials with that in observational studies, and to check P values between 0.04 and 0.06.

**Design:** Cross sectional study of all 260 abstracts in PubMed of articles published in 2003 that contained 'relative risk' or 'odds ratio' and reported results from a randomized trial, and random samples of 130 abstracts from cohort studies and 130 from case-control studies. P values were noted or calculated if unreported.

**Main outcome measures:** Prevalence of significant P values in abstracts and distribution of P values between 0.04 and 0.06.

**Results:** The first result in the abstract was statistically significant in 70% of the trials, 84% of cohort studies, and 84% of case-control studies. Although many of these results were derived from subgroup or secondary analyses, or biased selection of results, they were presented without reservations in 98% of the trials. P values were more extreme in observational studies ($P<0.001$) and in cohort studies than in case-control studies ($P=0.04$). The distribution of P values around $P=0.05$ was extremely skewed. Only five trials had $0.05 \leq P 0.06$, whereas 29 trials had $0.04<P<0.05$. I could check the calculations for 27 of these trials. One of four non-significant results was significant. Four of the 23 significant results were wrong, five were doubtful, and four could be discussed. Nine cohort studies and eight case-control studies reported P values between 0.04 and 0.06, but in all 17 cases $P<0.05$. Because the analyses had been adjusted for confounders, these results could not be checked.

**Conclusions:** Significant results in abstracts are common but should generally be disbelieved."

**Gøtzsche PC. *BMJ*. July 19, 2006**
Noted by JFL, MD


Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

**A Promising Opportunity for Developmental and Behavioral Pediatrics at the Interface of Neuroscience, Psychology, and Social Policy: Remarks on Receiving the 2005 C. Anderson Aldrich Award**

Jack P. Shonkoff

*Pediatrics* 2006;118;2187-2191
DOI: 10.1542/peds.2006-1728

**This information is current as of November 4, 2006**

| | |
|---|---|
| **Updated Information & Services** | including high-resolution figures, can be found at: http://www.pediatrics.org/cgi/content/full/118/5/2187 |
| **References** | This article cites 6 articles, 3 of which you can access for free at: http://www.pediatrics.org/cgi/content/full/118/5/2187#BIBL |
| **Subspecialty Collections** | This article, along with others on similar topics, appears in the following collection(s): **Neurology & Psychiatry** http://www.pediatrics.org/cgi/collection/neurology_and_psychiatry |
| **Permissions & Licensing** | Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.pediatrics.org/misc/Permissions.shtml |
| **Reprints** | Information about ordering reprints can be found online: http://www.pediatrics.org/misc/reprints.shtml |

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Downloaded from www.pediatrics.org by Jack Shonkoff on November 4, 2006

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 1
## Sunday, September 30, 1:45 pm - 3:15 pm

---

## Continuing the Conversation about the New Direction for Developmental and Behavioral Pediatrics

*Jack P. Shonkoff, MD*
*Chair: Nancy Lanphear, MD*

**Narragansett Ballroom A**

*This will be a time for further discussion with Dr Shonkoff on the topics and provocative ideas he presents as part of his keynote address. It will be an informal interchange of ideas and discussion and hopefully will raise awareness and challenge the attendee to consider next steps and alternative strategies.*

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 2

## Sunday, September 30, 1:45 pm - 3:15 pm

---

## Sleep and Daytime Functioning in Adolescents

*Judith A. Owens, MD, Providence, RI, Mary A. Carskadon, PhD, East Providence, RI, Amy Wolfson, PhD, Worcester, MA*

**Narragansett Ballroom B**

*Handouts to be provided by speakers during the session.*

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 3

## Sunday, September 30, 1:45 pm - 3:15 pm

---

## Dyslexia: Emerging Knowledge of Etiology, Clinical Expression and Diagnosis

*Joseph J. Hallett, MD, Pawtucket, RI, Anjali Palav, PhD, Pawtucket, RI*

**Narragansett Ballroom C**

*Handouts to be provided by speakers during the session.*

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 4

## Sunday, September 30, 3:30 pm - 5:00 pm

---

## Medical-Legal Partnerships for Developmental and Behavioral Pediatrics

*Douglas Vanderbilt, MD, Division of Developmental and Behavioral Pediatrics, Pamela Tames, Esq., The Medical-Legal Partnership for Children, Betsy McAlister-Groves, LICSW, Child Witness to Violence Project, Kari Hironaka, MD, Division of Developmental and Behavioral Pediatrics, Boston, MA*

**Narragansett Ballroom A**

## Medical-Legal Partnerships for Developmental-Behavioral Pediatrics: The Building Bridges Project

Douglas Vanderbilt, MD
Pamela Tames, JD
Kari Hironaka, MD

SDBP Annual Meeting September 2007

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Workshop Objectives

1. Review the social factors that contribute to poor health and barriers to learning
2. Learn how doctors work with lawyers to address these social factors
3. Learn how one medical-legal partnership works with three urban schools to address barriers to learning
4. Consider what you can do in collaboration with lawyers and schools

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Agenda

1. Social risks to health and learning
2. Medical-legal collaboration
3. School partnerships and case studies
4. Lessons learned

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

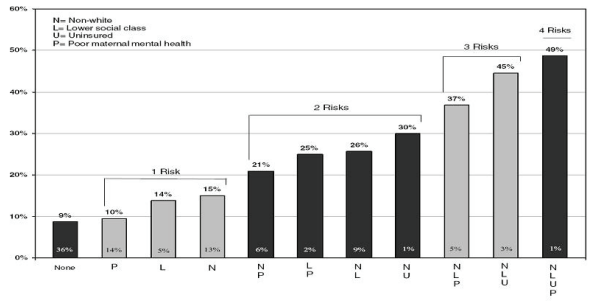
## Social Risks to Health

- National Survey of Early Childhood Health
- 3.1 million young children (1/3) in US have 2 or more risk factors for poor health
  - Ethnicity
  - Lower social class
  - Lack of health insurance
  - Poor maternal mental health

Stevens, G. Maternal and Child Health Journal 10(2):187-99. March 2006

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

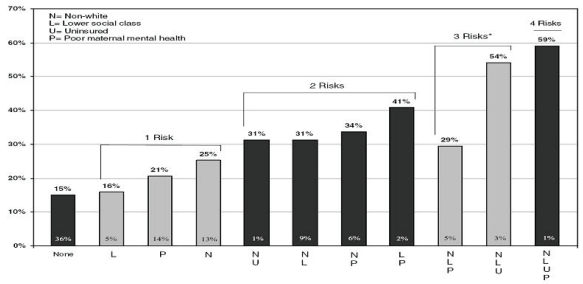
## Poor Health Status




Stevens, G. Maternal and Child Health Journal 10(2):187-99. March 2006

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Risk of Developmental Delay




Stevens, G. Maternal and Child Health Journal 10(2):187-99. March 2006

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

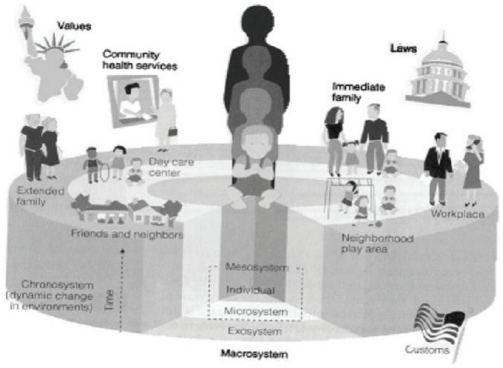
## Health and School Readiness

- Health problems can affect a child's school readiness both directly
  - behavior and cognitive abilities
- and indirectly
  - crowding out beneficial activities
  - changing the way the family treats a child

Currie, J. *Future of Children. 15(1):117-38, 2005*

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Context of Students in Schools




The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Social Risks to Learning

*I. Barriers to Development and Learning* (Risk producing conditions)

| *Neighborhood* | *Family* | *School and Peers* | *Individual* |
|---|---|---|---|
| >extreme economic deprivation<br>>community disorganization, including high levels of mobility<br>>violence, drugs, etc.<br>>minority and/or immigrant status | >chronic poverty<br>>conflict/disruptions/violence<br>>substance abuse<br>>models problem behavior<br>>abusive caretaking<br>>inadequate provision for quality child care | >poor quality school<br>>negative encounters with teachers<br>>negative encounters with peers &/or inappropriate peer models | >medical problems<br>>low birth weight/ neurodevelopmental delay<br>>psychophysiological problems<br>>difficult temperament & adjustment problems |

Adelman, H. and Taylor, L. Center for Mental Health in Schools, UCLA. September 2003

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Protective Factors

*ii. Protective Buffers* (Conditions that prevent or counter risk producing conditions – strengths, assets, corrective interventions, coping mechanisms, special assistance and accommodations)

| *Neighborhood* | *Family* | *School and Peers* | *Individual* |
|---|---|---|---|
| >strong economic conditions/ emerging economic opportunities<br>>safe and stable communities<br>>available & accessible services<br>>strong bond with positive other(s)<br>>appropriate expectations and standards<br>>opportunities to successfully participate, contribute, and be recognized | >adequate financial resources<br>>nurturing supportive family members who are positive models<br>>safe and stable (organized and predictable) home environment<br>>family literacy<br>>provision of high quality child care<br>>secure attachments – early and ongoing | >success at school<br>>positive relationships with one or more teachers<br>>positive relationships with peers and appropriate peer models<br>>strong bond with positive other(s) | >higher cognitive functioning<br>>psychophysiological health<br>>easy temperament, outgoing personality, and positive behavior<br>>strong abilities for involvement and problem solving<br>>sense of purpose and future<br>>gender (girls less apt to develop certain problems) |

Adelman, H. and Taylor, L. Center for Mental Health in Schools, UCLA. September 2003

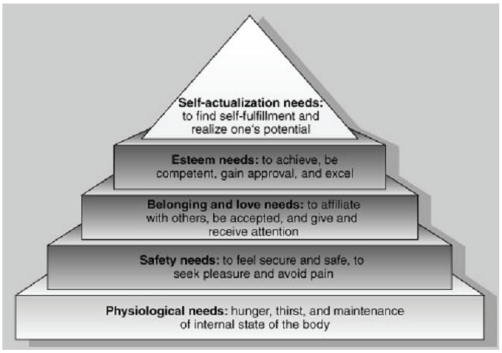
The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## School Mental Health

- Psychiatric disorders
- Psychosocial problems
- Positive Mental Health
  - Promotion of social and emotional development

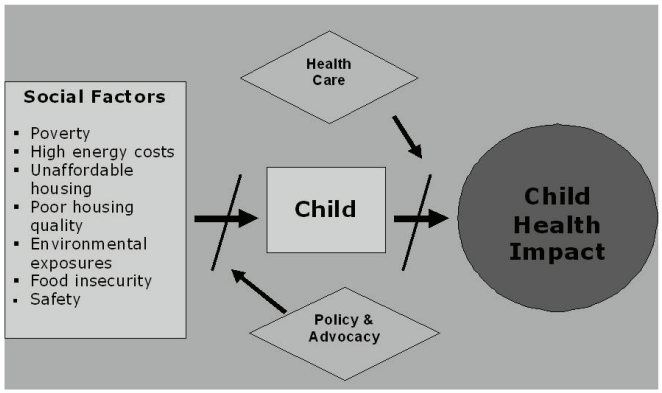
The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Maslow's Hierarchy of Needs




The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Disrupting the Link between Social Factors and Poor Health




## Case Study - 1

- 11 yr old boy w/recurring asthma attacks despite family's compliance w/ appropriate medication and asthma action plan.
- Missed school repeatedly - at risk of failing.
- Landlord neglected pest control.
- Specialist helped PCP write letter to landlord citing sanitary code violations and demanding immediate measures.
- Within 6 weeks, boy was weaned from steroids and was back in school regularly.

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Case Study - 2

- A grandmother is caregiver of 12-year old girl who was showing symptoms of depression.
- When asked about girl's low weight, gm reported that her food budget was limited, and that recently girl refused to eat unless there was enough food for both of them.
- PCP referred family to a specialist who helped them access food stamps.
- Next time PCP saw patient, her weight was healthier and her mood seemed much better.

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Medical-Legal Partnership for Children

- By combining the health care expertise of health care professionals with the legal expertise of attorneys, a comprehensive set of services can be provided to address the multiple determinants of children's health and wellbeing.

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Why Legal Advocacy in the Clinical Setting?

- Pediatricians and other health care providers are trusted, credible resources for families
- Screening for legal issues in the clinical setting facilitates **preventive law**

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## What Do MLPC Lawyers Do?

- Infuse a culture of advocacy in pediatrics through **education, training and technical assistance**
- Provide **direct services** to families in consultation with pediatric providers
- Address **systemic obstacles** that adversely affect low-income family health and stability in partnership with pediatricians

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## The Scope of Unmet Legal Needs

| State | Year | Avg. # Legal Needs in Prior Year |
|---|---|---|
| OR | 2000 | 3.2 |
| VT | 2001 | 1.1 |
| WA | 2003 | 2.9 |
| MA | 2003 | 2.4 |
| TN | 2004 | 3.3 |
| IL | 2005 | 1.7 |

- Poor families have significant unmet legal needs
- Most legal needs go unaddressed
  - Study identified large gaps between legal needs & receipt of help for those needs
- Legal help for poor families is limited
  - Publicly funded legal aid turns away more than 50% of cases due to lack of resources

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

Source: Legal Services Corporation, *Documenting the Justice Gap in America*, 2005

## What Do MLPC Pediatricians Do?

- Screen and prioritize basic unmet needs
- Consult with MLPC . . .
  - when quick consultation can get things in motion
  - about complex issues to consider referral to a lawyer
- Encourage and help families seek supports and resources and to advocate
- Work with lawyers to provide direct advocacy to families

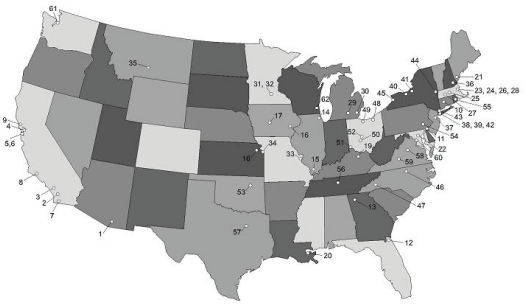
The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Why Don't Social Workers Handle these Issues?

- Social workers are familiar with programs and services, but are not trained to appeal a denial of services or advise families about complex rights
- Lawyers are trained to recognize rights violations and have the tools to address them
- Lawyers support and augment work of the treatment team

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

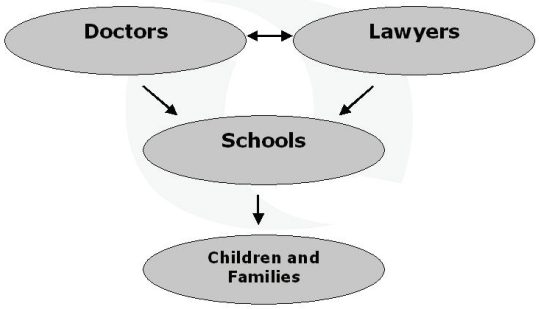
The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH



Medical-Legal Partnerships - **May 2007**

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## MLPC Extension to Schools - Building Bridges -




The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Traditional Role of Lawyers

- Family referred to lawyer after child with special needs is failed by or excluded from school
- Lawyer enforces legal mandates
  - Special education (Individuals with Disabilities Education Act (IDEA))
  - Reasonable accommodations (Section 504 of the Rehabilitation Act)
- Lawyer serves as zealous advocate for child / family and adversary of school

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Unintended Consequences

- Educators in urban settings work with many students confronting multiple risk factors that impact classroom experience
  - Poverty
  - Hunger
  - Inadequate housing or homelessness
  - Immigrant status
  - Family stability or safety
- Urban schools often lack support, resources and expertise to help children with special needs
- Traditional role results in
  - Missed opportunities for student
  - Adversarial relationship between parent and school
  - School forced to spread limited resources even thinner

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Building Bridges - Paradigm Shift

- Lawyer and paralegal team with pediatrician, mental health clinician and school
  - resources and consultation to school staff
  - advocacy for basic needs to families
  - seminars / events for parents
- Goal: Support schools in their service of children and engage families in schools

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Goals

- Help schools identify / address child health and social issues
- Increase parent engagement and student learning
- Identify and address systems barriers to clinical and behavioral health service access

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Strategy

- Pediatrician participates on student support team, with consultation by mental health clinician and lawyer
- Paralegal hosts school-based legal clinic
- Facilitates events / seminars for families
- School and community outreach to inform school and parents about community agencies

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Structure

- Our Team
  - MLPC lawyer and paralegal
  - DB pediatrician and fellows
  - Mental health clinicians
- Our Partners
  - 3 Boston elementary schools

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Student Support Team

- SST – Multidisciplinary group
  - Educators
  - School Nurses
  - School counselors/therapists
- Objective to discuss students who are struggling, but structure and format of SSTs varies
- Fellow participation on SSTs, weekly or bi-weekly

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Josh

- 7 yr old male in the 2nd grade
  - Academically, with above average math and listening comprehensions skills
  - Cannot read, spell, or demonstrate phonemic awareness
  - No special education services
- Student Support Team Discussion:
  - Special education evaluation vs.
  - Demotion to 1st grade

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Josh

- Outcomes:
  - Reviewed educational literature regarding retention and reading programs
  - Decided demotion/retention likely poor strategy for Josh
  - Recommended special education evaluation
  - Provided info to Team regarding rights of parents to reject or accept proposal for grade retention

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Kevin

- 7 yr old child repeating 1st grade
  - Failing again
  - Good verbal and listening comprehension skills.
  - Difficulties with reading, phonemic awareness and math
  - Fidgety, inattentive, restless, impulsive
  - IEP: Reading resource room and OT
- On-going significant concerns regarding ADHD
  - Discussed concerns with mother on multiple occasions.
  - Had contacted PMD; provided ADHD rating scales
  - Finally, after almost a year of discussions with Kevin's mother, the school filed with Child Protective Services

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Kevin

- Student Support Team Plan:
  - Planned to meet with parents to discuss concerns and importance of PMD visit. Offered to take to PMD.
  - Re-contacted PMD; Provided new ADHD rating scales
  - Discussed possible referral to School Achievement Clinic
- Outcomes:
  - Saw PMD who referred to School Achievement Clinic
  - Dx'd ADHD started on stimulant
  - Increased SPED services for learning disabilities/dyslexia
  - Kevin is doing great!

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Darren

- 7 yr old in 2nd grade – with worsening behavioral problems and defiance
  - Family with known recent concern of DV with Child Protective Services involvement
  - Receives some school-based therapy
  - Receives special education services

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Darren

- SST with parent:
  - Mother initially defensive regarding behavior problems. Stated probs didn't exist at home. Child "knows better".
  - Reframing of behavioral problems as common reaction to witnessing violence.
- Outcomes:
  - Referral to Child Witness to Violence
  - Mother seen for intake appointment the next day

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Parent Engagement

- Parent seminars on health-related topics and health fair
- Legal clinics for parents on income, housing and utilities assistance
- Family events – literacy night, science fair

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Results

- Replicable model
- Valuable training for pediatric fellows
- Engaged hundreds of families
- Three years of funding from Brown Rudnick, a law firm with a foundation committed to urban education

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Endorsements by Schools

- "The program has helped our school RESPOND IN A MORE TIMELY WAY to concerns about students' learning and behavior.
- "The program has helped our school RESPOND MORE EFFECTIVELY to our students' learning and behavioral needs."
- "The program has helped our staff's ability to communicate with medical professionals about students' needs."
- "The program has improved our staff's ability to communicate with parents about their child's learning or behavior."

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Lessons Learned

- Identify potential legal and school partners
- Assess school readiness
  - Leadership
  - Systems
  - Resources
- Develop school and parent leadership relationships
- Be flexible – adapt to school's needs
- Tangible services / support vital

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Discussion

- What is audience's experiences with schools and legal field?
- What have they found to be successful at addressing these barriers in their community?
- How might one go about partnering?

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

## Resources

- **www.mlpforchildren.org**
- **www.smhp.psych.ucla.edu**
- **www.ericdigests.org/2002-3/full.htm**
- **aappolicy.aappublications.org/cgi/content/full/pediatrics;113/6/1839**

The Medical Legal Partnership for Children
RAISING THE BAR FOR CHILD HEALTH

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 5

## Sunday, September 30, 3:30 pm - 5:00 pm

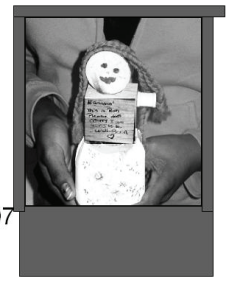
---

## Group Mentoring for Adolescents with Chronic Illness: Promoting positive attitudes towards illness

*Gary Maslow, MD, Wendy Froehlich, MD, The Adolescent Leadership Council of Hasbro Children, Providence, RI*

**Narragansett Ballroom B**

The Adolescent Leadership Council of Hasbro Children's Hospital (TALC)



September 30th, 2007

Gary Maslow, MD
Wendy Froehlich, MD
Triple Board Residents
(Brown University Medical School Departments of Pediatrics and Psychiatry, Division of Child and Adolescent Psychiatry)

# TALC brief description

- The Adolescent Leadership Council of Hasbro Children's Hospital
  - Started in September of 2005 based on program called STAR Mentors from Dartmouth Medical School
  - 12 teens with chronic illness including diabetes, cancer, SLE, sickle cell disease, IBD, etc.
  - 11 Brown University College students with chronic illness
  - TALC Goals
    1) **Social Support** - providing social support for adolescents with chronic medical conditions
    2) **Leadership** - providing a forum to discuss and improve the experience of being a child with a chronic illness cared for at Hasbro Children's Hospital.
  - Monthly meetings at Hasbro
  - Concurrent Parent Council

Supported by AAP Resident CATCH grant and the RI Dept. of Health

# Components of Chronic Illness

- Diagnosis
- Hospital and Doctors – Admission and doctors visits
- Going Home – Family, Friends, and School
- Moving On – Impact of Illness on Child
- What Next – Transitions to college, adult medical care and the future

# Diagnosis : Epidemiology of Chronic Illness in children

- Data from 1981 National Health Survey

  Prevalence – overall 8.9% of children had 1 of 19 conditions
  - 10% of males
  - 7.7% of females

- Conditions included – arthritis, asthma, blindness, cancer, cardiac, CP, CF, deafness, deformed body part, diabetes, epilepsy, gastrointestinal, hearing, missing body part, otrhopedic, paralysis, sickle cell anemia, vision

Gortmaker, SL, et al. "Chronic Conditions, Socioeconomic Risks and Behavioral Problems in Children and Adolescents." Pediatrics. 85(3): 267-276, March 1990.

## Diagnosis :
### Epidemiology of Chronic Illness in children

- Data from 1992-1994 NHIS

  6.5% of all children limited in daily activities related to chronic condition

  - 61% have chronic disease or injury versus
  - 39% had impairments like blindness or deafness or paralysis
  - Prevalence increases with age >5,
  - more common in boys, blacks, children below poverty line and single-parent family

Newacheck, PW, et al. "Prevalence and Impact of Disabling Chronic Conditions in Childhood." America Journal of Public Health. 88(4): 610-617. April 1998.

## Diagnosis :
### Epidemiology of Chronic Illness in children

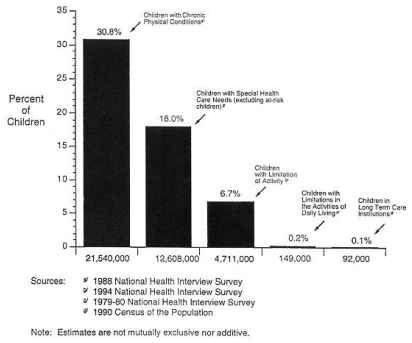
- Data from 1994 NHIS on Disability

  18% of children had chronic physical, developmental, behavioral or emotional condition.

  - 21% of children age 6-17 years had special health care needs
  - 11% of children with SHCN were uninsured,
  - 6% without source of regular care,
  - 13% had one or more unmet health needs in past year.

Newacheck, PW et al "An Epidemiological Profile of Children with Special Health Care Needs." Pediatrics 102(1), 117-123. July 1998.

## Diagnosis:
Chronic conditions, special needs, and disability for children <18




Newacheck, PW et al "An Epidemiological Profile of Children with Special Health Care Needs." Pediatrics 102(1), 120. July 1998.

## Diagnosis :
### Epidemiology of Chronic Illness in children

- Questions of definition-
  - Each survey uses similar, but different definitions
  - From the 1994 survey reported incidence of - chronic physical, developmental, behavioral or emotional condition.
  - What are the most prevalent physical conditions – (Newacheck 1992)

| | | |
|---|---|---|
| Allergies | - | 15% |
| Asthma | - | 4-10% |
| Migraine/severe headaches | - | 2.5% |
| Congenital Heart Disease | - | 1.5% |
| Rheumatological conditions | - | 0.9% |
| IBD | - | 0.9% |
| Anemia | - | 0.8% |
| Cancer | - | 0.3% |
| Epilepsy | - | 0.3% |
| Diabetes | - | 0.1% |
| Sickle Cell Disease | - | 0.1% |

## Diagnosis : Epidemiology of Chronic Illness in children

- For Teachers : Prevalence of encountering a student with …

| | | |
|---|---|---|
| Asthma | - | 96% |
| Diabetes | - | 67.9% |
| Epilepsy | - | 53% |
| Cancer | - | 24.6% |
| Cystic Fibrosis | - | 13.6% |
| IBD | - | 15.7% |
| Other | - | 11.4% |
| Rheumatological conditions | - | 9.9% |
| Immunodeficiency | - | 2.6% |
| Sickle Cell Disease | - | 1.1% |

## Diagnosis : Epidemiology of Chronic Illness in children

- Data from 2001 National Survey of Children with Special Health Care Needs (SHCN)
  - 12.8% of children with SHCN
  - 6-17 yo – 15% prevalence vs.
  - <6 with 7.8% prevalence
    - 18% had unmet health need

  van Dyck, PC, et al. "Prevalence and Characteristics of Children with Special Health Care Needs." Archives of Pediatric and Adolescent Medicine. 158: 884- 889. Sept 2004.

- Summary – Chronic illness
  - Is more common in older children, boys, and lower socioeconomic status
  - 9-30% of children have some form of chronic condition
  - 13%-18% have unmet health needs

## Diagnosis : Effect of Chronic Illness

- Parents
  - Family Financial Effects

    -2001 National Survey - van Dyck, PC, et al (2004)
    - 21% of families reported financial problems related to child's condition
    - 15% reported spending a large amount of time each week on care for child
    - 30% reported at least 1 family member reduced or stopped employment because of child's condition.
  - Parent Psychological Effects
    - FURTHER STUDY NEEDED
    - Increased distress at time of diagnosis
    - Longer-term studies over 5 years– "few emotional disturbances compared to healthy controls or normative data"
    - BUT – parents experience
      - Loneliness, uncertainty, PTSD symptoms, and fears.
      - Increases in marital distress (but probably not increased divorce)
    - Some positive aspects of experience
      - New values and attitudes, re-evaluation of goals, and increased family relationships.

- Barlow, JH & Ellard, DR. (2006) "Psychosocial well-being of children with chronic disease, their parents and siblings : An overview of the research evidence base." Child: Care, Health & Development 32(1): 19-31.

## Diagnosis : Effect of Chronic Illness

– Siblings - Sharpe, D & Rossiter, L. (2002) "Siblings of Children with Chronic Illness : A Meta-Analysis." Journal of Pediatric Psychology 27(8): 699-710.

- Negative effect on siblings in meta-analysis
- More internalizing behaviors than externalizing
- Effect size impacted more by features across disease category than by disease type– such as the amount of daily care needed for sibling.

## Diagnosis :

### Effect of Chronic Illness

- School
  - 1981 NHS
    - Gortmaker, SL, et al (1988)

    1992-1994 NHIS
    - Newacheck, PW et al (april 1998)
  - More likely to be in special ed OR 2.65
  - or Repeat grade – OR 1.38
  - 2.6 x as many days absent
- School Professionals Perceptions
  - Survey of 300 teachers about perception of 6 illnesses
    - AIDS, Asthma, Congenital Heart Disease, Diabetes, Epilepsy, Leukemia
  - Academic impact 37% overall – Epilepsy 41% and Diabetes 18%
  - Special attention in class – 20% overall
  - Personal risk/liability for teachers –
    - Concerned that emergency situation might arise – 54% overall
    - Concerned that child might die in classroom
      - 10% overall
      - 25% congenital Heart Disease

Olson, AL; et al. (2004) "School Professionals' Perceptions About the Impact of Chronic Illness in the Classroom." Archives of Pediatric and Adolescent Medicine 158: 53-58.

## Diagnosis :

### Effect of Chronic Illness

- Psychological impact
  - 1981 NHS - 11,699 children age 4-17
  - 1.5x more likely to have extreme behavior problems (top 10th %)
  - Risk similar to risk from poverty, male gender, and low maternal education

---

- "Depression and Diabetes"
- 2005 review - Children with diabetes 2-3x as likely to have depression.

Stewart, SM, et al. "Depression and Diabetes in Children and Adolescents." Current Opinion in Pediatrics 17:626-631. 2005.

---

- "Childhood Asthma, Chronic Illness, and Psychiatric Disorders."

2002 study 1,285 children and care-givers

- Children with asthma more likely to have anxiety, not at increased risk of depression
- Children with non-asthma chronic illness more likely to have affective disorders.

Ortega, AN, et al. "Chidhood Asthma, Chronic Illness and Psychiatric Disorders." The Journal of Nervous and Mental Disease. 190:275-281, 2002

## Diagnosis :

### Effect of Chronic Illness

- Physical Health
- 2001 study - 1 year in a PICU 251 unscheduled admission
  - children with chronic health conditions RR = 3.3 for unscheduled PICU admit
  - technology assisted pts RR = 373
  - non-techonology assisted RR = 2.3
  - 45% of 251 unscheduled admissions were related to chronic health condition
- Categories of illness – neurological (seizures, brain tumors), cardiac (Cardiomyopathy, CHD), respiratory (asthma, BPD)
  - "Excess Risk of Severe Acute Illness in Children with Chronic Health Conditions" Dosa, NP, et al. **Pediatrics 107(3): 499-504, March 2001.**

## Diagnosis :

### Effect of Chronic Illness

- Nonadherence – from 2005 Current Opinion in Pediatrics
- Nonadherence can lead to morbidity and mortality
  - Psychological barriers
  - Medication related barriers
  - Family barriers
- Recommendations
  - empower the adolescent with knowledge,
  - involve family,
  - provide individual and group support.
  - Put children in touch with other children with chronic illness to provide opportunites for modeling behavior,
  - Make adolescent part of treatment decisions
  - encourage them to exercise their own authority and independence as a member of the team. multidisciplinary.

Smith, BA, et al. (2005) "Problem of nonadherence in chronically ill adolescents: strategies for assessment and intervention". Current Opinion in Pediatrics 17:613-618.

## Diagnosis :

### Effect of Chronic Illness

- College students with chronic illness
  - Examined coping in college students with chronic illness
  - 32 college students with Chronic illness
  - 16 college students with primarily positive life events
  - 53 college students with primarily negative life events
  - Chronic illness group compared to primarily positive life events had more anxiety and trend towards more depression.
  - Active coping strategy and family support were somewhat protective.
  - Conclusion –
    "Development of adaptive coping should be focus of programs aimed at supporting students with chronic illness as they transition to college."

Wodka, EL & Barakat, LP. (2006) "An exploratory study of the relationship of family support and coping with adjustment: Implications for college students with chronic illness." Journal of Adolescence 1-10.

## Diagnosis :

### Effect of Chronic Illness

- Outcomes relevant to transition to adulthood

- Living situation
- Educational
- Vocational
- Social
- Access to health care
- Health

## Diagnosis :

### Effect of Chronic Illness

- Outcomes relevant to transition to adulthood
- 1989 study from England
- Followed children with chronic illness from 0-36 years old

- Living situation
  - less likely to own a home
- Educational
  - no difference in attainment
- Vocational – greater unemployment at 36
  - (risk factor = worse illness during 20-25)
  - For those whose illness was gone by adulthood, no increased unemployment
  - No difference in income
- Social
  - more likely to have had both parents die
  - No difference in friends visiting
- Access to health care – not examined
- Health
  - Higher death rate by age 36 for those with chronic illness - approximately double the risk.

## Diagnosis :

### Effect of Chronic Illness

- Outcomes relevant to transition to adulthood
- 1995 study from Finland - 487 19-25 yo with chronic illness

- Living situation
  - 43% lived with parents vs. 32% controls
  - Most social contacts within family vs. Outside family for controls
- Educational
  - Lower grades in school
  - Fewer finished school
- Vocational
  - 33% employed vs. 50% of controls
  - Similar income and type of work
  - 22% unemployed > 6 months (11% controls)
  - 12% on disability
- Social
  - Parents had higher divorce rates
  - 24% married vs. 46% controls
  - 24% had never had sex vs. 8% of controls
  - 33% could not mention a hobby vs. 20% of controls
  - For those with disability decreased social maturation
- Access to health care – universal health care in Finland

## Diagnosis :

Effect of Chronic Illness

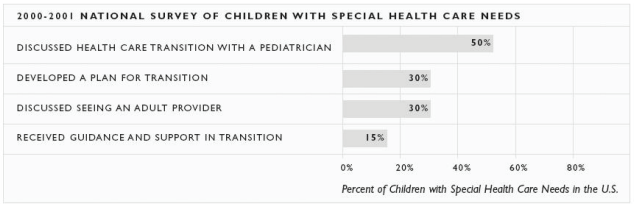
- Transition to Adult Medical Services - data from 2001 National Survey of Children with Special Health Care Needs
  - 500,000 youth with special health care needs turn 18 each year.
  - Survey of parents of children aged 13-17. (5,533 surveyed)
    - 50% had spoken to health care provider about changing needs of their child as they reached adulthood.
    - Of that 50% only 59% had discussed a transition plan (29%)
    - Of that 50% only 42% had discussed eventual transition to adult health care. (21% of those surveyed)
  - Only 15% had met Maternal and Child Health Bureau's core outcome for medical transitions.
  - Those with a medical home more likely to have transition plan had a two-fold increase odds of meeting criteria.
  - Medical transition and family-professional partnership part of Healthy people 2010 goals.

Lotstein, DS et al "Transition Planning for Youth with Special Health Care Needs: Results from the National Survey of Children with Special Health Care Needs." Pediatrics 115 (6) : 1562-1568

## Diagnosis :

Effect of Chronic Illness

Graph from Rhode Island Department of Health – Health Care Transition Policy Brief




## Diagnosis :

Effect of Chronic Illness

- Statement from Maternal and Child Health Bureau indicating Transition Priority

"Ensuring that youth with special health care needs receive the services necessary to transition to all aspects of adulthood, including from **pediatric to adult health care systems, from school to employment and independence."**

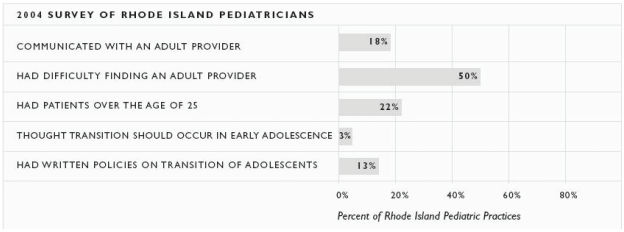
Lotstein, DS et al "Transition Planning for Youth with Special Health Care Needs: Results from the National Survey of Children with Special Health Care Needs." Pediatrics 115 (6) : 1562-1568

## Diagnosis :

Effect of Chronic Illness

- Rhode Island data
  - 2004 Survey of Rhode Island Pediatricians

BARRIERS TO HEALTH CARE TRANSITION PLANNING



## Diagnosis :

Effect of Chronic Illness

- Rhode Island data
  - 14% of Rhode Islanders age 15-20 have a disability
  - That is 11,084 out of 77,331
  - Data compared Adults with and Adults without disabilities
  - Those with disabilities LESS likely
    - To participate in leisure-time activities
    - To report feeling sufficient emotional support
    - To binge drink
    - To report satisfaction with life
  - Those with disabilities MORE likely to
    - To report feeling sad or depressed
    - To smoke
    - To get the flu vaccine
    - To have health insurance

## Diagnosis :

Intervention Reviews

- Psychosocial Interventions Reviewed
- 1997 Review – 15 out 266 studies meet strict inclusion criteria
  - 10/15 interventions worked
  - Included programs involving education support, reintegration into schools, and psychological treatments to improve self-esteem, self-worth, etc.
  - Conclusion – more rigorous research needed

Bauman, LJ, et al. "A Review of Psychosocial Interventions for Children With Chronic Health Conditions." Pediatrics. 100(2): 244-251, August 1997.

## Diagnosis :

Intervention Reviews

- Group Interventions
  - "Review of Group Interventions for Pediatric Chronic Conditions."
    - **Well-established** – Symptom reduction and adaptation/skill development groups
    - **Promising** – psychoeducational
    - **Not well supported-** summer camp and emotional support groups.
- 125 group treatments from literature
  - **emotional support**– improve psychological adaptation by providing contact and discussion with others in similar situations.
  - **psychoeducational**– enhance adjust by providing information and a discussion of social and psychological issus.
  - **adaptation/skill development -** skill focused
  - **symptom reduction groups** – ie teaching patients with CF to eat higher calorie diets, addressing discomfort around abdomen
  - **summer camps**

Plante, WA; Lobato, D; & Engel, R. (2001) "Review of Group Interventions for Pediatric Chronic Conditions." Journal of Pediatric Psychology. 26 (7): 435-453.

## TALC Background

Similar Programs

- Steps Toward Adult Responsibility (STAR)
  - Program at DHMC started 11 years ago
  - ***Mission Statement of the STAR Program:*** To promote the healthy psychological and social development for adolescents with chronic physical health conditions and facilitate the integration of these issues into the medical care plan
  - 4-5 dinner groups /year for teen, Dartmouth College student Mentors, and parents
  - Activities on Dartmouth Campus
  - Research and Education
- Youth Advisory Council (YAC) Denver Children's Hospital
  - Started 4 years ago at Denver Children's Hospital
  - "With the motto "We Make Things Happen", the council focuses on both inpatients and outpatients and allows for the children to have a voice around the hospital. "

## TALC Background
### CATCH Grant

- Application – Planning Grant from AAP – Community Advocacy
- Implementation -
  - Participant Recruitment – Referrals from Hasbro and community
  - Mentor Recruitment – Via Brown DSS
  - Program Evaluation – Pre-post semi-structured interviews
  - Dual Goals of TALC
    1) providing social support for adolescents with chronic medical conditions and
    2) providing a forum to discuss and improve the experience of being a child with a chronic illness cared for at Hasbro Children's Hospital.
- Group's goal – explore personal experience and reach out to others to try to improve experience of being a child with a chronic illness.

## TALC Activities

- Monthly Meetings – 2 hrs at Hasbro
  - Structure –
    - 20 min unstructured down time
    - 20 min large group discussion
    - 60 min small group discussion
    - 20 min large group discussion with homework assignment given
  - Topics discussed
    - Diagnosis
    - Hospital and Doctors – Admission and doctors visits
    - Going Home – Family, Friends, and School
    - Moving On – Impact of Illness
    - What Next –Transitions and the Future
  - Parallel parent group discuss same topics

## TALC Background

Monthly Meetings

Individual Creative Projects

- Writing – articles for the newsletter
- Photography – family documentation project
- Drawing – Draw Your Illness

Group Activities

- Produced Newsletter
- Ropes Course as a group
- Rock Climbing program with 10-14 year olds
- Presentations at local high schools
- Presented at Pediatric Grand Rounds

## TALC Activities

- Ropes course

INSULIN PUMP

Climbing Gym

## TALC Background
### Population

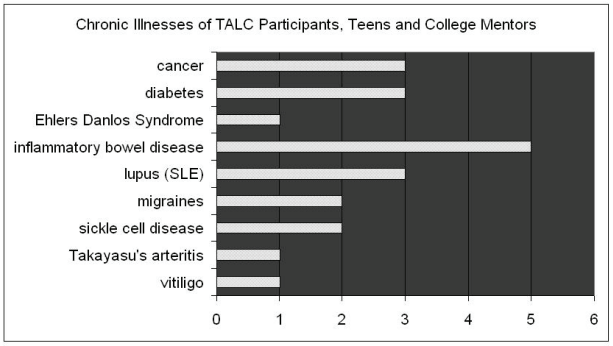
*Population*

Brown University student mentors (age 18-22 years)
- 2 seniors, 1 junior, 8 sophomores
- Six different conditions

Teens with chronic illness (age 15-19 years)
- 6 seniors, 4 juniors, 1 sophomore
- Six different conditions

Parents participating in Parent Council
- 3 sets of parents participated in the monthly parent council meetings.

## TALC Background
### Population




## TALC Background
### Population

*Population*

- Isolation – 7/11 knew only 1 or <1 other kids with a chronic illness.
- Attendance - 7/11 only missed 1 meeting,
- Drop-outs—4/11 did not participate fully
  - 1/11 did intake but did not participate,
  - 2/11 dropped out due to work requirements,
  - 1/11 dropped out due to transportation problems.
- Ethnicity— 63% Caucasian, 25% from Africa, 12% African American
- Communities— 37% from urban Providence, 63% from suburban towns.

## Parent Support Groups

- Chronic illness affects the *entire family*, not just the patient.
- Based off the idea that parents, as well as professionals, have a great deal to offer and teach each other

  (often independent of children's particular condition and health status)

## Parent Support Groups

- Research: Young, McMenamy, Perrin. *Parent Advisory Groups in Pediatric Practices: Parents' and Professionals' Perceptions. Arch Pediatr adolesc Med/ Vol 155, June 2001*
  - Parent support groups have been found to be beneficial in several areas including:
    - Helping parents feel less isolated
    - Making contact with other similar families
    - Helping parents to become involved in and improve care provided at pediatricians' offices
    - Distributing/receiving information about community resources

## Parent Support Groups

- Research: Ireys, Chernoff, DeVei, and Kim. *Maternal Outcomes of a Randomized Controlled Trial of Community-Based Support Program for Families of Children with Chronic Illness . Arch Pediatr adolesc Med/ Vol 155, June 2001; 771-777.*
- Mothers with children with chronic illness paired with mothers with older children of similar chronic illnesses
- 15 month intervention consisting of telephone contact, face-to-face visits, and special family events
- Over the 15 months, anxiety symptoms DECREASED in the mothers involved in the program
- In the control group, anxiety symptoms INCREASED.

## Parent Support Groups

- TALC Parent Council
- Comprised of parents/guardians of teens participating in TALC
- Meets monthly in concurrence with TALC meetings
- Provides structured group discussions focused on same monthly topics as TALC (Diagnosis, Hospital and Doctors, Going Home, Moving On, What Next –)

## Effects of the Parent Council

- All parents who participated reported TALC was beneficial to themselves and would recommend the program to others
- All teens whose parents participated in the parent council reported that TALC was beneficial to their parents whereas only half of the teens whose parents did not participate reported TALC was beneficial to their parents.

## Research

Data from 2005 – 2006

- 7 teens who participated fully
- 11 Brown student mentors
- 8 parents
  - (5 of whom participated in the parent council)

## TALC Evaluation 2005-2006

Pre and post semi-structured interviews:
- Experience of diagnosis and living with a chronic illness
- Manner in which family relationships have been impacted by illness
- Hopes and worries for the future
- Connection to friends and degree of isolation

Exit Program Evaluation Questionnaires:
- Specific benefits of the program
- Areas for improvement
- Recommendations

## TALC Outcomes

Qualitative Data obtained from teens

1) Increase number of children with chronic illness known
2) Improved relationship with parents
3) More positive overall attitude towards illness
4) No negative changes were identified by participants or from data
5) Brown students reported that they learned about their illness and had an improved attitude towards their illness through participation in TALC

Exit Questionnaire Data

1) 100% of all participants believed they benefited from program
2) 66% of teens believed that their parents benefited from program
3) 24/24 (brown students, parents, and teens) said that program was beneficial to them and that they would recommend it to others

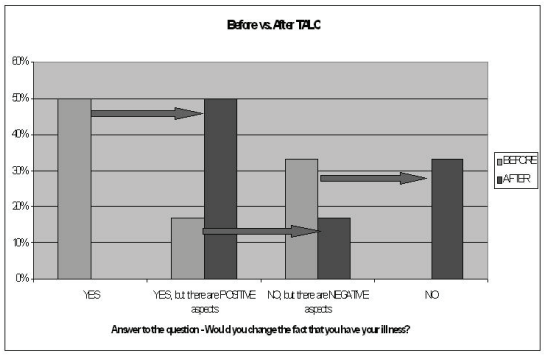
## TALC Outcomes

Exit Questionnaire Data

1) 100% of all participants believed they benefited from program
2) 66% of teens believed that their parents benefited from program
3) 24/24 (brown students, parents, and teens) said that program was beneficial to them and that they would recommend it to others

TALC Results

If you could change the fact that you had your illness, would you?




## Ongoing Research

Hypotheses:

- Participation in TALC improves teen participants' attitudes toward and acceptance of their illnesses.

2. Participation in TALC decreases isolation.

3. Participation in TALC improves family relations.

TALC Future Research

Measures

- Semi-structured Interviews *Everyone*
- Draw your illness *Teens and Brown Mentors*
- Child Attitude Toward Illness Scale (CATIS) *Teens and Brown Students*
- Nowicki-Strickland Locus of Control *Everyone*
- UCLA Loneliness Scale *Everyone*
- Behavioral Assessment System Questionnaire (BASQ) *Parents*
- Physician Questionnaire

## Future Research

- Future – Survey of brown students registered at DSS
- Other things to assess, but not sure how to study – self advocacy, adaptation, adherence, readiness for transition

## TALC Recruitment

- Criteria for teens to be referred to TALC
- Age 13-19 years old
- Usually in High School, not college
- Have a chronic medical illness
- Able to participate in monthly 2 hour meetings

- Functional illnesses like irritable bowel syndrome and conditions such as eating disorders are excluded.
- Teens with comorbid psychiatric illnesses are eligible to participate, but should be receiving some or seeking some form of mental health care.

## TALC Topics

### Diagnosis

- Show and Tell – Each person brought an object to represent their illness
- Ruth brought this doll to represent Takayusu's arteritis

Sculpture Ruth made representing her illness, Takayasu's Arteritis, her left arm is pulseless

## TALC Topics

### Admission: Doctors and Hospitals

- "Health Care Preferences and Priorities of Adolescents with Chronic Illness" survey of 155 adolescents 11-19 with JRA, SCD, IBD, or CF for at least two years – ranked important aspects of health care
  - physician trust and respect were first
  - followed by caring and closeness in the patient-doctor relationship.
  - Regarding communication – preferred to be spoken to directly, not through parents.
  - "participants rated aspects of interpersonal care especially honesty, attention to pain, and respect as most important in their judgments of quality." Also valued technical expertise

Britto, MT, et al. "Health Care Preferences and Priorities of Adolescents with Chronic Illness" Pediatrics 114(5): 1272- 1280, November 2004.

- TALC discussions were similar – as a group developed
  - Top Ten Suggestions for Doctors
  - Strategies for Teens

## TALC Topics

### Admission: Doctors and Hospitals

**Strategies for teens**
How to be a successful adolescent patient in the hospital

1 **EXPLAIN** – Explain what you are thinking clearly and confidently.

2 **SPEAK UP** - Be assertive, speak up!

3 **ASK** - Ask questions (make a list).

4 **RESPECT** - Talk softly, respectively, everybody will hear you better.

5 **PRIORITIES** - Pick your battles and know your priorities.

6 **KNOW YOUR BODY**- Be comfortable with your symptoms and with your doctors.

**Top Ten Strategies**
For doctors to keep in mind when talking to adolescent patients

**10** - Don't underestimate or sugar-coat
**9** - Talk to patient
**8** - Use a pain scale
**7** – Have a common understanding among the medical team
**6** – Use humor when appropriate
**5** – Trust the patient
**4** - Give clear explanations and warnings
**3** – Establish a comfortable environment
**2** – Use eye contact and touch

.....

**1 - LISTEN !**

## TALC Topics

### Going Home: Family, Friends and School

- Prior to meeting about family, teens given homework assignment
- Kim Alexander, TALC group leader and photographer – Prior experience at Youth Document Durham giving cameras to kids
- Each teen and mentor got a camera over Thanksgiving to document their family and family's relationship to illness
- During meeting had mixed groups of parents and teens and used photographs as starting point of discussion
- Another meeting siblings invited

"This is a broken down barn that my aunt compared (kindly) to my insides."

"'Why are you walking like that?'
Having to tell my father I am in pain."

"It's easier not to tell them"

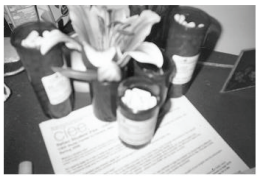
## TALC Topics
Moving on

- A topic that ran throughout each meeting was the relationship of each member to their illness.
- The group discussed the question –
  - If you could take a pill that would make it so you had never had your illness, would you?
- Individuals relationship to illness came through in their photography as well

Personal relationship to Illness

This is also what living with a chronic illness is like. Although the plant is not necessarily in ideal conditions, it is still green and thriving.

Trying to battle a migraine and writing a paper for school. You learn how to balance it all. For me it's taking breaks, putting my head down and taking a deep breath.



This is how my diseases mixes into my life: My medicine bottles when used become great containers

Needles: My new best friend.

## TALC Topics
Transition

- Health care transitioning -
  - From 2001 National Survey of Children With Special Health Care Needs
  - 50% of parents/guardians reported discussed transition with their doctors
  - Of those discussing 59% had a plan to address those needs
  - 42% had discussed transitioning to an adult-oriented care provider

  Lotstein, DS, et al. "Transition Planning for Youth With Special Health Care Needs: Results From the National Survey of Children with Special Health Care Needs." Pediatrics 115(6) 1562-1568, June, 2005.
- Transition to college
  - During meeting devoted to transitions mentors shared their experiences of going to college.
  - Important issues included – who to tell and how to tell them
  - Learning to take care of yourself
  - Access to college disability services
  - Transition to adult medical services

## TALC Future
At Brown and beyond

2006-2007

1) 14 teens and 10 Brown student mentors

2) 10 parents participating

3) Outreach to 3-4 local schools

4) 1 Newsletter, several special activities planned
Ropes Course, Climbing gym, Halloween Party

5) continue conversation with DOH on transition issues

6) 4 Brown students have put together a Group Independent Study Project for Spring Semester to study TALC and spread to other universities/medical centers.

2006 Awards/Presentations

Anne E. Dyson Resident Advocacy Award (AAP)

Poster presentation at 2006 AACAP conference.

## Rhode Island and Transition

- Overall transition messages
  - Transition is important and complex

  Individual level
  - Planning is important
  - Start talking with teens early (AAP says by age 14)
  - Systemic change is needed to facilitate the transition from pediatric to adult medical practices

  System level
  - Ensure health insurance is available through the transition
  - Education of physicians, patients, and families needed, especially given the loss of such a long term close relationship and the fear of the unknown
  - Portable medical information important

## Diagnosis :

Effect of Chronic Illness

- Outcomes relevant to transition to adulthood
- Are also areas for intervention during transition

- Living situation
- Educational
- Vocational
- Social
- Access to health care
- Health

TALC Website

www.hasbro-brown-talc.org

TALC WIKI

talc.editme.com/

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 6

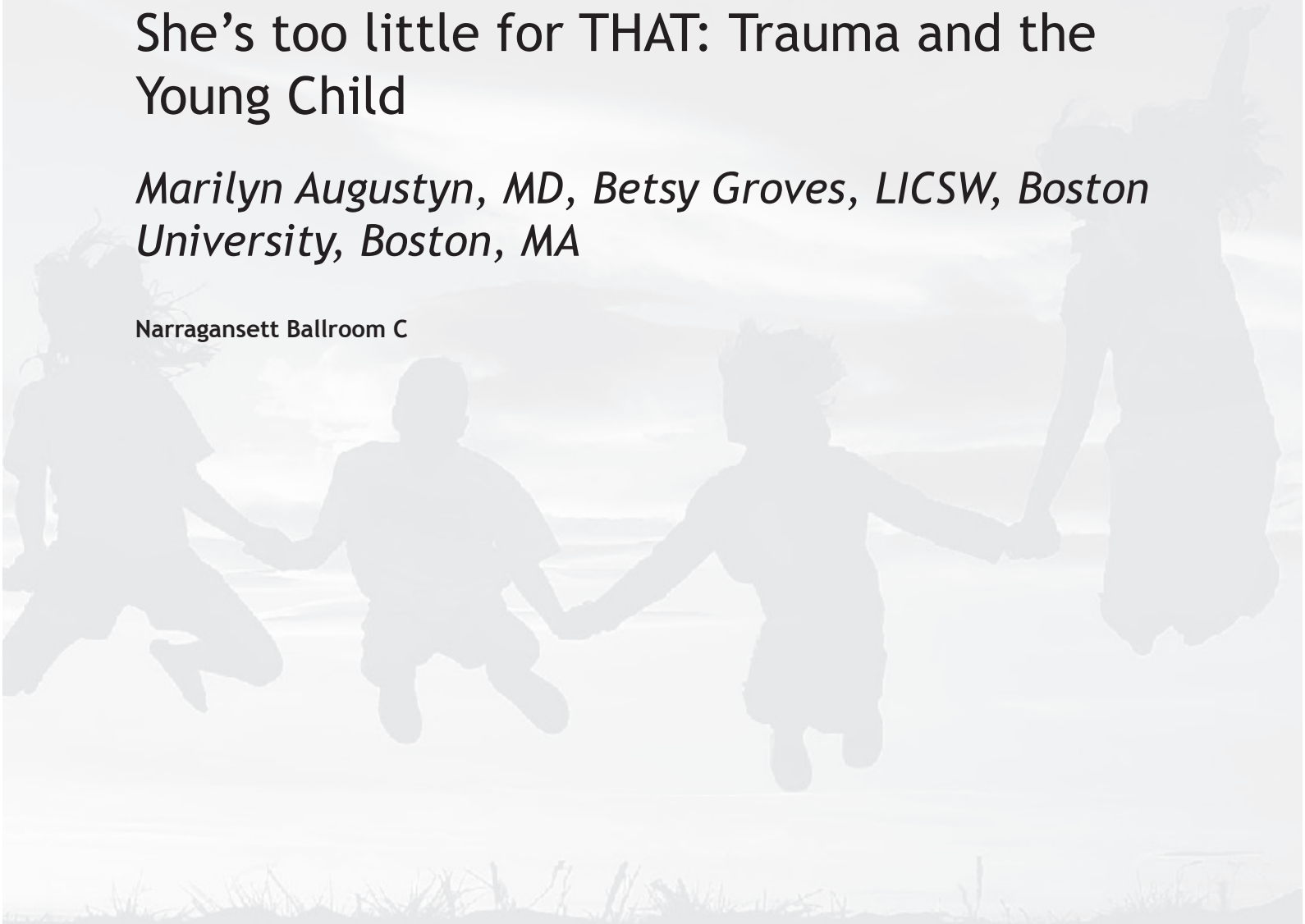
## Sunday, September 30, 3:30 pm - 5:00 pm

---

## She's too little for THAT: Trauma and the Young Child

*Marilyn Augustyn, MD, Betsy Groves, LICSW, Boston University, Boston, MA*

**Narragansett Ballroom C**



## "She's too little for THAT": Trauma and the Young Child

## Overview

- Epidemiology of Children's Exposure to Trauma
- Developmental Impact of Trauma
- Diagnostic classifications
- Screening for Children's Traumatic Exposures
- Treatment Options
- Case

## Epidemiology

## Violence:

the intentional use of physical force against another person or against oneself, which results in or has a high likelihood of resulting in injury or death.

## Trauma:

- An extreme stressor involving direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate (DSM IV)
- overwhelming, uncontrollable experience that psychologically impacts victim by creating in them feelings of helplessness, vulnerability, loss of safety and control

## Firearm Violence

- Gun-related violence takes the life of an American child at least every three hours and the lives of at least 25 children -- the equivalent of a classroomful -- every three days.
- Firearms were the fifth leading cause of injury death for children ages one to nine in 1998, following motor vehicle traffic-related deaths, suffocation, drowning, and fire- and burn-related deaths.

## Community Violence

- In one Chicago public housing project all of the children had witnessed a shooting by the age of five
- One study comparing urban elementary school children living in low-violence neighborhoods to those living in high-violence neighborhoods found that over 75 percent of those in high-violence neighborhoods had been exposed to community violence.

## Natural or Man-Made Disasters

- Recent surge in research about the effects of disasters on children: Bangladesh flood, Hurricanes Hugo and Andrew, Oklahoma City Bombing, 9/11, Hurricane Katrina
- Short and long term effects of disasters have been studied: common symptoms include secondary enuresis, sleep disorders and hyperalertness

## Other Traumatic Experiences in Early Childhood

- Physical or sexual abuse: 28% of child victims are age 0-3; 85% of child fatalities are younger than age 6
- Painful medical procedures
- Dog bites
- Accidents: automobile, burns
- Loss or injury of a loved one
- Exposure to war/war-related atrocities

## Developmental Impact of Trauma

## Critical Tasks of Development

- Cognitive growth and learning
- Emotional self-regulation
- Attachment to caregivers and social development

- Trauma disrupts all aspects of normal development

## Excessive Stress & the Developing Child

- Positive stress: Moderate, short lived; necessary for growth
- Tolerable stress: Occur intensely for brief periods of time; the brain recovers
- Toxic/traumatic stress: Chronic, uncontrollable, occurring without the child having access to supportive adults

## Stress and the Pre-schooler

Stressful events can be harmful, tolerable or beneficial, depending on:

- Whether the stressful experience is controllable
- How often and for how long the body's stress system has been activated in the past
- Whether the affected child has safe and dependable relationships to turn to for support.

## Trauma in the Preverbal Child

- Young children remember!
- For trauma that occurs after 28-36 months child can usually provide some description/narrative of event
- For trauma happening prior to this, verbal memory might be absent or spotty
- With onset of language, children can sometimes communicate fragments of memories for events that took place over previous months (with a lot of cueing)
- Behavioral memory present from very early

## Diagnostic Classifications and Screeening

## PTSD in Infants and Young Children

- DSM-IV- does not adequately capture the traumatic reactions of very young children
- DC: 0-3-- Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood

## Traumatic Stress Disorder

(DC 0-3 criteria)

- Existence of a traumatic event
- Re-experiencing:
  - Repetitive posttraumatic or reenactment play
  - Distress with reminders
  - Dissociation episodes
  - Nightmares
- Numbing of responsiveness or interference with developmental momentum
  - social withdrawal
  - restricted affect
  - loss of skills
  - Constriction of play

## Traumatic Stress Disorder

(DC 0-3 criteria)

- Increased arousal
  - sleep disorder
  - short attention span
  - Hypervigilance
  - startle response
  - Increased irritability, lability, temper tantrums
- New fears/aggressions
  - aggressive behaviors
  - clinging behavior
  - fear of toileting or other fears

## Effects of Exposure to Violence: Infants and Toddlers

- Increased irritability
- Disregulation of sleep and eating
- Increased clinginess/anxiety in strange situations
- Hypervigilance

## Effects of Exposure to Trauma: Pre-schoolers

- Sleep disturbances
- Separation anxiety
- Inhibition in efforts to explore the environment
- Developmental regressions
- Risky, reckless behavior
- Preoccupation with the traumatic event

## Influences on a child's response to domestic violence

- Characteristics of the child
  - Age
  - Gender
  - Temperament/personality
- Characteristics of the Family
  - Parenting
  - Access to outside supports
- Characteristics of the Violence
  - Frequency
  - Severity
  - Proximity

2.15

## Physician Response to PTSD

Study of 300 pediatric emergency care providers:

- 7% believed that children were likely to develop symptoms to posttraumatic stress after a motor vehicle accident
- Anticipatory guidance provided at least once by 18% of reporting physicians
- 11% were aware that screening tools were available to assess risk

Ziegler, et. al. 2005.

## The Screening Tool for Early Predictors of PTSD: (STEPP)

- A brief, stand-alone screening tool consisting of 12 questions, developed for use during acute trauma care to assist in identifying at risk children and parents

Winston, Kassam-Adams, Garcia-Espana, et. al (2003)

## STEPP Questions for Parents

- Did you see the incident in which your child got hurt?
- Were you with your child in an ambulance or helicopter on the way to the hospital?
- When your child was hurt (or when you first heard that it had happened) did o=you feel really helpless, like you wanted to make it stop happening, but you couldn't?
- Does your child have any behavior problems or problems paying attention?

## STEPP Questions for children

- Was anone else hurt or killed?
- Was there a time when you didn't know where your parents were?
- When you got hurt, or right afterwards, did you feel really afraid?
- When you got hurt, or right afterwards, did you think you were going to die?

## STEPP Information from the Medical Record

- Suspected extremity fracture?
- Was pulse rate at triage >104/min if child is under 12 or > 107/min if child is loder than 12?
- Is child 12 years old or older?
- Is this a girl?

## Treatment Options for Traumatized Young Children

## When to Refer

- If symptoms persist for more than a month
- If the parents is unable to be supportive or attuned to the needs of the child
- If the trauma included the loss of a parent, caregiver, or family member.
- If the parent is highly distressed and symptomatic

## Clinical themes

1. There is no safe place.
2. Adults can not protect themselves or their children.
3. Keeping the secret of domestic violence is difficult and shameful
4. The child takes on the responsibility of protecting the victim.
5. The child has ambivalent feelings toward the abusive parent.
6. Chronic fear leads to aggression.

2.17

## How Pre-Schoolers think about violent events

- No cognitive understanding of the event
- Respond to the feeling or affect expressed
- Construct their own meaning of the event.

## Impact of Trauma on Caregiver-Child Relationship

- When the caregiver has also experienced interpersonal trauma:
  - The caregiver's ability to establish and maintain an empathic relationship with the child may be impaired
  - The caregiver may have a decreased capacity to recognize danger or stress
  - The child may take the role of caregiver

## Impact of Trauma on Caregiver-Child Relationship

- Loss of sense of caregiver as reliable protector
- Disturbed mental representations of who is safe and who is dangerous
- Loss of capacity to sustain representations of caregiver as secure base
- Often intense and contradictory emotions

(Lieberman & Van Horn, 1998)

## Impact of Trauma on Caregiver-Child Relationship

- Either partner may develop new negative attributions based on trauma experience
- Caregiver and child may serve as traumatic reminders for one another

Pynoos, 1997

## Guiding Principles

- Therapeutic relationship is the essential element of healing
- The parent is essential to the treatment
- Emphasis on establishing safety and stability as an early priority
- Children and families have a range of coping skills and strengths
- Importance of case management/advocacy
- Programs should be aware of and responsive to the range of cultural/ethnic backgrounds of clients.
- Programs must adequately support staff by providing clinical supervision.

## Treatment for Acute Stress Response in young children

- For very young children, (< 4), treatment is focused on the parent and child
- Age 4 and up, combinations of individual and parent-child therapy
- Goals:
  - Enable parent to understand the child's response and to respond appropriately
  - Management of behavioral symptoms

## Therapy with Children affected by violence

- Evidenced-based therapies include:
  - Cognitive behavioral treatment
  - Child-parent psychotherapy

## Child-Parent Psychotherapy Goals

### Safety and Stabilization

- Facilitating basic safety
- Fostering an increased capacity to respond realistically to threat/ Re-establishing trust in bodily sensations
- Maintaining regular levels of affective arousal

## Child-Parent Psychotherapy Goals

### Trauma Specific Understanding

- Normalization of the traumatic response
- Encouraging a differentiation between reliving and remembering
- Facilitating trauma-based "dialogue"

## Child-Parent Psychotherapy Goals

### Relationships and Intimacy

- Achieving reciprocity in intimate relationships
- Targeting the parent's and child's inaccurate and maladaptive mental representations of each other
- Restore trust in one another

## Child-Parent Psychotherapy Goals

### Re-engagement/Integration

- Encouraging a return to normal development and engagement with present activities and future goals
- Placing the traumatic experience in perspective
- Joy in exploration and learning

## A Case

## Resources

- National Traumatic Stress Network: NCTSN.org
- National Council on the Developing Child: http://www.developingchild.net
- Zero to Three: Zerotothree.org

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 7

## Monday, October 1, 2:00 pm - 3:30 pm

---

## Alternative Therapies for Children with Autism Spectrum Disorders

*Michelle H. Zimmer, MD, Cincinnati Childrens Hospital Medical Center, Cincinnati, OH, Cynthia R. Johnson, PhD, Children's Hospital of Pittsburgh, Benjamin Handen, PhD, John Merck Program Western Psychiatric Institute, Pittsburgh, PA, Patricia Manning-Courtney, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH*

**Narragansett Ballroom A**

## Alternative Therapies for Children with Autism Spectrum Disorders

Society for Developmental-Behavioral Pediatrics
October 1, 2007
Michelle Zimmer, MD
Patricia Manning-Courtney, MD
Benjamin Handen, PhD

Cincinnati Children's
change the outcome
www.cincinnatichildrens.org
Cincinnati Children's

## Complementary and Alternative Medicine (CAM)

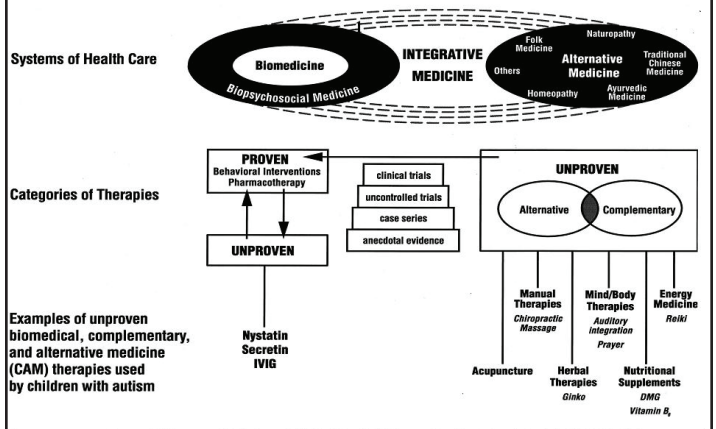
- A heterogeneous assortment of disparate medical beliefs and healing practices, that operate under a world view or theoretical construct different from the politically dominant health system of a particular society or culture.

change the outcome
Cincinnati Children's

## Integrative Medicine

- System of comprehensive care
- Emphasizes wellness and healing of the whole person
- Special emphasis on
  - patient participation
  - attention to mental and spiritual health

change the outcome
Cincinnati Children's




change the outcome
Committee on Children With Disabilities, Pediatrics 2001;107:598-601

Copyright ©2001 American Academy of Pediatrics
PEDIATRICS

## Principals of Practicing an Integrative Approach

- Fostering tolerance and cooperation among two divergent belief systems
- Mainstream medicine and alternative medicine should relate as separate but cooperative medical systems
- Shared goal of promoting health and relieving suffering

change the outcome℠

Cincinnati Children's

## A Balancing Act

- Health care practitioners must balance professional ethical responsibility to inform patients about effective treatments with their desire to provide family centered care

change the outcome℠

Cincinnati Children's

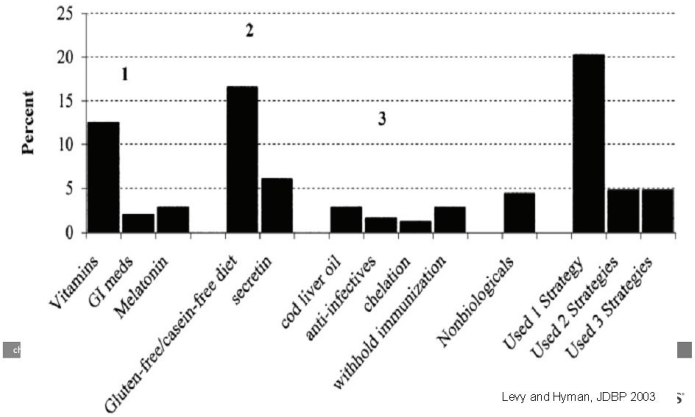
## CAM use among children with disabilities is common

- 30-50% of children with autism spectrum disorders are using Complementary and Alternative (CAM) Therapies
- CAM use is often not discussed with the child's physician

change the outcome℠

Cincinnati Children's

## CAM USE AMONG YOUNG CHILDREN WITH AUTISM




Levy and Hyman, JDBP 2003

## Historical Perspective on Autism Specific CAM

- The "oldies but goodies"
  - Vitamin B6, Magnesium, DiMethylglycine
  - Fenfluramine
- Limited studies make true recommendations difficult
- Development of a more "systematic approach" to CAM testing and treatment (DAN protocol)
- Energy Medicine

change the outcome℠

Cincinnati Children's

## Autism Specific CAM

- "Newer" CAM in autism
  - Yeast therapies
  - Immune system based treatments
    - IVIG, steroids
  - The Secretin story
  - Diets
    - GFCF, Feingold, dye-free, specific carbohydrate
  - Chelation, B12
  - Fish Oil/ omega 3

change the outcome℠

Cincinnati Children's

## Autism Specific CAM

- CAM or not?
  - Melatonin, naltrexone
  - Occupational therapy/Sensory Integration
  - Craniosacral Therapy
  - Auditory Integration Therapy

change the outcome℠

Cincinnati Children's

## Review of Autism Specific CAM: What is the Evidence?

change the outcome℠

Cincinnati Children's

## Secretin

- This treatment was well publicized in the media
- Resulted in high demand for this therapy
- Given intravenously
- Over 14 published studies
- No treatment effect
- Large placebo effect in some studies
- Many parents continued to want treatment even after they were informed that they were in the placebo group or that their child did not improve



## Other GI System Treatments

- Digestive enzymes
- Probiotics
- Antifungal treatments
- All aimed at healing the hypothesized inflamed or leaky GI tract
- No studies in autism



## Intravenous Gamma Globulin (IVIG)

- Three case series studies in autistic children
  - 2 studies children showed marked improvement, one study no improvement after 6 months of treatment
- Potentially serious side effects
- Limited availability, not enough being produced by drug companies



## Di-methylglycine (DMG)

- Has properties similar to B-complex vitamins
- Touted in Europe to cure many ills from cancer to hepatitis
- Two placebo controlled trials have produced negative results
- Still commonly used as a nutritional supplement in children with ASD

## Vitamin B6 and Magnesium

- Required for synthesis of neurotransmitters and myelin
- Used in autism since 1960's
- Case report of speech improvements after mega doses (Bonisch, 1968)
- Open label studies initially promising
- Three very small randomized, blinded clinical trials negative (n=28 for all three studies)

change the outcome℠

Cincinnati Children's

## Using B6

- US RDA=0.5-1mg/day
- Mega doses used in autism studies: 100mg-1000mg/day
- Peripheral neuropathy reported in adults with long term doses over 100mg/day
- Nausea, vomiting, photosensitvity, abdominal pain have been reported

change the outcome℠

Cincinnati Children's

## Gluten-Casein Free Diet

- Elimination of all wheat and milk products from the diet
- Up to 15% of children with autism spectrum diagnosis are on this diet
- Rationale for use:
  - Leaky gut theory
  - Milk and wheat break down into morphine like compounds that are absorbed through leaky GI tract
  - Create morphine like effect social withdrawal etc

change the outcome℠

Cincinnati Children's

## Data to Support Efficacy of GFCF Diet is Limited

- Lucarelli 1995
  - 36 children with autism and suspected milk allergy
  - Milk eliminated
  - Improvements in 5/7 autistic behaviors seen
  - No comparison group
  - Unblinded

change the outcome℠

Cincinnati Children's

## GFCF diet studies (continued)

- Knivesberg 2002
  - Randomized 28 autistic children to gfcf diet or regular diet for one year
  - Diet group significantly more gains in language, attention and decrease in problematic behavior
  - Unblinded assessors, no way to monitor diet compliance



Cincinnati Children's

## Gluten free casein Free Diet Studies (cont)

- Elder JH et al 2006
  - 15 children 2-16 yrs
  - Double blind randomized
  - Diets supplied by metabolic kitchen
  - No group differences
  - Several parents reported improvements in diet group
  - Call for larger double blind study
  - No subject had urinary peptides



Cincinnati Children's

## At least two ongoing clinical trials of GFCF diet in autism….



Cincinnati Children's

## Heavy Metals

- Theory: Body of autistic children cannot eliminate heavy metals properly, causing brain damage



Cincinnati Children's

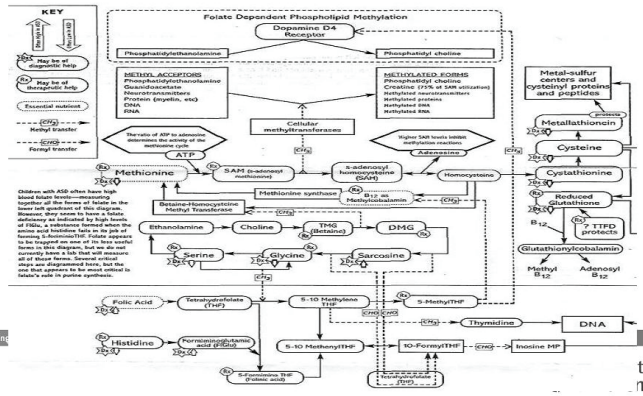
## Proposed Treatments for Heavy Metal Detoxification

- Antioxidants: glutathione patches
- Amino acid cocktail
- Chelation therapy:
  - IV chelation recently associated with death of an autistic child
- No clinical trials

change the outcome℠

Cincinnati Children's

## The DAN Theory of Impaired Heavy Metal Detoxification in Autism




change the outcome℠

Cincinnati Children's

## Is there ANY evidence of impaired Heavy Metal Detoxification in Autism?

- James SJ et al 2004
  - Metabolic profiles suggest increased propensity for oxidative stress and decreased methylation capacity in children with autism vs. controls

change the outcome℠

Cincinnati Children's

## Fatty Acid Metabolism and Autism

- Several studies of blood polyunsaturated fatty acid levels in children with autism
  - Vancassel
  - Bell
  - Bu

change the outcome℠

Cincinnati Children's

## Omega-3 fatty acids supplements

- available through cod liver oil, fish oils, flax seed
- Potential side effects well described in adults:
  - increased bleeding tendency, stomach upset, fishy odor



## Fatty Acid Supplement Clinical Trials

- One published clinical trial clinical trials testing effectiveness



## Herbs/ Supplements with Effects on Neurotransmitter unction

- Several neurotransmitter systems affected in autism: serotonin, glutamate, GABA
- Many supplements are marketed to improve brain functioning
  - Vitamin C- one study in autism- some improvements in symptoms
  - St Johns Wort- no studies
  - SAM-E- no studies



## Biologic Treatments- Neurotransmitters (continued)

- Some unusual medications thought to affect neurotransmitters have been tested to determine if they have any effect on autistic symptoms
  - L-carnosine- one study, some improvement
  - D-cycloserine- one study, some improvement
  - Naltrexone- 2 studies, minimal improvement
  - Oxytocin- one study some improvement

## Melatonin

- Promotes sleep onset
- Does not work for sleep maintenance
- Dose range 1-3 mg (?up to 6mg)
- "safe" upper limit is not known
- Minimal side effects reported

change the outcome℠

Cincinnati Children's

## Working with Families of Children with ASD seeking CAM

- Keep open mind and ear to families concerns/questions
- Some families seeking "permission" to NOT use CAM
- Heuristic Decision Making Principal
- "N of one" example
- What's worked for you?

change the outcome℠

Cincinnati Children's

## Drawing and interpreting labs recommended by holistic practitioners

- Steer families away from this
- Labs don't drive the decision making
- Emphasize safety and efficacy
- Try one thing at a time
- Take data!!
  - Aberrant behavior checklist
  - PDD-BI
  - Daily notes on a calendar

change the outcome℠

Cincinnati Children's

## Resources for Practitioners

- Altmedex (Thomson Micromedex)
- Longwood herbal task force www.longwoodherbal.org
- National Center for Complementary and Alternative Medicine nccam.nih.gov
- Continuing medical education for herbs and supplements: http://www1.wfubmc.edu/NWAHEC/Online+CE.htm

change the outcome℠

Cincinnati Children's

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 8

## Monday, October 1, 2:00 pm - 3:30 pm

---

## Novel Approaches to Well Child Practices

*Chair: Nancy Lanphear, MD*
*Speakers: Diane A Ferran, MD*, Columbia University at Harlem Hospital Center, New York, NY; Trenna L. Sutcliffe, MD, Stanford University, Palo Alto, CA, Aradhana Pandey, MD, MetroHealth Medical Center, Celveland, OH; Lynn M. Wegner, MD, University of North Carolina, Chapel Hill, NC*

**Narragansett Ballroom B**

**Handouts from this speaker will be provided during the session.*

## Barriers to Developmental Screening in Continuity Clinic

*Trenna L. Sutcliffe, Lynne C. Huffman, Elizabeth Stuart, Shashank V. Joshi, Theodore C. Sectish, Heidi M. Feldman*

Stanford University School of Medicine

## Background

- The AAP recommends developmental screening for children 9, 18, and 30 months of age.
- Few pediatricians adhere to this guideline.
- There are no data on the use of screeners by pediatric residents.

## Objectives

- To evaluate resident compliance with screening during their Developmental Behavioral Pediatrics (DBP) rotation.
- To determine resident-perceived barriers for developmental screening.

## Methods

- Pediatric residents rotating through a 1 month DBP block were introduced to two developmental screeners
  - Parents Evaluation of Developmental Status (PEDS)
  - Ages & Stages Questionnaire (ASQ)

- Residents were provided with:
  - Small group tutorials on screening
  - Packages that included screeners, instructions, AAP screening policy article
  - Clear expectations to use screeners in their continuity clinics, which occur in
    - academic hospital outpatient clinic
    - community hospital outpatient clinic
    - community private practice
  - Detailed feedback at the end of the rotation

- Residents were asked to complete a learning task
  - To compare PEDS and ASQ characteristics
  - To list advantages and disadvantages of each
  - To recommend one of the screeners to be incorporated into all pediatric continuity clinics

## Results

- Sixteen residents rotated through DBP between July 2006 and May 2007
  - 3 interns
  - 6 juniors
  - 7 seniors

- 12 of the 16 completed the learning task.
- 4 residents did not complete the learning task.
- Residents not completing the task reported that they were unable to use the screeners in community-based practices.

- Among residents who used the screeners:
  - 3/12 recommended the PEDS
  - 9/12 recommended the ASQ

## PEDS

- Resident-reported advantages:
  - minimal time for parent & clinician
  - management algorithm provided
- Resident-reported disadvantages:
  - vague, open-ended, not comprehensive, subjective
  - parents may be unable to accurately identify concerns
  - difficult to score

## ASQ

- Resident-reported advantages:
  - thorough, detailed, age-specific
  - easy to score.
- Resident-reported disadvantages:
  - significant paperwork and time for parent & clinician.

## Conclusions

- Despite a clear expectation to use screeners, 25% of residents fail to do so.
- Resident-perceived barriers for the PEDS (ie. concern for poor parental report) may reflect resident clinical and parenting inexperience.

- Resident-perceived barriers for the ASQ (ie. excessive paperwork and time for scoring) may reflect poor support for screening in continuity clinics.

## Future Work

- To determine how to increase screening by residents during the DBP rotation and throughout residency.
- To prepare continuity clinic attendings for developmental screening.
- To increase clinic support for screening.

# A Clinic-Based Parenting Library: Needs Assessment

Aradhana Pandey, MD
Metrohealth Medical Center, Cleveland
October 1, 2007

## Introduction

1. Assess parents' desire for information.
2. Establish a lending library in the pediatric primary care clinic.
3. Collect systematically reports by parents on intervention (Case Series).
4. Finally, we propose to conduct a randomized controlled trial based on the success of above intervention.

## Thus Far...

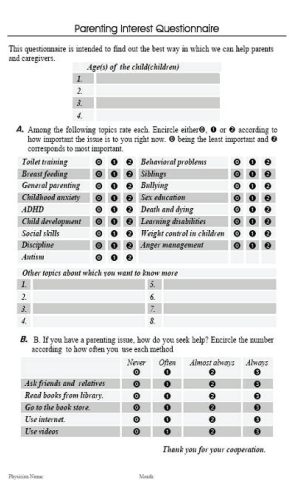
1. Assessed and described parents' information needs and doctors' perceptions of those needs.
2. Parenting books reviewed and rated by our team members.
3. Now we are providing books to the parents and getting their feedback.

## Needs Assessment

### Objectives:

1. To characterize parental concerns.
2. To identify preferred media format.
3. Parenting interest according to parents of different age group children.
4. Comparison of responses of parents with that of professionals.

- **Anonymous, self-completed questionnaire.**



Parenting Interest Questionnaire

This questionnaire is intended to find out the best way in which we can help parents and caregivers.

| Age(s) of the child(children) |
|---|
| 1. |
| 2. |
| 3. |
| 4. |

A. Among the following topics rate each. Encircle either ❶, ❷ or ❸ according to how important the issue is to you right now. ❸ being the least important and ❶ corresponds to most important.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Toilet training | ❶ | ❷ | ❸ | Behavioral problems | ❶ | ❷ | ❸ |
| Breast feeding | ❶ | ❷ | ❸ | Siblings | ❶ | ❷ | ❸ |
| General parenting | ❶ | ❷ | ❸ | Bullying | ❶ | ❷ | ❸ |
| Childhood anxiety | ❶ | ❷ | ❸ | Sex education | ❶ | ❷ | ❸ |
| ADHD | ❶ | ❷ | ❸ | Death and dying | ❶ | ❷ | ❸ |
| Child development | ❶ | ❷ | ❸ | Learning disabilities | ❶ | ❷ | ❸ |
| Social skills | ❶ | ❷ | ❸ | Weight control in children | ❶ | ❷ | ❸ |
| Discipline | ❶ | ❷ | ❸ | Anger management | ❶ | ❷ | ❸ |
| Autism | ❶ | ❷ | ❸ | | | | |

Other topics about which you want to know more

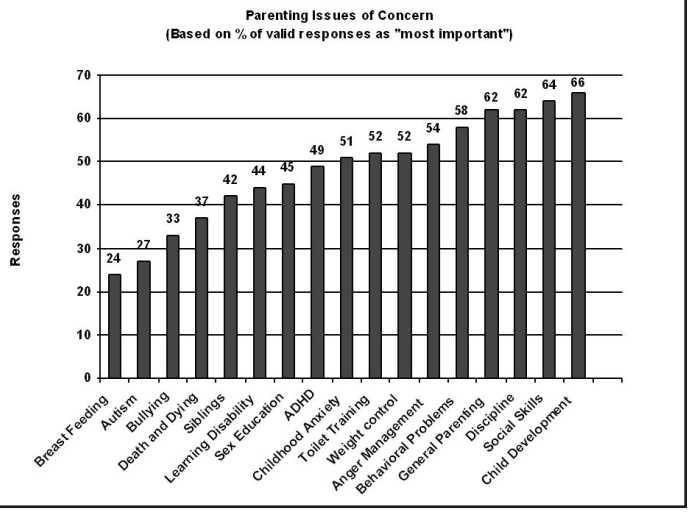
| | | | |
|---|---|---|---|
| 1. | | 5. | |
| 2. | | 6. | |
| 3. | | 7. | |
| 4. | | 8. | |

B. B. If you have a parenting issue, how do you seek help? Encircle the number according to how often you use each method

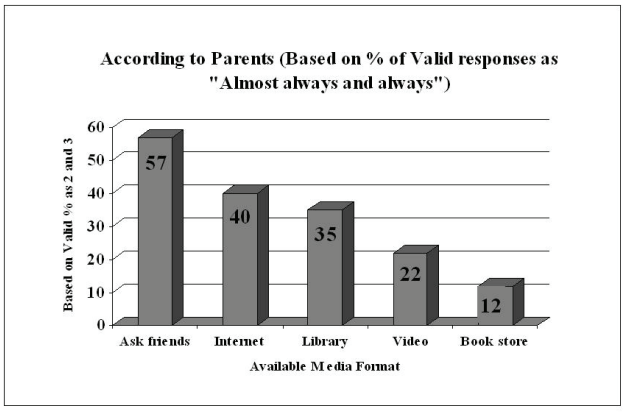
| | Never | Often | Almost always | Always |
|---|---|---|---|---|
| Ask friends and relatives | ❶ | ❷ | ❸ | ❹ |
| Read books from library. | ❶ | ❷ | ❸ | ❹ |
| Go to the book store. | ❶ | ❷ | ❸ | ❹ |
| Use internet. | ❶ | ❷ | ❸ | ❹ |
| Use videos | ❶ | ❷ | ❸ | ❹ |

*Thank you for your cooperation.*

Physician Name: Month:

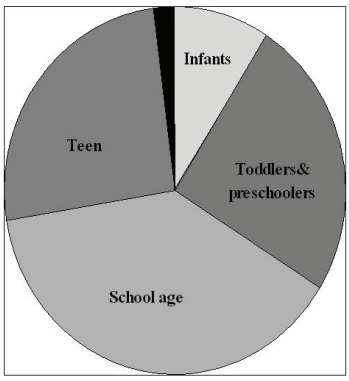



## Preferred Media Format




## Total Respondents-100

- **Sub classification of Caregivers - based on the age of the eldest child.**
- **Infants (n=12)**
- **Toddlers and Preschoolers (n=24)**
- **School age (n=37)**
- **Teens (n=25)**
- **Age not mentioned (n=2)**



## Most Important Parenting Issues According to Parents of Different Age Children

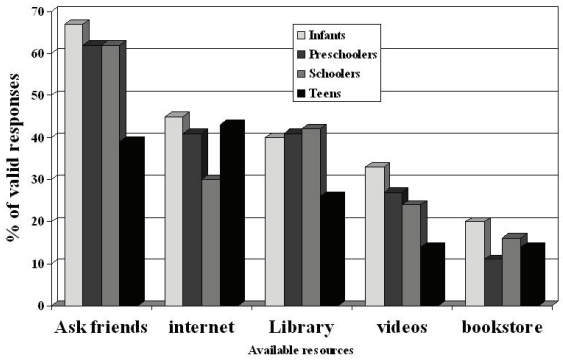
***Parents of Infants***
1) Toilet training (80%)
2) General parenting (70%)
3) Social skills (67%)

***Parents of Toddlers and preschoolers***
1) Discipline (72%)
2) Toilet training (68%)
3) Child Development (66%)

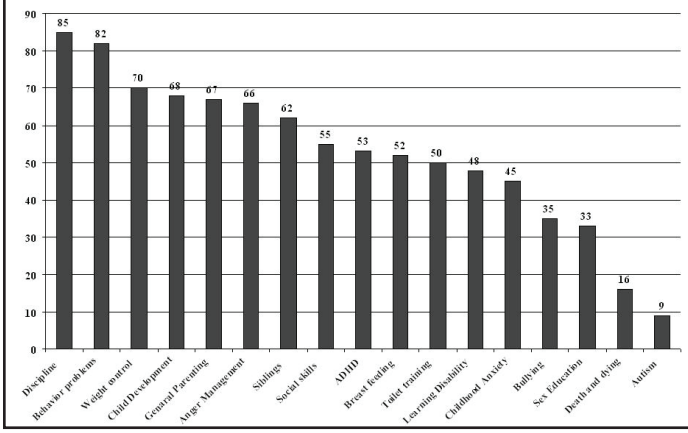
***Parents of School-age Children***
1) Weight control (72%)
2) Child Development (72%)
3) Behavioral problems (70%)

***Parents of Teens***
1) Discipline (70%)
2) Child Development (70%)
3) Sex education (68%)

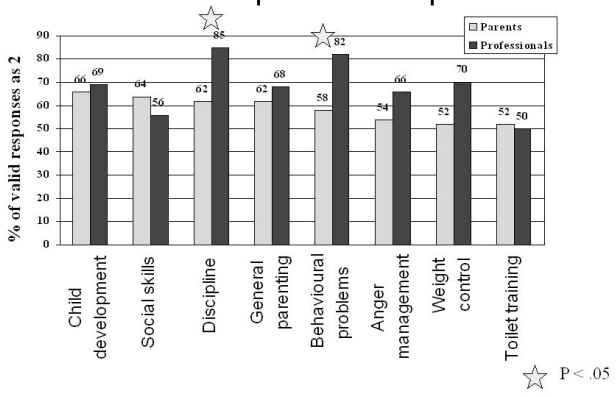
## Comparison of Use of Available Resources Among Parents of Different Age Children



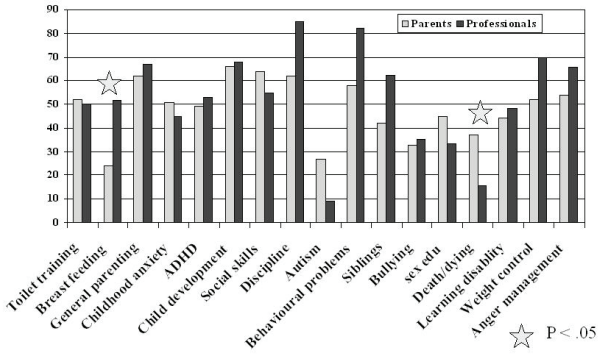

## Parenting issues most important according to professionals (*Residents-16 and Faculty-18=34)*



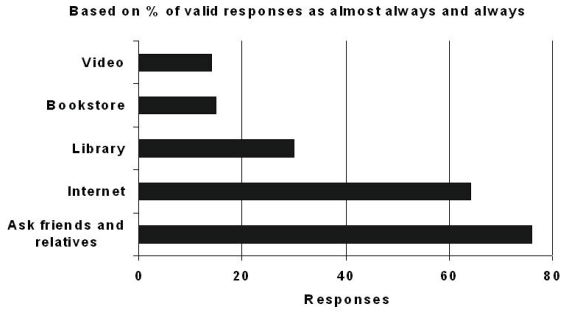

## Comparison of most important parenting issues between parents and professionals



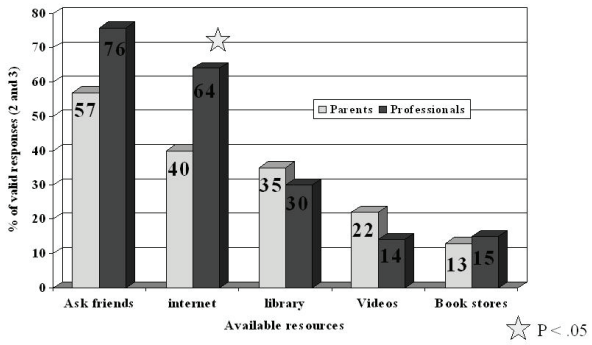
## Comparison of the Topics of Concerns Between Parents and Professionals




## Professionals' Estimate of Parents' Use of Resources




## Comparison of use of resources between professional and parents




## Summary and Conclusions

1. Many parents reported interest in a variety of parenting topics.
2. Parents of different aged children reported different areas of interest.
3. About 1/3 reported regularly seeking parenting information from a library; far fewer frequented bookstores.
4. Doctors accurately gauged parents' interests and information preferences, with a few exceptions.

## Thanks to:

- Team members…..

  Rupesh Raina
  Vijender Karody
  Vishal Pandey
  Kshama Karody
  Kiranmai Gorla
  Tushar Shah
  Wael-El-Mallah
  Vipul Garg
  Moises Auron

- Dr.Robert Needlman (Mentor and Supervisor)
- Cuyahoga County Public Library

## 2006 Survey of AAP SODBP Members About Their Coding Habits

Lynn M. Wegner, MD, FAAP
University of North Carolina, Chapel Hill
October 1, 2007

## Conflict of Interest

- I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or providers of commercial services discussed in this CME activity.
- Lynn M. Wegner, MD, FAAP

## Purpose of Study

- Informal Survey

1. Overview of Section membership training in ICD-9-CM and CPT coding
2. Identify how 96110 (Dev. Testing-Limited) was being coded
3. Identify if 96111 (Developmental Testing-Extended) was being coded
4. Identify self-imposed practice restrictions preventing full payment for DB services

## Background

- 2004: AAP SODBP and COCN successfully took 96110 (Developmental Testing-Limited) and 96111 (Developmental Testing-Extended) to the AMA RUC for re-valuation of practice rvu's for 96110 and 96111 and physician work rvu's for 96111
- Both were approved by the RUC for non-facility locations
- Only 96111 was approved for both non-facility and facility locations

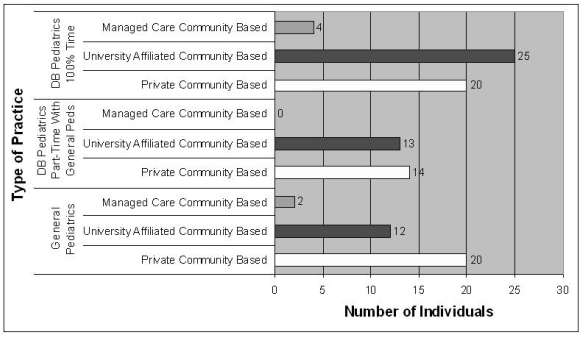
## RVU's for 96110 and 9611

| Domain | 96110 RVU's | 96111 RVU's |
|---|---|---|
| Physician Work | N/A | 2.60 |
| Liability Insurance | 0.18 | 0.18 |
| Non-facility Practice Expense | 0.18 | 0.96 |
| Facility Practice Expense | N/A | 0.92 |
| **Non-facility Total** | **0.36** | **3.74** |
| **Facility Total** | **N/A** | **3.7** |
| Medicare Non-facility Payment (2007) | 13.64 | 131.88 |
| Medicare Facility Payment (2007) | N/A | 130.37 |

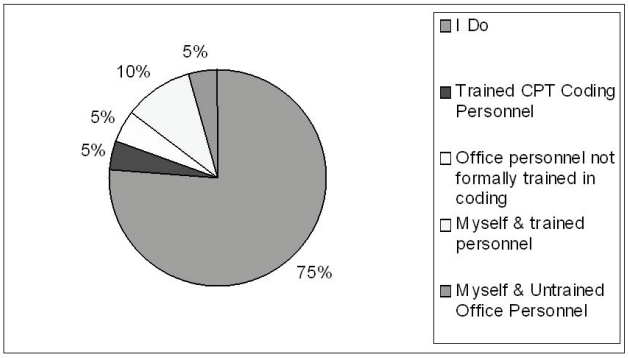
## Who Participated?

| Profession | Number |
|---|---|
| Pediatricians | 92 |
| Psychologists | 2 |
| Other professions | 2 |

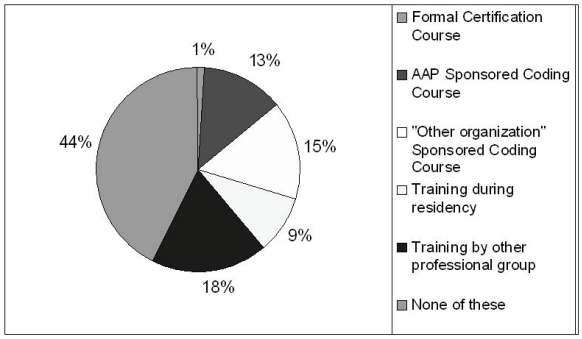
## Physician Respondents' Practice Types




## Who assigns ICD-9-CM & CPT codes to your services?

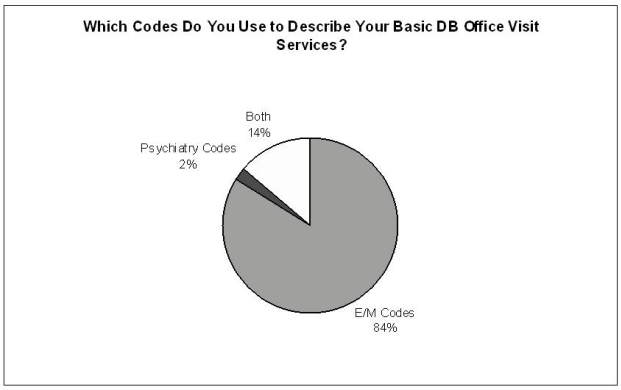


## Formal Training in Assigning Codes

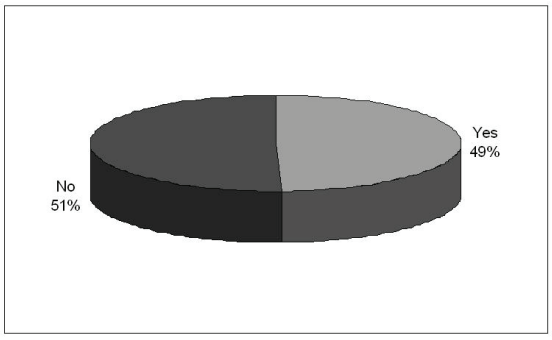



** Some participants checked more than one type of training, so the percentages here may be a little off. What you should notice here, though, is that almost half of these physicians have not had any training.

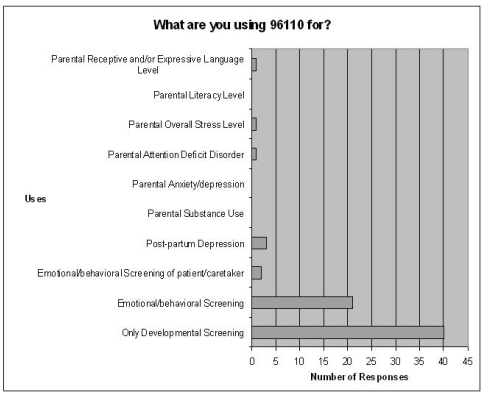
## E/M vs mental health CPT codes



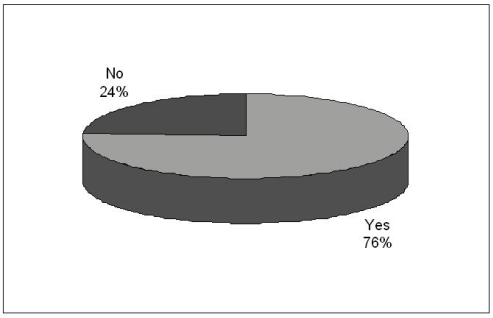

## Are You Using 96110 "Developmental Screening"?




## "Off label" use of 96110

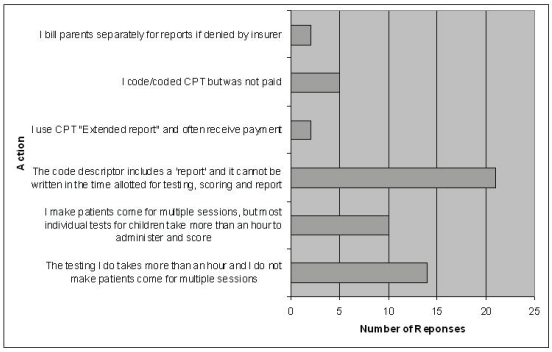


## Do you combine 96111 with an E/M code?



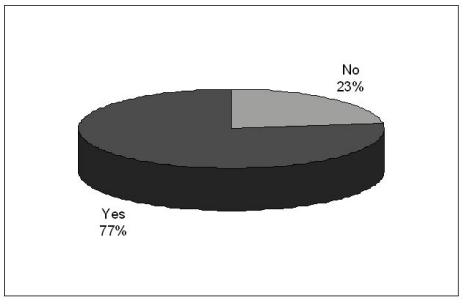

** Only 50 out of 98 participants answered this question.
** 2 participants said they only code 96111 for the visit.
** 0 participants said they code a psychiatry code in addition to 96111.

## How do you compensate for 96111 not adequately paying for all the service provided in one visit?



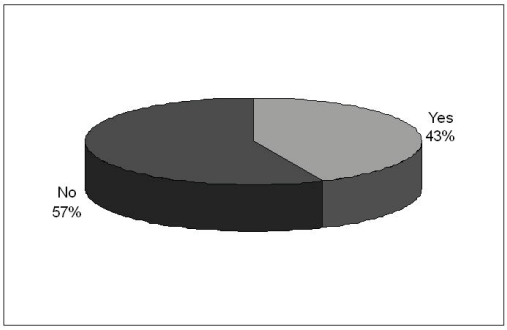

** 53 out of 98 participants did not answer this question

## Are parents generally willing to pay extra for a report?



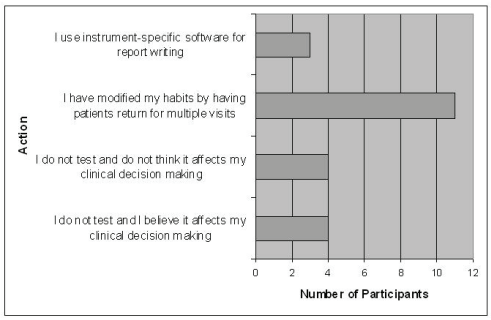

** Only 13 out of 98 participants answered this question

## If you do not believe payment for 96111 is adequate, has that affected your provision of developmental Testing?




** 45 out of 98 participants did not answer this question

## How has inadequate payment affected provision of developmental testing?




** 45 out of 98 participants did not answer this question

## Final Thought

- 69 of the 98 survey respondents -70% - said "I would like for the AAP to help improve the lack of insurer payment for providing developmental testing"
  - –This will be a goal!

SDBP
Society for Developmental
& Behavioral Pediatrics

# Concurrent Session 9

## Monday, October 1, 2:00 pm - 3:30 pm

---

## Systems Change Approaches for Improving Services for Children with or at Risk of Developing Special Needs

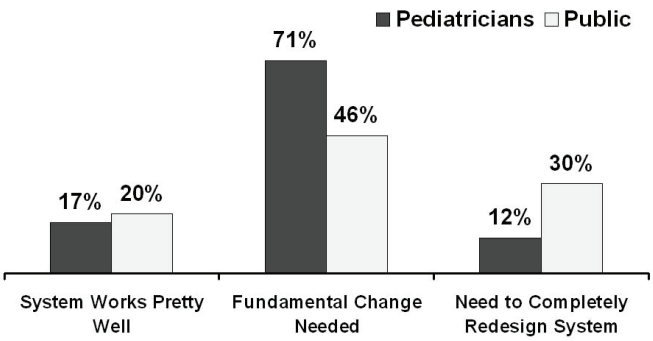
*Mark Wolraich, MD, University of Oklahoma Health Sciences Center, Paul Dworkin, MD, University of Connecticut School of Medicine, Edward Schor, MD, Commonwealth Fund, Diana Denboba, BS, Maternal and Child Health Bureau*

**Narragansett Ballroom C**

## Systemic Change to Improve Quality of Developmental Services: A Foundation's Approach

Edward L. Schor, MD
Program Director
Child Development & Preventive Care
The Commonwealth Fund

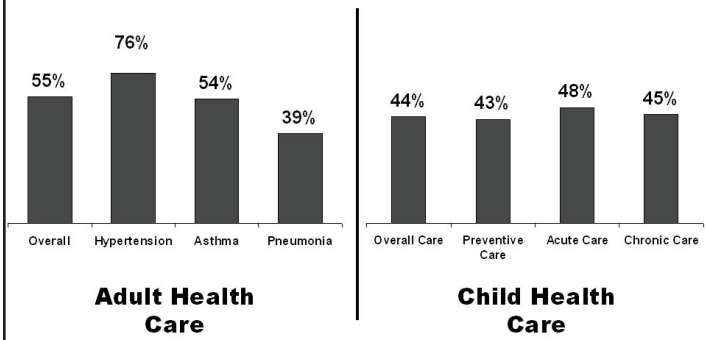
## Opinions of the U.S. Health Care System




Source: 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, and 2006 Commonwealth Fund Survey of Public Views of the U.S. Health Care System

## Quality of Health Care for Children Even Worse Than for Adults

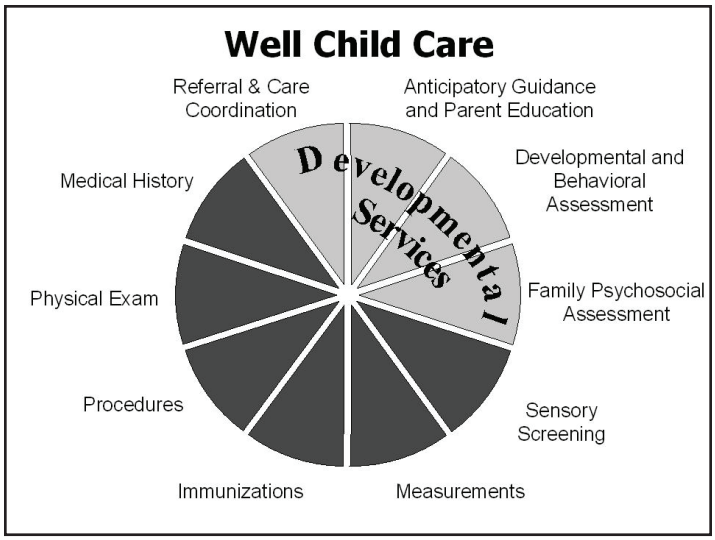
Percent of Recommended Care Received

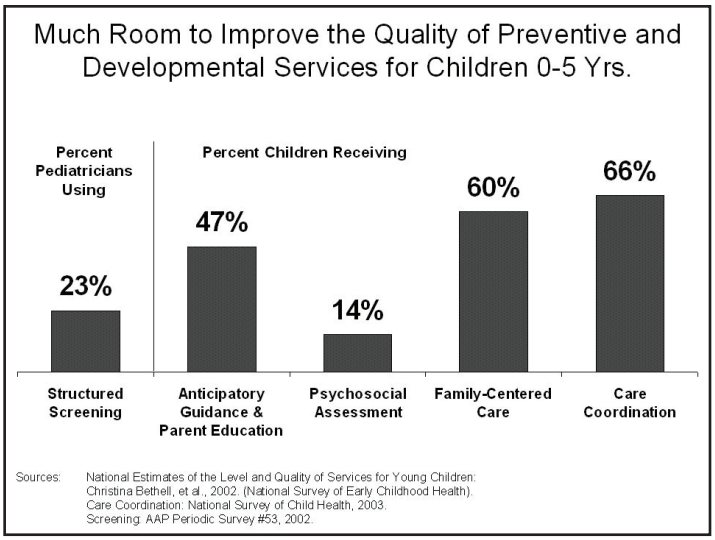


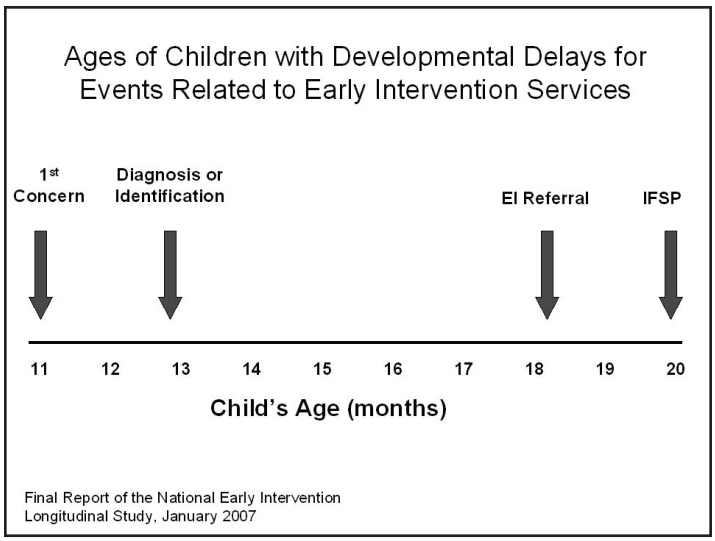

Source: McGlynn et al., NEJM 2003; 2635–2645. Mangione-Smith, et al, RAND, 2006.

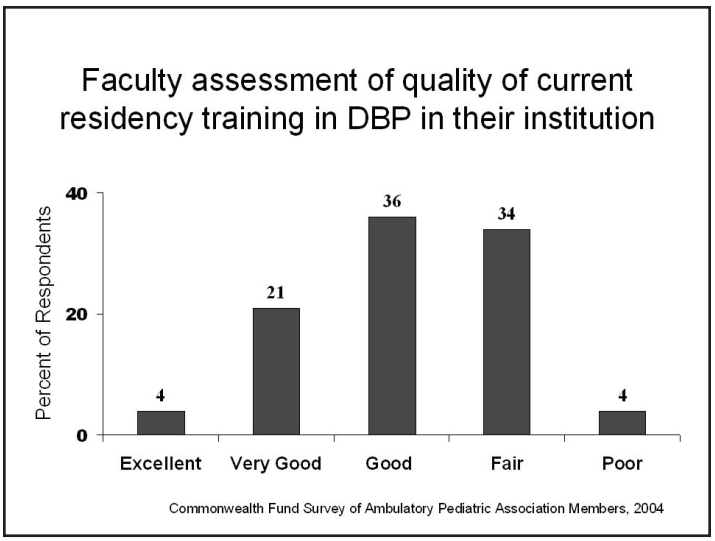
## Developmental Services in Primary Care

- Educate parents
- Assess families and children for risks and problems
- Intervene with children and parents
- Coordinate care, refer and follow-up

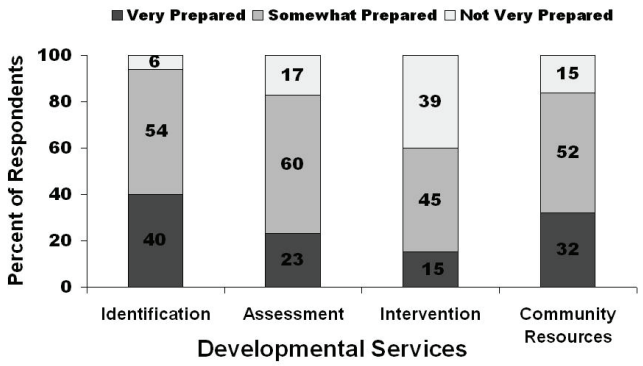

Well Child Care
Referral & Care Coordination
Anticipatory Guidance and Parent Education
Developmental and Behavioral Assessment
Family Psychosocial Assessment
Sensory Screening
Measurements
Immunizations
Procedures
Physical Exam
Medical History
Developmental Services


Much Room to Improve the Quality of Preventive and Developmental Services for Children 0-5 Yrs.
Percent Pediatricians Using
Percent Children Receiving
23%
47%
14%
60%
66%
Structured Screening
Anticipatory Guidance & Parent Education
Psychosocial Assessment
Family-Centered Care
Care Coordination
Sources: National Estimates of the Level and Quality of Services for Young Children: Christina Bethell, et al., 2002. (National Survey of Early Childhood Health).
Care Coordination: National Survey of Child Health, 2003.
Screening: AAP Periodic Survey #53, 2002.


Ages of Children with Developmental Delays for Events Related to Early Intervention Services
1st Concern
Diagnosis or Identification
EI Referral
IFSP
11
12
13
14
15
16
17
18
19
20
Child's Age (months)
Final Report of the National Early Intervention Longitudinal Study, January 2007


Faculty assessment of quality of current residency training in DBP in their institution
Percent of Respondents
40
20
0
4
21
36
34
4
Excellent
Very Good
Good
Fair
Poor
Commonwealth Fund Survey of Ambulatory Pediatric Association Members, 2004

## Generalist Faculty Self-Assessment of Preparation to Teach DBP




Commonwealth Fund Survey of Ambulatory Pediatric Association Members, 2004

"Every system is perfectly constructed to produce the results it achieves."

Peter Senge, *The Fifth Discipline*, 1990

"Trying harder will not work. Changing systems of care will."

*Crossing the Quality Chasm*, IOM 2001

## With the Doctor

## Physician Reported Barriers to Changing Preventive Care Practices

- Not enough time (80%–85%)
- Low reimbursement (55%–58%)
- Already too much to do (53%)
- Inadequate support staff (51%)
- Unfamiliar with how to code (45%–46%)
- Not sufficiently knowledgeable (28%)
- Don't know what instruments to use (24%)
- Insufficient community referral resources (19%)

Source: American Academy of Pediatrics, Survey of Fellows #46 (2000) and #56 (2004).

## Rethinking Well Child Care

- Content and scope of care
- Schedule(s) for care
- Providers of care
- Site of care
- Mechanisms of care
- Family's role in care
- Payment for care

## 8 Steps Toward Improving the Quality of Well Child Care

- Define desired outcomes
- Revise schedule and content of care
- Establish clinical standards of care and criteria for recommending specific content
- Individualize content of care
- Adopt office redesign models and best practices
- Implement quality improvement processes
- Improve education about preventive care
- Align reimbursement with service

**Outcomes of Well-Child Care During the First 5 Years of Life**

| Domains of Well-Child Care | Outcome at School Entry |
|---|---|
| Child physical health and development | • All vision problems detected and corrected optimally*<br>• All hearing problems detected and actively managed<br>• Management plans in place for all chronic health problems<br>• Immunization complete for age<br>• All congenital anomalies/birth defects detected<br>• All lead poisoning detected |
| Child emotional, social and cognitive development | •All developmental delays recognized and treated developmental delays: (emotional, social, cognitive, communication) |
| Child-rearing capacity | •Parents knowledgeable about child's physical health status and needs<br>•Warning signs of child abuse and neglect detected<br>• Parents feel valued and supported as their child's primary caregiver and function in partnership with the child health care provider<br>• Maternal depression, family violence, and family substance abuse detected and referral initiated<br>• Parents understand and are able to fully use well-child care services |

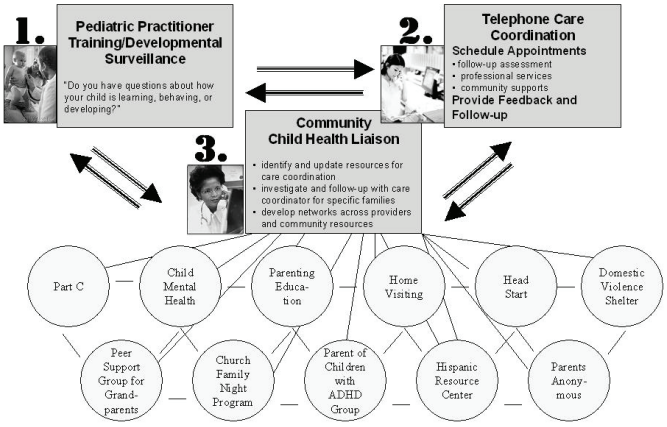
| | INFANCY | | | | | | | | | EARLY CHILDHOOD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGE → | | | | | | | | | | | | | | |
| HISTORY | | | | | | | | | | | | | | |
| MEASUREMENTS | | | | | | | | | | | | | | |
| SENSORY SCREENING<br>Vision<br>Hearing | | | | | | | | | | | | | | |
| DEVELOPMENTAL/ BEHAVIORAL ASSESSMENT | | | | | | | | | | | | | | |
| FAMILY ASSESSMENT | | | | | | | | | | | | | | |
| ANTICIPATORY GUIDANCE | | | | | | | | | | | | | | |
| PHYSICAL EXAMINATION | | | | | | | | | | | | | | |
| PROCEDURES-GENERAL | | | | | | | | | | | | | | |
| PROCEDURES-PATIENTS AT RISK | | | | | | | | | | | | | | |
| DENTAL REFERRAL | | | | | | | | | | | | | | |

DRAFT

## Partnerships to Improve Quality of Preventive Care

Good quality care depends on the existence of effective systems of care that integrate the efforts of a variety of professionals

## Help Me Grow



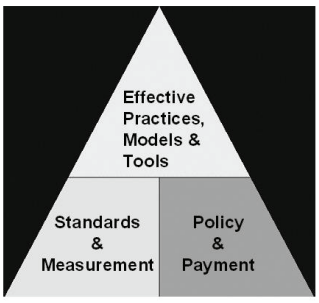

## Three First Core Changes In WCC

- **Tailor the content and frequency of WCC to the individual child and family**
- **Create health care teams that entail a new role for the pediatric provider (more time with kids with complex problems)**
- **Use new technologies to create new types of transactions between families and providers**

D. Bergman, 2006

## CDPC Program Strategies to Guide, Motivate, and Facilitate Change in Practice

- Identify and promote the adoption of effective and efficient practices, models and tools
- Promote adoption of quality standards and quality measurement
- Promote policy change and facilitate adequate reimbursement




Science → Service → Systems

## A Systems Approach to Promoting Children's Development: From *ChildServ* to *Help Me Grow*

**Paul H. Dworkin, MD**
***Society for Developmental and Behavioral Pediatrics***
**October 1, 2007**
**Providence, RI**

## GOALS

- Describe a *community-based approach* to enhancing developmental surveillance
  - ***ChildServ***
  - ***Help Me Grow***
- Derive implications for replication and dissemination of developmental programs
  - **program development**
  - **public policy**

## BACKGROUND *ChildServ*

- Longstanding interest in strengthening child health services
  - strengthening primary care services
  - enhancing developmental outcomes
- New opportunities in mid-1990's
  - national focus on readiness for school
  - *Healthy Steps for Young Children*
- Consideration of Hartford's needs and resources
  - Hartford Foundation for Public Giving *Brighter Futures* initiative

## ASSUMPTIONS *ChildServ*

- Children with developmental/behavioral problems are *eluding early detection*
- Many *initiatives* exist to provide services to young children, their families
- A *gap* exists between child health and child development/early childhood education programs
- Children and their families would benefit from a *coordinated, region-wide system* of early detection, intervention for children at-risk

## CAVEAT
*ChildServ*

- Detection without referral/intervention is ineffective and may be judged unethical

  (Perrin E. Ethical questions about screening. *J Dev Behav Pediatr* 1998;19:350-352)

## PLANNING PARTNERS
*ChildServ*

- Hartford Foundation for Public Giving (HFPG) *Brighter Futures* initiative
- Hartford City Health Department
  - *Child Development Program* (CDP)
- Region's child health providers
  - Community health centers
- Children's Health Council
  - *Children's Health Infoline*
- *Hartford Parents Network*
- CT Birth to Three System (Part C)

Connecticut Birth to Three System

CHILDREN'S HEALTH COUNCIL
Connecticut
CHILDREN'S HEALTH PROJECT

## COMPONENTS
*ChildServ* (1998)

- Training child health providers in effective *developmental surveillance*
- Creating a *resource inventory* of community-based programs supporting children's development and families
- Developing a *referral and monitoring system* to link young children and their families with early childhood services and support
- Performing *data collection* and analyses of children's developmental status and regional resources

## DEVELOPMENTAL SURVEILLANCE

- "…a flexible, continuous process in which knowledgeable professionals perform skilled observations of children during child health care."
- Components
  - eliciting/attending to *parents' concerns*
    - parent-completed questionnaires
  - obtaining a relevant *developmental history*
  - skillfully *observing* children's development
    - professionally-administered tests
  - sharing opinions with other *professionals*
- *EPIC* (Educating Providers in their Communities)

RESOURCE INVENTORY OF SERVICES
*ChildServ*

- Primary and specialty *medical care*
- Early childhood *education* (*child care*)
- *Developmental disabilities* services
  - assessment
  - intervention
- *Mental health*
- Family and social *support* (home-, center-based)
- *Child advocacy*/legal services

Triage and Referral System

*ChildServ*

1-888-74CHILD

*ChildServ*- The Process
Scenario 1: Clear Concerns, No Obstacles

Child Health Provider
↓
Language/Behavior/Parenting Concerns
↓
*ChildServ*
↓
Referrals: Developmental/Language Eval; Play and Support Groups
↓
Two Week Follow-Up Contact: Enrolled
↓
Feedback to Child Health Provider

*ChildServ*- The Process
Scenario 2: Same Family, Limited Access

*ChildServ*
↓
CDP Referral for Outreach
↓
Referrals as Above: CDP Delivers Information
↓
Two Week Follow-up by CDP
↓
Feedback to Child Health Provider

## *ChildServ*- The Process Scenario 3: Unclear Problem

Child Health Provider
↓
Minor Gross and Fine Motor Concerns
↓
*ChildServ*
↓
ChildServ Coordinator/Child Development Program
↓
Referral to Therapeutic Playgroup and PT/OT
↓
Two Week Follow-up: Enrolled in Programs
↓
Feedback to Child Health Provider

## *ChildServ*- The Process Scenario 4: Significant Delays

Child Health Provider
↓
Motor Delays and Hearing Loss with a History of Prematurity and Low Birth Weight
↓
*Birth to Three* Referral

## EXPERIENCE *ChildServ*

- 155 children referred during first year of operation; 306 over 2 years, 500 over 3 years
  - >80% *preschool* age or younger
- Majority of referrals (68%) for *single need*
  - *parenting assistance/support*
  - *developmental* assessment
  - *speech/language* assessment/services
- 67% of referrals to services at *no cost* to either family or health plan
- Extensive *outreach* required to ensure access to services and programs

## EXPERIENCE (Continued) *ChildServ*

- 41-64% of referred children receiving services at follow-up
  - 15-18% chose not to pursue recommended services
  - 17-30% not available for follow-up
- 84-90% of child health providers familiar with *ChildServ*
  - 90% received *ChildServ* training
  - 68-73% made at least 1 referral
  - 59-67% satisfied, 29-36% somewhat satisfied with program activities

## LESSONS LEARNED
### *ChildServ*

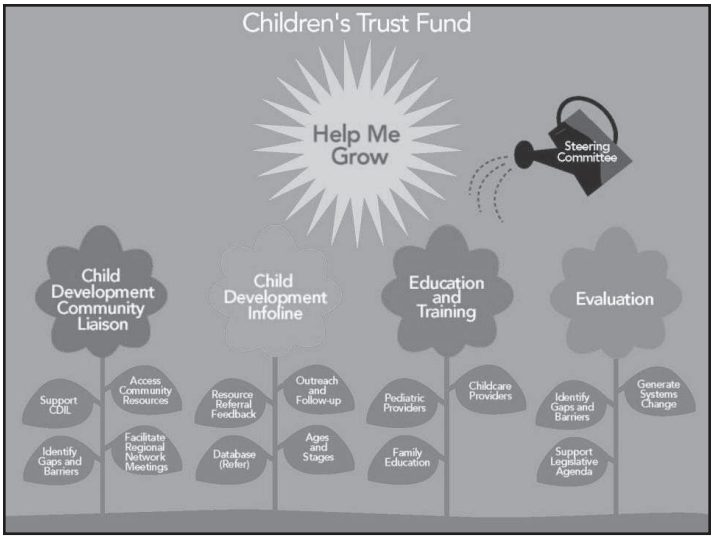
- Advocacy opportunities
  - *Enhancement*-not expansion-of *Birth to Three, Preschool Special Education, Children with Special Health Care Needs*
    - focus on *at-risk* children
    - single point of entry
  - Primary and secondary prevention of *emotional problems*
    - frequency of behavioral concerns
    - *Connecticut Community KidCare* initiative
  - Strengthening of *outreach and care coordination* activities
    - need for extensive outreach to link children to services
    - lack of effectiveness of "administrative" MCO outreach

## NEXT STEPS
### *Help Me Grow*

- *Goal*
  - to help pediatric professionals, parents, and child care providers identify and support at risk children with developmental and behavioral concerns
- *Target Population*
  - at-risk children (birth through 5 years) who are not eligible for *Birth to 3, Preschool Special Education, or Children with Special Health Care Needs* programs and services

## *Help Me Grow*

- A program of t*he Children's Trust Fund*
- Continue to serve Hartford area; expansion to New Haven, Waterbury; and statewide by July 2002
- Partners: *Birth to 3* (DMR), *Preschool Special Education* (DOE), *Children with Special Health Care Needs* (DPH), *United Way/Infoline*
- Support: *The Commonwealth Fund; Child Health and Development Institute of Connecticut; State Chapter of AAP*



*CONNECTICUT CHILD DEVELOPMENT INFOLINE*
1-800-505-7000

- Gateway to help and referrals for child health professionals, parents, and providers of services to children
- Link to developmental services
  - *Help Me Grow*
    - *extensive database of programs and services*
  - *The Connecticut Birth to Three System*
  - *Preschool Special Education programs*
  - *Children with Special Health Care Needs*
- State model of national significance

## *Help Me Grow*

Over 2,000 referrals to programs/services each year since January 2002
- Calls from each of 169 cities and towns

- Most frequent service requests
  - Early intervention
  - Special Education
  - Ages & Stages (ASQ)
  - Family Resource Centers
  - Specialized Information & Referral
  - Parenting Education
  - Mental Health Evaluation
  - Developmental Assessment

## *Help Me Grow* Academic Detailing

- **Evaluation of effectiveness**
  - increased identification of developmental and behavioral concerns
  - increased referral rate to *CDI*
    - older children
    - behavioral concerns
- **Promotion of *CPT* codes**
  - 96110-Developmental testing, limited, with interpretation and report
  - 99205-Developmental evaluation, new patient, 1 hour
  - 99214-Developmental evaluation, established patient, 25 minutes

## HMG AGES & STAGES MONITORING PROGRAM

- Use of valid, reliable parent-completed questionnaire to elicit opinions, concerns
- 2006: 2,200 families participated
  - 63% increase since 2002
- Opportunity for statewide expansion
  - Distribute Ages & Stages Child Development Kits at 4 month well-child visit
  - Train parents, child health providers
    - Developmental screening
    - Developmental promotion
  - Enhance care coordination
  - Update database of programs and services

## SUMMARY

- Children, families at risk for adverse developmental outcomes require outreach and support
  - key role of community-based programs and services
- Anticipate need for parenting support in planning developmental services
- Importance of critical evaluation of effectiveness of new models
  - developmental outcomes
  - cost effectiveness
- System reform enhances service delivery

## BIBLIOGRAPHY


- Dworkin PH, Bogin J, eds. *Help Me Grow* Roundtable. Promoting Development through Child Health Services. *J Dev Behav Pediatr* 2006;27:Supplement.
- Dworkin PH, Glascoe FP: Early detection of developmental delays. *Contemp Pediatr* 1997;14:158-168.
- Glascoe FP, Dworkin PH: The role of parents in the detection of developmental and behavioral problems. *Pediatrics* 1995;95:829-836.
- McKay K, Shannon A, Vater S, Dworkin PH: *ChildServ*: Lessons learned from the design and implementation of a community-based developmental surveillance program. *Infants and Young Children* 2006; 19:371-377.
- Squires J, Nickel RE, Eisert D: Early detection of developmental problems: strategies for monitoring young children in the practice setting. *J Dev Behav Pediatr* 1996; 17:420-427.

Maternal and Child Health Bureau

**Society for Developmental and Behavioral Pediatrics**

## Systems Change Approaches for Improving Services for Children with or at Risk of Developing Special Needs

**October, 2007**

**Diana Denboba**
U.S. Department of Health and Human Services (HHS)
Health Resources and Services Administration (HRSA)
Maternal and Child Health Bureau
Division of Services for Children with Special Health Needs

U.S. Department of Health and Human Services
HRSA
Health Resources and Services Administration

Maternal and Child Health Bureau

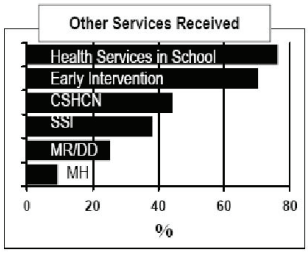
## Who are the Children and Youth?

- "Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."

Maternal and Child Health Bureau

## Why a Systems Change Approach?

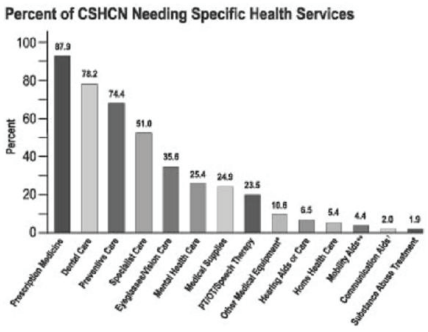
**"Caregiver Voices"**
**THE FAMILY PARTNERS PROJECT:**
**Health Care Experiences Survey**




Family Voices, Inc./Brandeis University "Your Voice Counts" Survey

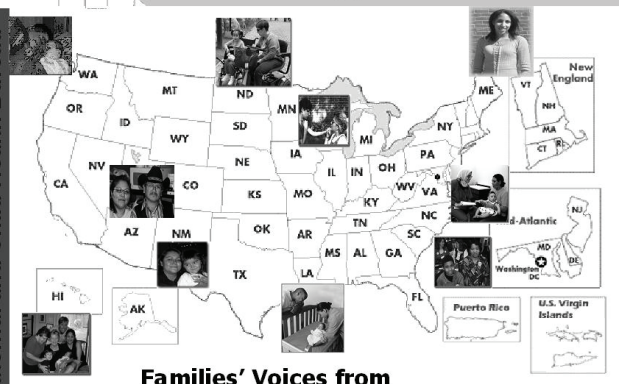
Maternal and Child Health Bureau

## Why a Systems Change Approach?



## Why a Systems Change Approach?

Maternal and Child Health Bureau




**Families' Voices from across the country. . .**

## Why a Systems Change Approach?

Maternal and Child Health Bureau

- 47% spent one to four hours coordinating care, and 26% spent five or more hours coordinating their children's care.
- Of children seen by specialty doctors, 23% had problems such as getting appointments; finding specialists with necessary skills and experience; and/or being denied payment for specialty doctor visits.

Family Voices, Inc./Brandeis University "Your Voice Counts" Survey

## Why a Systems Change Approach?

Maternal and Child Health Bureau

- Families also said they were dissatisfied with, or needed but did not get: respite services (46%); nutritional supplements (38%); durable medical equipment (31%); disposable medical supplies (26%); dental care (18%).
- *"Families face a confusing maze of services from health plans, school systems, state agencies and private agencies that are not well coordinated."*

Family Voices, Inc./Brandeis University "Your Voice Counts" Survey

## Why a Systems Change Approach?

Maternal and Child Health Bureau

- 2001 National Survey for CSHCN
  - Only 75% families report services are easy to use; more than 33% of Hispanics and blacks report they are NOT easy to use
  - 18% report at least one unmet need
  - 33% report no family-centered care
  - 13.5 % more than 11 hrs. providing/ coordinating care
  - Navigation is more difficult for complex medical needs, minority populations

## Mandates for the System

Maternal and Child Health Bureau

- Amended Legislation for Title V of the Social Security Act (1989):
  - "Facilitate the development of family-centered, community-based, coordinated systems of services"
- Healthy People 2010 Objective 16-23
  - "Increase the proportion of States and territories that have service systems for children with special health care needs."
- The President's New Freedom Initiative (2001)
  - Responsibility given to HRSA for developing and implementing a community-based service system for children and youth with special health care needs and their families.

## Why a Systems Change Approach?

Maternal and Child Health Bureau

- Typically, services for CYSHCN have been described as segmented, fragmented, and often ineffective.
- Reasons for these problems have been attributed to categorical funding streams, service delivery provided by a myriad of agencies, prohibitive location and time constraints, and competing agency or government requirements (Talley & Schrag, 1999).

Champions For Inclusive Communities National Center

## What Is A System?

Maternal and Child Health Bureau

1. Families as Partners in Decision Making
2. Access to Medical Home
3. Early and Continuous Screening
4. Access to Adequate Insurance
5. Community Systems Easy to Use Families Satisfied
6. Youth Transition to Adulthood

## Integrated Community Systems Program

Maternal and Child Health Bureau

- Integrated systems refers to:
  - the design of a system of care that is efficient in its use of resources while organizing services so families can use them easily'
  - efforts that occur at the family level via care coordination, and
  - efforts at the systems level, such as coordinated service plans, pooled funding, community councils, and shared data systems.

To be successful, integrated systems must be community driven with support from state-level counterparts as well as citizens and private entities.

## Integrated Community Systems Program

Maternal and Child Health Bureau

- To support states and community development activities that enhance capacity to address service integration issues of CYSHCN and their families so that services are organized in ways that families can use them easily (system) and be satisfied with services they receive.

## Integrated Community Systems Program

Maternal and Child Health Bureau

- **1 National Center: Champions For Inclusive Communities (UT)**
- **18 State Implementation Grants**
  - State level agency collaboration
  - Participatory Action Research (PAR) approach-families & stakeholders from the beginning
  - Incorporate practices & policies of family-centered care, family/professional partnerships and cultural/linguistic competence

## Currently Funded State Implementation Grants

Maternal and Child Health Bureau

Oklahoma will be presenting

NN- Navajo Nation

## State Implementation Grantees

Maternal and Child Health Bureau

- This program replaces previous initiatives which addressed each of these systems components separately. Grantees must:
  - Be, or work closely with, the State Title V Program for Children with Special Health Care Needs,
  - Have a complete and current statewide needs assessment that addresses the State's status in each of the 6 systems components,
  - Implement a specific plan to incorporate each of these components into an integrated system of services state-wide,
  - Engage multiple public and private agencies and families in the design and implementation,

## State Implementation Grantees

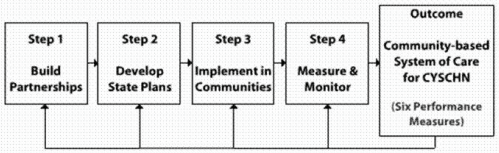
Maternal and Child Health Bureau

- Grantees must:
  - Promote family/professional partnerships and community planning/governance and leadership as strategies in systems building,
  - Define a comprehensive evaluation plan using national, state, and community data,
  - Integrate the plan into the Title V Block Grant and other public/private programs serving CSHCN and their families, and
  - Provide assurances that data and evaluation results are shared with the State Title V Program for Children with Special Health Care Needs.

## State Implementation Grantees

Maternal and Child Health Bureau

### How to Make it Happen




## Web-sites/Contact

Maternal and Child Health Bureau

- **www.mchb.hrsa.gov**
- **www.championsforprogress.org**
- **www.cshcndata.org**

- **Lynda Honberg, Program Director 301-443-2370; LHonberg@hrsa.gov**
- **Diana Denboba, Acting Branch Chief 301-443-9332; DDenboba@hrsa.gov**

# *Sooner SUCCESS:*

## A Systems Approach to Integrating and Improving Services for CYSHCN

*Mark Wolraich, M.D.*
*CMRI/Shaun Walters Professor of Pediatrics*
*OU Child Study Center*

October, 2007

### *Longstanding Need to Address Fragmented, Compartmentalized Service Delivery*

- 1979: Surgeon General's National Agenda - Calling for a System that is –family-centered –community-based – continuous – comprehensive
- 1980-Present: AAP promotes Medical Home –accessible – family-centered –continuous – comprehensive – coordinated –compassionate –culturally effective
- Mid-1980s: Education of Handicapped Act (now IDEA) Reauthorized – Infant/Toddler Program that centers on family
- 1989: Title V of the Social Security Act –translated the National Agenda into legislation to "provide family-centered, community-based, coordinated care for CYSHCN
- 2000: Families of Children with Disabilities Support Act –comprehensive State system of family support services ...family-centered...including interagency coordination...increased access
- 2000: Healthy People 2010 - with outcome measures for CYSHCN
- Systems of Care – coordinated network of community-based services

### *Continuing Today Families:*

- *often need multiple services from multiple providers*
- *are frequently the only"coordinator"of their children's numerous services*
- *Can't locate needed services in their community*
- *must travel to several agencies while struggling with unreliable transportation, child care, illness and other challenges*

### *Continuing Today Providers & Services*

- *managed independently through different sets of eligibility criteria*
- *often do not have the time or the experience to help families connect with other community resources*
- *are fragmented because the population is fragmented*
- *lack of comprehensive system fosters this fragmentation, issue specific approach*

Achieving Success for All Children and Youth with Special Health Care Needs: A 10-Year Action Plan to Accompany Health People 2010" (2001)

### *Describes a Complex Adaptive System:*

- *"… a collection of individual agents with freedom to act in ways that are not always predicable, and whose actions are interconnected so that one agent's actions changes the context for other agents."*

Matlow, A., Wright, J., Zimmerman, B., Thomson, K., Valente, M. 2006. How can the principles of complexity science be applied to improve the coordination of care for complex pediatric patients? *Quality Safe Health Care; 15:85-88. doi: 10.1136/qshc.*

### *Complexity Science Principles*

- Provide minimum specifications rather than planning every detail
- Foster the right degree of information flow, connectivity, diversity, and difference
- Allow complex systems to emerge out of the links among systems that work well and are capable of operating independently
- Balance data and intuition, planning and acting, safety and risk

Matlow, et al

### *Families, Providers & the System need and want the same basic things:*

Comprehensive integrated system of ongoing services and supports that allow families and their children to live, learn, play, work and build relationships in the community of their choice

*Begs for an interconnected response from system planners at all levels*

Sooner SUCCESS
Child Study Center Program

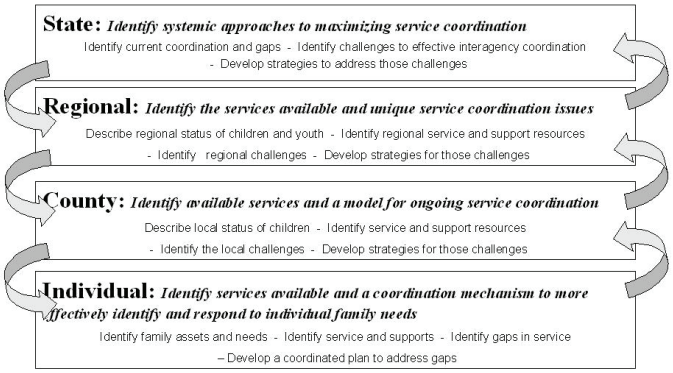
### *Began early in 2002*

- **Interagency, Interdisciplinary Workgroup**
  - ***Families***
  - ***Mid to Upper Level State Agency Managers***
  - ***Advocates***
  - ***Technical Advisors (Ed Schor & Henry Ireys)***
- ***Discussed how Oklahoma should respond***
  - ***Lack of Coordination***
  - ***Service Gaps***
  - ***National Agenda for Children & Youth with Special Health Care Needs***
  - ***Healthy People 2010 Goals***

Sooner SUCCESS
Child Study Center Program

- Networks…
  - with Families, Advocates & State Departments of Education, Health, Human Services, Mental Health, Rehabilitation Services, Health Care Authority
  - using a multi-tiered approach:

Sooner SUCCESS
Child Study Center Program




Sooner SUCCESS
Child Study Center Program

- Involves Families at All Levels
  - On original planning workgroup
  - On State Coordinating Council
  - As paid staff members
  - As Core Family Members to represent the family perspective on county coalitions
  - On Short-term planning subcommittees
- Supports Families & Motivates Change
  - Intermittent Focused Care Coordination
  - As respondents to program evaluation measurement

Sooner SUCCESS
Child Study Center Program

- Developed local county coalitions of parents of children with special needs and the key community players serving those children
- Developed regional coalitions to address issues regional in nature
- Connected those coalitions with state agencies and other key stakeholders for broader issues requiring state level actions.

Sooner SUCCESS
Child Study Center Program

- **Intermittent Focused Care Coordination**
  - County Coordinators help families navigate the service systems to find and coordinate the services their child needs
  - County Coordinators help providers locate services outside their agencies for their clients

Sooner SUCCESS
Child Study Center Program

- **Intermittent Focused Care Coordination**
  - helps its county coalitions understand the strengths and gaps in their services
  - motivates them to make change by putting them in the parents' shoes
  - provides coordination across agencies locally and between local, state and national entities.

Sooner SUCCESS
Child Study Center Program

**Region One** (approximately 7% of states population)
**November, 2003–June 30, 2007**
*Number of families served and service categories involved.*

| Families Served | Mental Health | Educ. | Social Service | Health | Other* |
|---|---|---|---|---|---|
| **927** | **23%** | **19%** | **16%** | **14%** | **28%** |

**Region Two** (approximately 19% of states population)
**March, 2006 – June 30, 2007**
*Number of families served and service categories involved.*

| Families Served | Mental Health | Educ. | Social Service | Health | Other** |
|---|---|---|---|---|---|
| **304** | **16%** | **16%** | **48%** | **20%** | |

* transportation, housing, financial, etc.
** recent changes in data collection allows us to categorize all services into one of the four basic areas

Sooner SUCCESS
Child Study Center Program

- Accomplishments – Intermittent Focused Care Coordination
  - Ongoing resource identification for caregiver grandmother of a 10 year old with quadriplegia and cognitive disability … helped with locating support for utilities, food, respite, IEP advocacy, transportation to health care and auto repair
  - Facilitated broad array of community members to retrofit a home bathroom making it accessible for a 8 year old with spina bifida

Sooner SUCCESS
Child Study Center Program

- Accomplishments - Local Capacity Development
  - A school nurse and Department of Human Services School-Based Services Worker were placed in Fairview Schools as a result of the Major County Coordinator's efforts.
  - A dialysis center is being planned for Watonga and a Youth Recreation Center is open several nights a week due to the efforts of the Blaine County Coordinator and the Coalition.

Sooner SUCCESS
Child Study Center Program

## Funding

| | |
|---|---|
| 2002 – *Summer* | Oklahoma Dept. Human Services (OKDHS) Title V, Children and Youth with Special Health Care Needs Program |
| 2003 – *Summer* | Oklahoma Developmental Disabilities Council |
| 2004 – *Spring* | Oklahoma Health Care Authority (Medicaid) |
| 2005 – *Summer* | MCHB State Implementation Grant: Integrated Community Systems for Children and Youth with Special Health Care Needs |
| 2006 – *Summer* | Oklahoma State Department of Education, Special Education Services and OKDHS Developmental Disabilities Services Division |
| 2007 – *Spring* | Oklahoma State Legislature Appropriation |

Sooner SUCCESS
Child Study Center Program

***Where are we now?***

- **Six County Pilot Region**
  ***Blaine, Canadian, Garfield, Kingfisher, Logan, Major***
- **Replication in an Urban Region**
  ***Creek, Rogers, Tulsa***
- **Project Two New Counties this Year**
- **County Coordinators**
- **Local Coalitions**
- **Regional Coordinators**
- **Regional Councils**
- **State Interagency Council**
- **Activities in Six 2010 Goal Areas**
- **Working on Statewide Spread**

Sooner SUCCESS
Child Study Center Program

- Challenges:
  - Sustaining Funds
  - Maintaining Flexibility and Individuality Across Communities as Program Grows
  - Telling the Sooner SUCCESS Story Succinctly Enough for Key Stakeholder to Understand Quickly
  - Differentiating Program from Other Similarly Named State Programs
  - Long Term Process – takes time negotiate the complexity of the system and its varied players and to implement the program in local communities

SDBP
Society for Developmental & Behavioral Pediatrics

# 25th Anniversary Meeting

ABSTRACTS

## Scientific Presentations


**PAGE**
**Plenary Session I**
Sunday, September 30, 2007
9:15 am – 10:30 am
***Abstracts 1-5***

**PAGE**
**Plenary Session II**
Monday, October 1, 2007
8:30 am - 9:45 am
***Abstracts 6-10***

**PAGE**
**Plenary Session III**
Monday, October 1, 2007
9:45 am - 11:00 am
***Abstracts 11-15***

**PAGE**
**Poster/Board Assignments**

**PAGE**
**Poster Presentation**
Sunday, September 30
6:00-7:00 pm

# Plenary Session Abstracts

## Plenary Session 1

**Sunday, September 30, 2007 from 9:15 AM – 10:30 AM**

### Abstract 1

**Language & Behavior: Impact of Degree of Hearing Loss and Very Early Early Intervention**

Betty R. Vohr, Pediatrics, Brown Medical School and Women & Infants' Hospital, Providence, RI, Julie A. Jodoin-Krauzyk, Richard Tucker, Pediatrics, Women & Infants' Hospital, Providence, RI, Deborah Topol, Linguistics, Mary Jane Johnson, Early Intervention, Rhode Island School for the Deaf, Providence, RI

Purpose: Children with permanent hearing loss and controls born between 10/15/02 and 1/31/05 were enrolled in a prospective study of child language and behavior outcomes. The objective was to determine the language and behavior outcomes of children with minimal/mild hearing loss (unilateral or bilateral hearing loss < 40 dB) and moderate to profound hearing loss (bilateral hearing loss > 40 dB) compared to hearing control children at 12-16 and 18-24 months of age and to examine the effects of very early enrollment (< 3 months) in early intervention. Methods: Child language and behavior was assessed in 30 children with hearing loss and 96 controls. Eighteen children had moderate to profound hearing loss and 12 children had minimal/mild hearing loss. The MacArthur-Bates Communicative Development Inventory: Words & Gestures was administered at 12-16 months of age. The MacArthur-Bates Communicative Development Inventory: Words & Sentences and Achenbachs Child Behavior Checklist were administered to mothers at the 18-24 month assessment. Results: The children in the moderate to profound hearing loss group had lower scores for phrases understood, early gestures, late gestures, total gestures, and words produced, compared to the children with minimal/mild hearing loss and control children. In addition, children with hearing loss enrolled in early intervention < 3 months versus > 3 months had a significantly greater number of phrases understood, words understood, and words produced. Regression models to test the effects of age of entrance into early intervention on language for children with hearing loss identified moderate to profound hearing loss and early intervention < 3 months as independent predictors of words produced. Furthermore, at 18-24 months of age, the children in the moderate to profound hearing loss group had significantly higher anxious/depressed and attention scores compared to the controls. Conclusion: Findings indicate the value of very early enrollment into early intervention for children with hearing loss; the potential for children with minimal/mild hearing loss to parallel their hearing peers in language and behavior development given appropriate intervention; and the continued need for comprehensive services for children with moderate to profound hearing loss in the first two years of life. Discussion will include a complete description of demographics, maternal and child characteristics, language and behavior outcomes, and regression analyses to predict language and behavior at both assessment periods.

### Abstract 2

**The Association of SES, Cognitive Abilities, and Language Skills at 3 and 4 years of age and Reading Skills at 9-12 years of age**

Jason D. Yeatman, Irene M. Loe, Heidi M. Feldman, Pediatrics, Stanford University, Palo Alto, CA

Purpose: Longitudinal studies show an association between SES, cognitive abilities, and language skills in the preschool years and reading skills at school age. However, this literacy research is often limited by small sample sizes, restricted predictor measures, and short time intervals between prediction and outcomes. The primary objective of this study was to quantify the contribution of a variety of sociodemographic factors and child abilities assessed during preschool on reading abilities in late elementary school in a large, diverse sample of children. Methods: Subjects came from a prospective longitudinal study on child development and otitis media (N=741). At ages 3 and 4 years, children were administered the Peabody Picture Vocabulary Test (PPVT) and McCarthy Scales of Childrens Abilities (MSCA). Conversations between children and parents were scored for Number of Different Word used (NDW), Mean Length of Utterance in morphemes (MLUm), and Percent of Consonants Correct-Revised (PCC-R). Maternal education and race were used as measures of SES. At ages 9 to 12 years, reading abilities were assessed using the Woodcock Test of Reading Mastery. Factors that were significant on univariate correlations were used to create multiple regression models to predict Total Reading (decoding plus comprehension). Results: The models using measures at age 3 and at 4 were able to predict 32% and 37% respectively of the variance in reading ability. The table below shows the beta values and significance of factors that contributed to the overall model. (The * indicates factors that did not contribute positively). Conclusion: Cognitive abilities and language skills in preschool were highly associated with reading skills at school age. SES did not contribute substantially after scores from these domains were included in the models. MSCA Perceptual Indices at ages 3 and 4 were more highly associated with later reading scores than were language measures.

| Variable | Age 3 | | Age4 | |
|---|---|---|---|---|
| | Beta | P | Beta | P |
| Maternal Education | .058 | .101 | .025 | .458 |
| Race | -.059 | .127 | -.073 | .047 |
| MSCA Perceptual Index | .192 | .000 | .194 | .000 |
| MSCA Verbal | .094 | .048 | .150 | .001 |
| MSCA Quantitative | * | * | .153 | .000 |
| PPVT | .108 | .038 | .101 | .051 |
| NDW | .113 | .005 | * | * |
| MLUm | * | * | .137 | .000 |
| PCC-R | .174 | .000 | * | * |

## Abstract 3

**The Efficacy of Melatonin Treatment for Sleep Problems in Children with Autism and Fragile X Syndrome.**

Juthamas Wirojanan, Sabastian Jacquemont, Beth Goodlin-Jones, Rafael Diaz, Thomas F. Anders, Randi J. Hagerman, M.I.N.D. Institute, University of California Davis, Sacramento, California

Purpose: To determine the efficacy of melatonin treatment for sleep problems in children with autism and fragile X syndrome (FXS). Methods: A 4-week randomized, double blind, placebo-controlled crossover design was conducted following a 1 week baseline period. Either melatonin 3 mg or placebo was given to participants for a two week trial and then they crossed over for an additional 2 weeks. Sleep variables including sleep onset time, total night sleep duration, sleep latency and number of night awakening were recorded by actigraphy. Sleep diaries were completed by parents. All participants had been thoroughly assessed for autism spectrum disorder (ASD) and also had DNA testing for diagnosis of FXS. Results: Data from 12 out of 18 participants was successfully obtained throughout the study (11 males, age range 2 to 15.25 years, mean 5.47). Eight of those had melatonin first. Five participants without FXS met diagnostic criteria for ASD, three had diagnosis of FXS alone, another three had FXS with ASD and one had the fragile X premutation without ASD. Ten of 12 participants improved their sleep duration on melatonin compared with placebo ($p = 0.012$). Sleep onset was earlier and sleep latency was shorter during treatment than placebo in nine participants (ns). Number of awakening at night decreased on melatonin in seven patients (ns). For the group, on melatonin compared to placebo, mean sleep duration was longer (8: 15 hr, SD 1: 15 versus 7: 53 hr, SD 1: 07, $p = 0.057$) and mean sleep onset was earlier (20: 44 hr, SD 1: 39 versus 21: 21 hr, SD 1: 55, $p = 0.028$). Although mean sleep latency was shorter and number of awakening was less during treatment than placebo, the difference was not significant. No side effects were reported with melatonin treatment. Conclusion: The results of this study support the efficacy and tolerability of melatonin treatment on sleep problems of children with ASD and FXS.

## Abstract 4

**Characterization of Autistic Symptoms in Children diagnosed with Autism Spectrum Disorder before age 2**

Lisa H. Shulman, Pediatrics, Albert Einstein College of Medicine, Bronx, NY, Sabrina J. Goodman, Psychology, Fordham University, Hewlett, NY, Maria D. Valicenti-McDermott, Rosa M. Seijo, Deborah J. Meringolo, Pediatrics, Albert Einstein College of Medicine, Bronx, NY

Purpose: By definition, the onset of Autism Spectrum Disorders (ASD) is before age 3. Despite increasing evidence that children can be diagnosed by age 2, few studies have focused on the nature of symptoms in very young children. Understanding the ways young children present with ASD is important as we strive to identify these children as early as possible, to initiate early treatment that can optimize long-term prognosis. Methods: Retrospective chart review of 53 children, ages 1 to 3 presenting to a University Affiliated Program for initial multidisciplinary evaluation from 2003 to 2005, who received a diagnosis of ASD. Data included demographics, chief complaints, DSM-IV-TR symptom checklist, Childhood Autism Rating Scale (CARS), Autism Diagnostic Observation Schedule (ADOS), and the Bayley Scales. Statistical analysis included Chi-square, T test, Mann Whitney test and logistic regression. Results: Of the 53, 23 were under 24 months (age range 14-36). Children under 2 were more likely to be referred due to behavioral concerns (55% vs 14% $p=0.009$). On the DSM-IV, children under 2 were more likely to show a lack of shared enjoyment (87% vs 48% $p=0.007$)and preoccupation with parts of objects (68% vs 33% $p=0.01$)and less likely to present stereotyped language(9% vs 53% $p=0.001$) and inflexible adherence to nonfunctional routines (14% vs 50% $p=0.008$). These differences (except preoccupation with parts) persisted after adjusting for level of maternal education, socioeconomic status and cognitive level.On the CARS children under 2 had

lower scores (less difficulty) on the subscale "adaptation to change" (1.8 ± 0.8 vs 2.4 ± 0.8 p=0.01) and "consistency of intellectual response" ( 2.2 ± 0.4 vs 2.6 ± 0.5 p=0.006). On the ADOS children younger than 2 were more likely to meet criteria for autism as opposed to ASD than older children (91 % vs 55% p=0.01) but there were no differences in the 4 subscales. Conclusion: Parents of children with ASD diagnosed before age 2 are more concerned about behavioral issues as opposed to language or the possibility of autism than parents of children diagnosed at an older age. Clinically, young children are more likely to lack shared enjoyment while older children are more rigid and present with more stereotyped language and splinter skills.

Abstract 5

**Cultural influences on Health Care Use: perceptions of unmet needs and expectations by Latino and Euro-American parents of children with special health care needs**

Mary E. Gannotti, Physical Therapy, University of Hartford, West Hartford, Connecticut, Lawrence C. Kaplan, Pediatrics, Dartmouth Medical School, Lebanon, New Hampshire

Purpose: To examine disparities in health status of Latino children with special health care needs we compared Latino (LF) and Euro-American families'(EAF) utilization of services, perceptions of unmet needs, expectations of health care providers, and the contribution of cultural values and beliefs in choosing services. Methods: Structured and semi-structured interviews were conducted with 42 Latino families from communities served by a State Title-V (CSHCN) program. Each family was matched with a Euro-American family for per capita household income, age of child, severity and category of disability. 20 families from each group were interviewed by a fluent Spanish speaker, and these data were analyzed for content. All study and control families underwent a semi-structured interview to create a structured survey which focused on eight categories of potential unmet needs. Results: LF cited unmet needs in health care, rehabilitation therapy, and information and support. EAF cited unmet needs in day care, respite services, recreational programs, and home health aides. EAF expected well trained home health aides; LF had never considered this resource. EAF expected better access to respite and day-care; LF did not. EAF saw it as their responsibility to initiate contact with providers; LF believed this was the professionals'role. LF felt they should not be the final decision-makers in their children's care, EAF believed they should be.LF felt it was inappropriate to confront professionals over health care issues; EAF saw this as often necessary. Conclusion: Latino cultural values play an important role in how families perceive and utilize services for children with special health care needs. Understanding these values can facilitate culturally sensitive care; not understanding them can contribute to the barriers that prevent effective communication and care.

## Plenary Session 2

**Monday, October 1, 2007 from 8:30 AM - 9:45 AM**

Abstract 6

**Impact of Media Exposure and Content on Later ADHD Related Symptoms**

Purnima T. Valdez, Pediatrics, Weill Medical College of Cornell University, New York, NY, Emily K. Forrest, Benard P. Dreyer, Suzy Tomopoulos, Alison B. Smoller, Alan M. Mendelsohn, Pediatrics, NYU School of Medicine, New York, NY

Purpose: To determine whether preschool media exposure is associated with ADHD related symptoms as children enter elementary school. Methods: Prospective study, with enrollment of low education Latino mother-infant dyads, and assessment of media exposure at 21 and 33 mos (24 hr media diary) and ADHD related symptoms (sx) at age 5-7 yrs. Each program was characterized as educational young-child oriented, non-educational young-child oriented (e.g. cartoons), school-age/teen oriented (e.g. violent content), adult oriented (e.g. soap operas), or unknown based on industry ratings, with average exposure calculated. ADHD related sx were assessed using the NICHQ Vanderbilt Assessment Scale (with total positive sx summed to derive a score) and with the Child Behavior Checklist (CBCL). Results: Of 73 dyads receiving a media assessment at both 21 and 33 mos, 55 were assessed for ADHD related symptoms at age 5-7. Average media exposure was 126.4(87.3) min. School-age/teen media (10.1% of exposure) was associated with increased parent Vanderbilt ADHD sx (r=.29, p=.03), and increased CBCL Attention Problems (AP) (r=.30, p=.03) and ADHD Problems (r=.32, p=.02). In multiple regression analyses adjusting for maternal depressive sx, difficult child temperament, education, country of origin, and gender, school age/teen media continued to be associated with Vanderbilt sx (sr=.32, p=.02) and CBCL AP (sr=.31, p=.02) and ADHD Problems (sr=.35, p=.009). No associations were seen for other categories of media or other behavioral outcomes. Conclusion: This is the only study to our knowledge that has assessed the relationship of specific media content in young children to school-age ADHD sx. ADHD sx were related to exposure to programs with ratings that reflected inappropriate content for young children. Continued attention by policymakers to young children_s exposure to media with potentially harmful content is indicated. Supported by: SDBP Research Grant Award 2005 and Children of Bellevue, Inc.

# Plenary Session Abstracts

## Abstract 7

**The Effect of Caregiving on Attention in Institutionalized and Previously Institutionalized Children.**

Persephone Jones, Noelle L. Huntington, Charles A. Nelson, Children's Hospital Boston, Harvard Medical School, Boston, MA

Purpose: Children raised in institutions have an increased risk of behavioral concerns including attentional difficulties. Many of these behavioral difficulties are thought to be related to the reduced quality of their caregiving environments. This study investigates the relationship between caregiving and attention in children who are currently institutionalized, formerly institutionalized, or never institutionalized. Methods: Data are from the Bucharest Early Intervention Project, an ongoing randomized controlled trial of foster placement. There were 136 institutionalized children ages 6 to 32 months at entry into the study. 68 remained in an institution (IG), and 68 were assigned to foster care (FCG). 72 never-institutionalized children served as controls (NIG). Caregiver quality was measured at 42 months with the Observational Record of the Caregiving Environment (ORCE). Attention was measured using the Infant-Toddler Social and Emotional Assessment (ITSEA) at 42 months and the Preschool Age Psychiatric Assessment (PAPA) at 54 months. Results: Caregiver quality scores were lower in the IG than in the FCG or NIG, with no differences between the FCG and NIG ($p<0.05$). The ITSEA and PAPA measures of attention both showed the same pattern with the NIG earning significantly better attention scores and no differences found between the FCG and IG ($p<0.01$ and $p<0.05$). In other words, though the foster care group received caregiving equal in quality to the never-institutionalized group, their attention scores were similar to the institutionalized group. Conclusion: While not directly tested here, the results suggest the potential impact of early caregiving experiences on later attention. Future research should investigate the relationship between early caregiving and later attention, as well as whether attention is influenced by the age at placement into foster care or the amount of time spent in foster care.

## Abstract 8

**Relationship Between Childhood Internalizing Symptoms and Feeding Problems**

Kristoffer S. Berlin, Department of Psychiatry and Human Behavior, Brown Medical School, Providence, RI, Debra J. Lobato, Department of Child and Adolescent Psychiatry, Brown Medical School/Rhode Island Hospital, Providence, RI, Kathryn S. Holman, Psychology, University of Wisconsin-Milwaukee, Milwaukee, WI, Alan H. Silverman, Pediatrics, Medical College of Wisconsin, Milwaukee, WI, W. Hobart Davies, Psychology/Pediatrics, University of Wisc-Milwaukee/Medical College of Wisc, Milwaukee, WI

Purpose: Eating a nutritionally balanced diet is critical for the health and development of all children; unfortunately, there are complex interactions among many factors that impede the development of healthy eating habits. The prevalence rates of feeding problems are alarmingly high among children with typical development (25% to 45%) and developmental disabilities (85%). These feeding problems place children at risk for severe weight loss, malnutrition, lethargy, impaired development, growth retardation, and/or death. Anecdotally, it is known that children with feeding problems often present comorbid internalizing symptoms; however, there is scant empirical literature on the overlap of these disorders. Therefore, the goal of this study was to examine the relationship between feeding problems and internalizing symptoms; and if found, to identify potential mediators and moderators of this relationship. Methods: Community parents ($N = 224$) of children age 2 to 6 completed measures of feeding strategies, feeding problems, family mealtime environment, and internalizing symptoms. Results: A significant relationship between internalizing symptoms and feeding problems ($p < .01$) that was moderated (buffered) by increased parent age ($p < .01$) and mealtime structure ($p = .077$). A multiple mediator model was tested and found that internalizing symptoms were also related to child's cues of hunger/satiety, mealtime structure, and parent aversion to mealtime, which in turn, were related to mealtime behavior problems (all p's $< .01$ including indirect effects). Conclusion: A notable relationship exists between internalizing symptoms and mealtime behavior problems. This relationship lessens as parent_s age and mealtime structure increase. Preliminary mediation analyses suggest that possible mechanisms by which internalizing symptoms lead to feeding problems may include disruptions to a child's ability to attend to their cues of hunger/fullness, the mealtime structure provided by parents, and parents' reported aversion to mealtimes. These findings also highlight the importance of considering family-based conceptualizations and intervention strategies when working with children with feeding problems and internalizing symptoms.

# Plenary Session Abstracts

## Abstract 9

**Sleep in Hospitalized Children**

Julie Boergers, Psychiatry & Human Behavior, Judith A. Owens, Pediatrics, Brown Medical School, Providence, RI, Meredith Halsey, Brown University, Providence, RI, Darryl Etter, Rhode Island Hospital, Providence, RI

Purpose: Children with chronic or acute medical conditions are at risk for sleep disruption. Moreover, the hospital environment poses challenges to the maintenance of children's typical sleep patterns. However, surprisingly little is known about the sleep of hospitalized children. The purpose of this study was to examine the sleep patterns of hospitalized children in comparison to their home sleep patterns. Methods: Survey study with a convenience sample of children who spent 1-7 nights on non-intensive care units at a northeast children's hospital. Mothers (who stayed overnight with the subject at the hospital) reported on children's bedtime, wake time, time awake during the night, and total sleep time at home vs. in the hospital. Subjects were 86 children aged 3-12 (X=7.5 years; 57% male; 82% Caucasian). Results: Hospital sleep parameters did not differ by medication status (presence/absence of sedative), admission service (medical vs. surgical), or prior hospitalizations (presence/absence). A series of within-subject paired t-tests (with Bonferonni correction for multiple comparisons) indicated that subjects had significantly later bedtimes in the hospital than at home ($t=-7.04$, $p<.001$, mean difference=1.5 hrs) and achieved less nighttime sleep in the hospital than at home ($t=5.37$, $p<.001$, mean difference=1.6 hrs). Wake time and time awake during the night did not differ across settings. Conclusion: In this sample of preschool and school-aged children, bedtimes were significantly delayed and nighttime sleep was significantly decreased in the hospital as compared to subjects' typical sleep patterns at home. Because disturbed sleep is known to have a detrimental impact on multiple physiological systems, including the immune system, results could have important implications for children's recovery and healing. Future research with larger samples should examine sleep patterns in hospitalized children by diagnostic group. Potential interventions to improve the sleep of hospitalized children might focus on modifications of the hospital environment, including greater bedtime structure and reduced light and noise.

## Abstract 10

**Determinants of Psychosocial Morbidity in Children with Asthma**

Madeleine U. Shalowitz, Pediatrics, Northwestern University, Feinberg School of Medicine, Evanston, IL, Laura Curtis, Christopher Lyttle, Institute for Healthcare Studies, Northwestern University, Feinberg School of Medicine, Chicago, IL, Lisa Sharp, Medicine, University of Illinois in Chicago, Chicago, IL

Purpose: School-aged children with asthma are at higher risk for psychosocial morbidity. We evaluate asthma-related determinants of psychosocial morbidity of children in the CHIRAH project. Methods: 509 caregivers of children age 8_14 years old with physician-diagnosed, persistent, symptomatic asthma completed the CHIRAH baseline interview. Caregivers reported race-ethnicity, socioeconomic status, highest level of education, their own general health and symptoms of depression (CES-D). They reported their child_s general health and on their asthma burden, a 2 week recall of 1) daytime and nighttime asthma symptoms; and 2) use of beta agonists and-or inhaled corticosteroids. 12 month recall was used for steroid bursts. The Pediatric Symptom Checklist (PSC) was used to screen for psychosocial morbidity. Subscale scores represented internalizing factors, externalizing factors and attention. Results: 59% of the children were male with a mean age of 10.6 years. 13% of caregivers had less than a high school education; 19% were college graduates. 48% of households had incomes less than 30,000. 24% of caregivers reported their own health as fair or poor; the mean CES-D score was 14. 41% of children had asthma symptoms more than 2 nights in 14; 35% reported asthma symptoms more than 4 days in 14. 91% used inhaled beta agonists; 50% used inhaled corticosteroids. 69% required at least one steroid burst in the prior year. The mean total PSC score was 22.5; 30% scored above the cutoff indicating high risk for psychosocial impairment. The internalizing, externalizing score and attention subscores were each higher in children with frequent night asthma symptoms. We regressed each of the PSC subscale scores on asthma symptoms and overall health, controlling for inhaled beta agonists, inhaled corticosteroids and steroid bursts, and symptoms of maternal depression. Night symptoms were related to internalizing symptoms, but not to externalizing symptoms or attention. Medication use was not significant in any of the analyses. There was a modest, consistent effect of increasing symptoms of maternal depression reports of behavior symptoms, with the largest effect on reports of child internalizing symptoms. Conclusion: Night symptoms due to asthma are most consistently related to internalizing symptoms in a model that controls for demographics, medication and caregiver health. Caregiver reports of their children_s psychosocial morbidity are influenced by their own mental health.

# Plenary Session Abstracts

## Plenary Session 3

**Monday, October 1, 2007 from 9:45 AM - 11:00 AM**

### Abstract 11

**Developmental Disregard Predicts Improvement after Constraint-induced Movement Therapy in Hemiplegic Children**

Trenna L. Sutcliffe, Pediatrics, Stanford University, Palo Alto, CA, William C. Gaetz, Diagnostic Imaging, William J. Logan, Neurology, Douglas O. Cheyne, Diagnositc Imaging, Darcy L. Fehlings, Pediatrics, University of Toronto, Toronto, Ontario, Canada

Purpose: Developmental disregard describes infrequent use of a hemiplegic extremity despite hand function. Constraint-induced (CI) movement therapy is a treatment for hemiplegia. The relationship between disregard and CI success has not been reported. Methods: A prospective intervention study design evaluated five subjects (age 7-13yrs) with hemiplegia. Clinical and functional MRI (fMRI) measures were done at baseline and post-CI. The primary clinical measure was increased arm use on the Pediatric Motor Activity Log (PMAL). Secondary clinical measures included: improved quality of movement measured on the Quality of Upper Extremity Skills Test (QUEST); improved bimanual use on the Assisting Hand Assessment (AHA); and improved grip strength. A baseline developmental disregard ratio was calculated (% of arm use on PMAL divided by arm quality on QUEST). A ratio <1 represented disregard; a ratio >1 represented absence of disregard. The percentage of disregard was then calculated. Correlations between percent of disregard and improvements on measures after CI were calculated using SAS v9.1. FMRI measured the lateralization of cortical activity during motor tasks of the hemiplegic hand. Results: Clinical improvement post-CI occurred in 4/5 subjects. All 4 had improved PMAL and grip strength; 2/4 had improved QUEST and AHA. Developmental disregard ratios <1 were measured in 4/5 subjects. The one subject without disregard (ratio=1.33) had no clinical improvement on measures. Baseline percent of disregard (range 0-76%) was highly correlated with improvement on the PMAL (r=0.94; p=0.018), grip strength (r=0.97;p=0.007) and AHA (r=0.86; p0.06). Disregard did not correlate significantly with improved quality of hand function on the QUEST (r=0.66;p=0.22) nor change on fMRI (r=0.51;p=0.49). Baseline frequency of arm use on the PMAL did not significantly correlate with improvement on the PMAL (r=-0.59; p=0.29) nor other clinical measures. FMRI showed shift of cortical activity to contralateral hemisphere post-CI for subjects who had ipsilateral activity for hemiplegic hand movement pre-CI. Conclusion: Baseline measurement of developmental disregard, and not frequency of use, was strongly associated with improved clinical outcome on the PMAL, grip strength, and AHA after CI. The calculation of disregard in this study is a novel measure not previously described and warrants further evaluation.

### Abstract 12

**Types of Childhood Trauma as Differential Predictors of Health-Related Quality of Life**

Allison M. Smith, Christine B. Sieberg, Ellen C. Flannery-Schroeder, Psychology, University of Rhode Island, Kingston, RI

Purpose: In 2005, an estimated 899,000 children were known victims of child abuse or neglect (US Dept. of Health & Human Services, 2007), making childhood trauma a serious public health problem. Research has shown a strong relationship between childhood trauma and physical/psychological difficulties later in life because of alterations to physical, emotional, cognitive, and social development (Mulvihill, 2005, Silverman et al, 1996). Current literature focuses on specific illnesses as outcomes of childhood trauma. However, health is not merely the absence of disease. Therefore, this study investigated health-related quality of life to broaden our understanding of the impact of childhood trauma. Specifically, we examined how the experience of various types of childhood trauma (e.g., physical abuse, sexual abuse, emotional abuse, emotional neglect, and physical neglect) might differentially predict various aspects of health-related quality of life in college students. Methods: Participants (N=232) were undergraduates enrolled in a mid-sized northeastern university who received extra credit for their participation. They completed the Childhood Trauma Questionnaire (CTQ, Bernstein & Fink, 1998) and the Health-Related Quality of Life Measure (HRQOL-14, Center for Disease Control & Prevention, 1993). The CTQ is a 28-item retrospective self-report measure that assesses emotional, physical, and sexual abuse, as well as emotional and physical neglect. The HRQOL is a 14-item self-report measure that assesses perceived health over the past 30 days. It asks participants to rate their overall health, as well as the number of days of poor physical health, poor mental health, feeling that health has impacted quality of life, feeling depressed, feeling anxious, pain, getting little to no sleep, and feeling full of energy. Results: A series of step-wise multiple regressions was conducted with the five trauma types as predictors of various areas of health-related quality of life. Consistent with recent research, we found that emotional abuse was a strong predictor of self-reported poor health, poor mental health, and feelings of depression and anxiety. Unsurprisingly, emotional neglect negatively predicted feeling full of energy. Interestingly, physical neglect was inversely related with poor mental health. Sexual abuse best predicted poor physical health and days in pain. Childhood trauma types were not significant predictors of sleep quality. Conclusion: Our findings indicate that various types of childhood trauma significantly differentially predict various aspects of health-related quality of life in young adulthood. Generally, emotional abuse predicted poor mental health, while sexual abuse was more associated with poor

physical health. These findings broaden our conception of the impact of childhood trauma. Future research should examine variability in health-related quality of life across gender, culture, and other types of traumatic experiences.

Trauma Types as Predictors of HRQOL

| HRQOL Area | Sig. Pred. | Adj. R2 | beta | t | p |
|---|---|---|---|---|---|
| Health Rating | Emo. Abuse | .025 | .171 | 2.575 | <.05 |
| Poor Phys. Health | Sexual Abuse | .057 | .247 | 3.766 | <.001 |
| Poor Ment. Health | Emo Abuse | .152 | .478 | 6.508 | <.001 |
| | Phys Neglect | .013 | -.152 | -2.074 | <.05 |
| Health Affects QOL | Emo Abuse | .065 | .265 | 3.861 | <.001 |
| Pain | Sexual Abuse | .026 | .176 | 2.627 | <.01 |
| Depressed | Emo Abuse | .099 | .321 | 5.045 | <.001 |
| Anxious | Emo Abuse | .047 | .226 | 3.438 | <.01 |
| No Sleep | n.s. | n.s. | n.s. | n.s. | n.s. |
| Full of Energy | Emo Neglect | .034 | -.195 | -2.948 | <.01 |

## Abstract 13

### The PedsQL(tm) as an Internet-Administered Health-Related Quality of Life Instrument in Pediatric Endocrinology

Christine A. Limbers, Psychology, James W. Varni, Pediatrics, Landscape Architecture & Urban Planning, Texas A&M University, College Station, Texas, Tasha M. Burwinkle, William Bryant, Don P. Wilson, Pediatrics, Texas A&M University Health Science Center, Temple, Texas

Purpose: While the importance of measuring health-related quality of life (HRQOL) in a variety of pediatric conditions has been advocated for a number of years, the measurement of HRQOL using internet based administration is a more contemporary conceptualization, and generally unexplored in pediatrics. The application of internet based administration to the measurement of patient self-report and parent proxy-report may reduce some of the burden associated with the administration and completion of standardized HRQOL instruments, and consequently represents one method for potentially overcoming some of the barriers to the routine use of these measures in pediatric clinical practice. The objective of the present study was to test the feasibility of an internet mode of administration of the PedsQL 4.0 Generic Core Scales in pediatric endocrinology. Methods: Participants included 133 families of children receiving healthcare in a hospital-based pediatric endocrinology clinic. To assess response equivalence of the electronic administration of the PedsQL (ePedsQL) with the paper-and-pencil format of the PedsQL, a cross-over randomized controlled trial design was employed. Parents and pediatric patients were randomized to either paper or internet administration, varying by order of administration, such that all participants completed both versions of the PedsQL in a cross-lag design. Participants also completed the Computer Use and Satisfaction Questionnaire. Results: Across each PedsQL Scale and Summary Score for both child self-report and parent proxy-report, mean scores across mode of administration (internet administration vs. paper-and-pencil administration) were nearly equivalent with no statistically significant differences (P>.05). Intraclass Correlations (ICC) between modes of administration for both child self-report and parent proxy-report across the PedsQL Scales and Summary Scores were in the excellent agreement range (ICCs ranged from 0.81-0.92). 82.6% of the children and 83.2% of the parents indicated a clear preference for the internet mode of administration. Conclusion: These analyses demonstrate the equivalence of internet and paper-and-pencil administration of the PedsQL. Parents and pediatric patients preferred the internet administration, suggesting the potential application of this mode of administration as a viable alternative to paper and pencil administration in future clinical research and practice.

## Abstract 14

**Parent-Child Interactions shortly after Brain Injury in Young Children**

Shari L. Wade, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Britt Nielsen, Psychiatry, Terry Stancin, Pediatrics, MetroHealth Medical Center, Cleveland, OH, H. G. Taylor, Pediatrics, Case Western Reserve University, Cleveland, OH, Nicolay C. Walz, Lori A. Bernard, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Keith O. Yeates, Pediatrics, Children's Hospital Columbus, The Ohio State Univ., Columbus, OH

Purpose: To examine parent-child interactions shortly after traumatic brain injury compared with those of children who had an orthopedic injury (OI). Methods: We used a concurrent cohort/prospective research design to follow children aged 3-6 years with TBI or OI requiring hospitalization and their families. 96 children with TBI and 110 children with OI were videotaped with their parents during free play and a structured teaching task. Using a coding scheme developed by Landry et al., we rated parental warmth/responsiveness, and negativity as well as child warmth, cooperation, and behavioral dysregulation. Raters also completed counts of parental directives and restrictions. 10% of tapes were rated by two raters to establish inter-rater reliability. Group differences were analyzed using general linear models with race and census tract income serving as covariates. Results: Compared with parents of preschoolers with OI, parents of preschoolers with TBI were rated as exhibiting less warm responsiveness. Parents in the TBI group also issued more directives than did those in the OI group, both overall and during the teaching task. However, the groups did not differ in parental negativity or restrictions. Children in the TBI group were rated as less warm and less well regulated (all p_s < .05). Parental responsiveness was more closely related to the child_s behavior in the OI than in the TBI group such that parents in the OI group were less responsive if the child_s behavior was dysregulated. Conclusion: These findings provide the first direct, observational evidence that parent-child interactions are adversely affected in the initial months following TBI. Although the direction of causality is unclear, significant correlations between child behavioral dysregulation and parental warm responsiveness suggest that parents may become less responsive as they are required to exert greater efforts to manage the child_s behavior. Previous research suggests that parental warmth and responsiveness facilitate cognitive growth and development, particularly among children with neurological vulnerabilities. Thus, it will be important to understand whether these decrements in parental responsiveness persist and contribute to less recovery over time in this population.

## Abstract 15

**The Impact of the Family and Social Environment on Preschool Developmental Outcome of Low and Normal Birth Weight Children**

Ameeta Dudani, Hala Tamim, Alison Macpherson, School of Kinesiology and Health Science, York University, Toronto, Ontario, Canada

Purpose: Few studies have examined the predictors of early developmental outcome in a large, representative sample of low birth weight children, as compared to normal birth weight children. Moreover, the influence of the family and social environment on preschool development of these children remains unclear. The aim of this study was to examine the factors associated with poor motor and social development for low and normal birth weight children, from a population-based sample aged 1 to 3 years. Methods: This was a cross-sectional study which considered data from Cycle 1 (1994-1995) of the Canadian National Longitudinal Survey of Children and Youth. The primary outcome measure was the Motor and Social Development (MSD) age-standardized score, with a score of < 85 representing poor MSD. Covariates included child-related, maternal, and social and environmental factors. Analyses were based on children whose mother had completed the survey, and were carried out separately for low (LBW, d 2500g) and normal birth weight (NBW, >2500g) children. Results: Among the NBW children (n = 4726), 13.8% displayed poor MSD, whereas 26.6% of LBW children (n = 267) displayed poor MSD. After adjusting for all covariates, social and environmental factors (low income adequacy, low social support, low family functioning, and low neighbourhood safety) were significantly associated with poor MSD for LBW children, whereas for NBW children, maternal factors (such as older age and lower education) were more predictive of poor MSD. Conclusion: Social and environmental factors play a significant role in the preschool development of low birth weight children, more so than for normal birth weight children. Changes in the immediate and external environment may need to be incorporated earlier for low birth weight children, in order to ensure optimal developmental outcome at preschool age and beyond.

# Poster Board Assignments

| Board No. | Abstract No. | Abstract Title | First Author |
|---|---|---|---|
| 1 | 16 | Family experience of youth with Tourette syndrome | Samuel Zinner, MD |
| 2 | 17 | Quality of Life among Youth (ages 11-18) with Tourette Syndrome | Samuel Zinner, MD |
| 3 | 18 | Parent Decision-Making and Experience With Using Complementary and Alternative Medicine (CAM) in Children With Autism Spectrum Disorders (ASD) and ADHD | Angela Huang, MD |
| 4 | 19 | Tower of London Performance in Subtypes of Attention-Deficit/Hyperactivity Disorder | Irene Loe, MD |
| 5 | 20 | Development in Infants with Deformational Plagiocephaly | Brent Collett, PhD |
| 6 | 21 | Reading in Children with and without Orofacial Clefts | Brent Collett, PhD |
| 7 | 22 | Psychometrics of the Strength and Difficulties Questionnaire and the Vanderbilt ADHD Diagnostic Teacher Rating Scale | Mark Wolraich, MD |
| 8 | 23 | Cognitive Evaluation of School-aged Children with Multiple Disabilities | Timothy Hamway, EdD |
| 9 | 24 | Auditory Brainstem Responses (ABRs) in Healthy Term Newborns Correlate with Bayley Scores at 1 Year. | Randall Phelps, MD, PhD |
| 10 | 25 | Assessment of Risk for Neurodevelopmental Sequelae in Preterm Infants: A Comparison of the Neurodevelopmental Risk Exam and the Neurobiologic Risk Score Methods | Tyler Hartman, MD |
| 11 | 26 | The Effect of Parenting Stress on Later Child Behavior: An Examination in a Sample Prenatally Exposed to Cocaine | Daniel Bagner, PhD |
| 12 | 27 | Bowel Management and Social Acceptance in Spina Bifida | Rebecca Felsenthal, BA |
| 13 | 28 | Autism Spectrum Disorders in XXY, XYY, and XXYY Syndromes | Nicole Tartaglia, MD |
| 14 | 29 | Impact of Neighborhood and Family Factors on Child Disability in 17 US Cities | Michael Msall, MD |
| 15 | 30 | Collaborative Office Rounds (COR): Multidisciplinary continuing professional education in children s developmental and behavioral health at Children's Hospital at Dartmouth--results of the 2005 participant survey. | Lawrence Kaplan, MD |
| 16 | 31 | A Randomized Clinical Trial of Neurofeedback in Children with Attention Deficit/Hyperactivity Disorder. | Naomi Steiner, MD |
| 17 | 32 | Training Pediatric Residents in Behavioral Consultation with Triple P Positive Parenting Program | John Duby, MD |
| 18 | 33 | Predictors of Independent Decision Making in Adolescents with Spina Bifida | Jill Zukerman, MA |
| 19 | 34 | ADHD Guideline Adherence in a School-based Telemedicine Clinic | Georgina Peacock, MD, MPH |
| 20 | 35 | Identifying Children at Risk Prior to Parental Military Deployment | Eric Flake, M.D. |
| 21 | 36 | Types of Childhood Trauma as Differential Predictors of Later Eating Dysfunction | Christine Sieberg, EdM, MA |
| 22 | 37 | SDBP Practice Parameters Survey: Overview of Full Time Developmental-Behavioral Pediatricians | Robin Adair, MD |
| 23 | 38 | Predictors of Pain and Activity Restriction in Children and Adolescents with Chronic Pain Conditions | Amy Lewandowski |
| 24 | 39 | Assessment of Physician Documentation of Developmental Status at Hospital Admission | Carolyn Kippes, MD |
| 25* | 40 | Equity in the Age of Diagnosis and Medication Initiation for Attention Deficit Hyperactivity Disorder | Scott Stuart, MD |

# Poster Board Assignments

| Board No. | Abstract No. | Abstract Title | First Author |
|---|---|---|---|
| 26 | 41 | Parenting Stress and Concern for Child Bullying | Kimberly Twyman, MD |
| 27 | 42 | Parental Concerns Predictive for Failed Critical Items on the Modified Checklist for Autism in Toddlers | Kimberly Twyman, MD |
| 28 | 43 | Long-Term Effectiveness and Safety of Lisdexamfetamine Dimesylate in Children Aged 6 to 12 Years With Attention-Deficit/Hyperactivity Disorder | Steven Valliere, PharmD |
| 29 | 44 | Atomoxetine For Children and Adolescents with ADHD and Reading Disorders | Calvin Sumner, MD |
| 30* | 45 | Caregiver Self-Efficacy and Childhood Unintentional Injury: Injury Prevention Behavior as a Mediator | Shanna Guilfoyle, MA |
| 31 | 46 | Prevalence of Tic Disorders in a School-Based Population | Mark Wolraich, MD |
| 32 | 47 | Outgrowing Attention Deficit/ Hyperactivity Disorder (ADHD): Adolescent and Parent Perspectives | Julia Anixt, MD |
| 33 | 48 | Childhood Obesity: The Role of Self-Concept in Motivation to Change | Amy Beck, BS |
| 34 | 49 | Neurobehavioral Assessment Predicts Motor Outcome in Preterm Infants | Bonnie Stephens, MD |
| 35 | 50 | Limited Interactions between Mothers and 6 Month Old Infants During Media Exposure | Alan Mendelsohn, MD |
| 36 | 51 | Substance Abuse among Children with Learning Disorder (LD) and Attention-Deficit/ Hyperactivity Disorder (ADHD) | Slavica Katusic, MD |
| 37 | 52 | Traumatic Brain Injuries in Preschool Age Children: Initial Impact on the Family | Terry Stancin, PhD |
| 38 | 53 | Prenatal depression and antidepressant use: Effects on fetal behavior | Amy Salisbury, PhD |
| 39 | 54 | The Relationship of Parental-Provider Language Concordance and the Quality of Pediatric Preventive and Developmental Health Care | Alexy Arauz Boudreau, MD |
| 40 | 55 | Improving Primary Care Pediatrician Management of Behavior Problems: Impact of Location of Services | Diane Langkamp, MD, MPH |
| 41 | 56 | Influence of Foster Placement on Developmental Outcomes in Infants with In-Utero Methadone Exposure | Jo-Ann Bier, MD |
| 42 | 57 | Mothers' Postpartum Expectations for Shared Reading: Implications for Reading Activities at 6 Months | Samantha Berkule, PhD |

***Poster has been withdrawn.**

# Poster Session Abstracts

**Poster Session**
**Sunday, September 30 from 6-7pm**

## Abstract 16

**Family experience of youth with Tourette syndrome**

Samuel H. Zinner, Pediatrics, Tari D. Topolski, Health Services, University of Washington, Seattle, Washington, Roger D. Freeman, Psychiatry, University of British Columbia, Vancouver, British Columbia, Canada, Todd C. Edwards, Donald L. Patrick, Health Services, University of Washington, Seattle, Washington

Purpose: Tourette syndrome is a chronic motor and vocal tic disorder that ranges in severity and expression. It is under-recognized medically, but tics can be functionally and/or socially impairing and stigmatizing. Additionally, many youth with TS also have associated, or _co-morbid conditions. Our objective was to identify family mediating and modifying factors influencing quality of family life for families of youth with Tourette syndrome. Anecdotal data suggest that the impact of TS with and without associated conditions is mediated or moderated by the family, including parental relationship discord, negative or positive feelings about parenting, and financial burden in caring for the youth. Methods: The influence on family functioning of adolescents with Tourette syndrome (TS) was investigated, as part of a larger study identifying factors that contribute to the quality of life (QOL) of adolescents ages 11-18 with TS. Data from mothers of youth with TS were compared to data from mothers of youth with Attention Deficit Hyperactivity Disorder (ADHD) and a group of mothers whose children did not have any chronic conditions (NCC). This is an observational study using a cross sectional design. Data reported here are from the Family Impact Questionnaire. Results: Data from 43 mothers of youth with TS were compared to data from 25 mother of youth with ADHD and 16 NCC mothers. Mothers of youth with TS and mothers of youth with ADHD reported significantly lower feelings of positive parenting (TS=10.1, ADHD=9.0,) compared with the control mothers (17.4); a larger impact on the sibling (TS=5.4, ADHD 6.1, NCC 2.9); and, greater financial impact (TS=5.5, ADHD=6.8, NCC=1.8). Conclusion: Mothers of Youth with TS report a negative impact of this condition on the family as do mothers of youth with ADHD. These findings emphasize the need to consider the entire family, as youth live within the context of their families and family members influence one another throughout development and life course.

## Abstract 17

**Quality of Life among Youth (ages 11-18) with Tourette Syndrome**

Samuel H. Zinner, Pediatrics, Tari D. Topolski, Health Services, University of Washington, Seattle, Washington, Roger D. Freeman, Psychiatry, University of British Columbia, Vancouver, British Columbia, Canada, Todd C. Edwards, Donald L. Patrick, Health Services, University of Washington, Seattle, Washington

Purpose: To describe the quality of life (QOL) of youth ages 11-18 with Tourette Syndrome (TS) from their perspective and to describe the association between self-reported symptoms of ADHD, depression and anxiety on QOL of youth with TS. TS is characterized by motor and vocal tics that can lower school performance and/or interfere socially. Many youth with TS also have co-existing conditions such as ADHD, Obsessive Compulsive Disorder and learning disabilities, shown to impact QOL. Self-reported assessment of the impact of TS on QOL, however, has not been studied in this age group. Methods: Youth with TS were recruited through two clinical practices specializing in TS. Thirty youth completed semi-structured interviews. They and 12 youth participating in the family interview completed the generic Youth QOL Instrument Research Version (YQOL-R) and measures of depression, anxiety and ADHD. The YQOL-R assesses Relationships (family and peer), Environment (School and Neighborhood), Self (Belief in Self and Sense of Self) and General Perceived QOL. Data from the YQOL-R were compared to data from youth without chronic conditions. Results: The predominantly male sample had a mean age of 13.9. People-staring and social withdrawal were common TS-associated themes reported during the QOL interview. Lower scores on the YQOL-R Self and Relationship (66.3 and 79.7) domains were observed for TS youth than for youth without chronic conditions (79.9 and 81.6), respectively. Conclusion: Youth with TS report a negative impact of TS on QOL similar to youth with ADHD, especially in areas of Self and Relationships. These findings suggest enhanced social skills training to empower youth with TS to participate with peers may be beneficial. Study supported by Association of University Centers on Disability - US Centers for Disease Control and Prevention

## Abstract 18

**Parent Decision-Making and Experience With Using Complementary and Alternative Medicine (CAM) in Children With Autism Spectrum Disorders (ASD) and ADHD**

Angela Huang, Bonnie O'Connor, Pediatrics, Brown Medical School, Providence, RI

Purpose: To identify factors influencing parent decision-making on CAM use in children with ASD and ADHD and to explore parent experiences of CAM use. Methods: IRB-approved qualitative study. Parents were recruited via fliers (3 sites) to 5 Focus Groups to discuss experiences/opinions of CAM. Groups were audiotaped, transcribed, and examined independently for themes by 2 researchers. Results: 17 mothers (88% W, 6% AA, 6% Hisp; 59% some college, 29% advanced degrees) of 19 affected children (84% ASD, 16% ADHD, mean age 8yrs., 74% male) participated. 53% had used CAM, including diets & supplements, relaxation techniques, Reiki, homeopathy, chelation, antifungals, exercise, and varied personal coping strategies. Decisional factors included goals for self and child(ren), dissatisfaction with conventional treatments (CT), and lay models of disease etiology. Most decisional processes appeared rational and oriented to practical problem solving; families made choices based on desired & apparent outcomes. Concerns about CAM included safety, lack of scientific studies. Concerns about CT included toxicity, poor results, and aversion to giving children drugs. Conclusion: Parent decision-making on CAM for ASD and ADHD is multifactorial. Alternatives are considered when CT are ineffective, do not reach parent treatment goals, or do not address perceived disease etiology. CAM often supplements CT. Parents commonly report dissatisfaction with schools for delayed or insufficient services and with healthcare providers for not listening, or delay in diagnosis. They are less likely to seek CAM if satisfied with CT. More research is needed to improve clinician understanding of what is important to families when considering CAM for children with ASD and ADHD and to inform discussions on CAM use between clinicians and families.

## Abstract 19

**Tower of London Performance in Subtypes of Attention-Deficit/Hyperactivity Disorder**

Irene M. Loe, Pediatrics, Stanford University, Palo Alto, CA, Beatriz Luna, Psychiatry, University of Pittsburgh, Pittsburgh, PA, Jason D. Yeatman, Heidi M. Feldman, Pediatrics, Stanford University, Palo Alto, CA

Purpose: ADHD is divided into subtypes based on behavioral symptom checklists. Although ADHD is characterized by executive function (EF) deficits, traditional tests of EF do not consistently differentiate ADHD-Combined (C) and ADHD-Inattentive (I) subtypes. Previous studies are limited by heterogeneous samples (e.g., mixing subtypes, comorbid conditions, learning problems) and inconsistent measures across studies. The Cambridge Neuropsychological Testing Automated Battery (CANTAB), a computerized battery of EF tests, offers the advantages of nonverbal task stimuli, standard testing and scoring, and recording of precise reaction times. Objective: To determine how responses of a well-characterized sample of children with ADHD-C, ADHD-I, and controls differ on the CANTAB Tower of London (TOL) Methods: Cross-sectional study of 8-13 year olds with ADHD-C, ADHD-I and controls. Subjects on stimulants withheld medication the day of testing. Controls were group-matched to subjects on age, sex, IQ, and SES. The TOL, a measure of problem solving and spatial planning, requires rearrangement of three colored balls to match a specific pattern in the minimum number of moves. Outcome measures include problems solved in minimum moves; mean moves, initial thinking time (ITT, time to plan the problem solution) and subsequent thinking time (STT, average measure of time after the initial move, divided across remaining moves) for 2, 3, 4, and 5-move problems. Task difficulty is divided into easy (2/3 moves) and hard (4/5 moves). Results: There were no group differences for problems solved in minimum number of moves, mean moves, ITT or STT (p ns). See the table below for correlations between ITT, STT and performance (as indicated by mean moves) on the TOL. Longer ITT was associated with better TOL performance (fewer moves) on hard problems for children with ADHD, but not controls. Shorter STT was associated with better TOL performance on easy and hard problems for controls, but not children with ADHD. Conclusion: The CANTAB TOL outcome measures did not differentiate the groups. Despite similar overall performance, correlations between thinking times and performance revealed differences in how controls and children with ADHD completed the task. The association of shorter STT with better performance in controls but not children with ADHD suggests that controls use the ITT effectively, while ADHD children may require continued planning of responses during later phases of the task.

| | | | Controls | ADHD (all) | ADHD-C | ADHD-I |
|---|---|---|---|---|---|---|
| | | | n=30 | n=26 | n=14 | n=12 |
| Correlation | | | | | | |
| ITT-TOL | Problems | | | | | |
| | Easy | r (p) | .195 (.312) | -.044 (.835) | .090 (.770) | -.216 (.523) |
| | Hard | r (p) | .102 (.599) | -.494 (.012)* | -.698 (.008)* | -.356 (.282) |
| STT-TOL | | | | | | |
| | Easy | r (p) | .588 (.001)* | .269 (.204) | .216 (.500) | .457 (.184) |
| | Hard | r (p) | .338 (.078)+ | .088 (.681) | -.068 (.833) | .336 (.342) |
| *=significant | +=trend | | | | | |

## Abstract 20

**Development in Infants with Deformational Plagiocephaly**

Brent R. Collett, Psychiatry & Behavioral Sciences, University of Washington School of Medicine, Seattle, WA, Eileen Twohy, Child Psychiatry & Behavioral Medicine, Seattle Children's Hospital Research Institute, Seattle, WA, Darcy King, Bay Sittler, Craniofacial, Seattle Children's Hospital, Seattle, WA, Catherine J. White, Child Psychiatry & Behavioral Medicine, Seattle Children's Hospital Research Institute, Seattle, WA, Jacqueline R. Starr, Pediatrics/Epidemiology, Michael Cunningham, Pediatrics, Matthew L. Speltz, Psychiatry & Behavioral Medicine, University of Washington School of Medicine, Seattle, WA

Purpose: Positional or deformational plagiocephaly (DP) refers to flattening of the infant skull due to external pressure. It is unknown whether this relatively common condition adversely affects development. We are examining this relationship in in a longitudinal cohort study of children with and without DP (Matthew Speltz, P.I.). Methods: Cases with DP are being recruited at the time of diagnosis, between 4-11 months of age, excluding infants born at <32 weeks gestation and those with known neurodevelopmental syndrome (e.g., Down's Syndrome). Participating children received a clinical examination of skull shape and developmental testing (Bayley Scales of Infant Development-III [BSID]), and mothers completed a medical/developmental history interview and the BSID-III Adaptive Behavior scale. Preliminary data are available for 70 cases, and data collection and processing are ongoing (target enrollment N=250). Results: The mean age of the sample is 7.2 months [standard deviation (SD)= 1.5; range = 4.7-11.1]. The sample is predominately male (61%), Caucasian (71%), and of middle to upper socioeconomic status. Seventeen percent of the sample were delivered between 32-38 weeks. Based on clinician judgments of DP severity at the time of diagnosis, 39% were considered 'mild,' 50% 'moderate,' and 7% 'severe.' Relative to test norms for the BSID-III, preliminary findings suggest that cases score within the average range with regard to their cognitive development [Mean (M) = 101.2, SD =14.0]. Though still within the average range, cases scored slightly below test norms in language (M= 92.3, SD=8.8) and motor development (M= 94.9, SD=12.4). Adaptive behaviors also appear to be normal (M = 101.5, SD= 13.6). Conclusion: These findings suggest that infants with DP are generally developing as expected. There may be subtle differences in language and motor development, for which cases score 5-8 points below the population average of 100. Ultimately, our comparisons with demographically matched controls and evaluation of developmental trends in these areas over time will help to determine the clinical significance of these subtle differences.

## Abstract 21

**Reading in Children with and without Orofacial Clefts**

Brent R. Collett, Psychiatry & Behavioral Sciences, University of Washington School of Medicine, Seattle, WA, Eileen Twohy, Heather Violette, Child Psychiatry & Behavioral Medicine, Seattle Children's Hospital Research Institute, Seattle, WA, Michael L. Cunningham, Pediatrics, Matthew L. Speltz, Psychiatry & Behavioral Sciences, University of Washington School of Medicine, Seattle, WA

Purpose: Children with isolated orofacial clefts have been found to be at increased risk for learning problems and academic underachievement, with particular vulnerability in reading. However, to date, studies have been methodologically limited in several respects (e.g., reliance on test norms versus unaffected controls for comparison). This study is being undertaken to examine early reading skills in children with clefts of the lip and/or palate compared with unaffected controls. Methods: Children ages 5-7 years old (grades k-2) with cleft lip only (CLO), cleft palate only (CPO), and cleft lip and palate (CLP) have been identified through the craniofacial program at a major pediatric tertiary care center. Unaffected controls have been identified through a child participant

pool (i.e., families who have agreed to be contacted regarding research participation) and public advertisements. Preliminary data are available for 32 cases and 13 control participants, and recruitment is ongoing (target enrollment N=36 per group). Participants have completed assessments drawn from the dyslexia literature, including selected subtests from the Woodcock-Johnson-III (WJ-III), the Comprehensive Test of Phonological Processing (CTOPP), Test of Word Reading Efficiency (TOWRE), and the Rapid Automatized Naming/Alternating Stimulus Test (RAN/RAS). Results: Age and gender distributions are comparable for cases and controls (mean age = 83.6 months, 82.2 months; 75%, 69% male for cases and controls, respectively). Relative to test norms, cases and controls both scored within the average to high average range on all measures administered. Although differences are not statistically significant ($p<0.05$) after controlling for multiple comparisons, cases received lower scores than controls with regard to basic reading skills (WJ-III Basic Reading mean=108.4, 117.7), phonological awareness (CTOPP Phonological Awareness mean=104.1,109.2), rapid letter naming (RAN/RAS Letter mean=98.1, 108.8), and word reading efficiency (TOWRE Total mean=99.4, 112.2). Conclusion: Findings suggest that children with clefts are within the average range in reading relative to test norms. However, they received lower scores than unaffected controls. Although these differences are not statistically significant, given the relatively small sample size for these preliminary analyses, differences appear relatively large (i.e., 5-13 points). In our final analyses, we will have greater statistical power to detect group differences and will explore potential confounds that might account for these differences (e.g., differences in SES). As one of only a handful of studies including a healthy control sample and detailed assessment battery, this study contributes to our understanding of early learning in children with orofacial clefts.

| | Cases (n=32) | Controls (n=13) |
|---|---|---|
| WJ-III Basic Reading | 108.4(15.0) | 117.7(10.5) |
| CTOPP Phonological Awareness | 104.1(12.2) | 109.2(20.7) |
| RAN/RAS Letter Naming | 98.1(16.1) | 108.8(11.3) |
| TOWRE Total Score | 99.4(9.6) | 112.2(16.4) |

## Abstract 22

### Psychometrics of the Strength and Difficulties Questionnaire and the Vanderbilt ADHD Diagnostic Teacher Rating Scale

Wolraich L. Mark, David Bard, Melissa A. Doffing, Pediatrics, Barbara R. Neas, Biostatistics and Epidemiology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, Robert E. McKeown, Epidemiology and Biostatistics, University of South Carolina, Columbia, SC, Susanna N. Visser, National Center on Birth Defects & Dev. Disabilities, Centers for Disease Control and Prevention, Atlanta, GA

Purpose: Previous studies have demonstrated the reliability and validity of the SDQ, making it a useful brief instrument for measuring child and adolescent psychopathology (Goodman, 1997; Goodman et al., 1998; Goodman, 2001). The psychometric properties for the VADTRS are reported with multiple samples (Wolraich & Baumgaertel, 1996; Wolraich, Lambert, Baumgaertel et al., 2003; Wolraich, Lambert, Doffing et al., 2003). The current study assessed the concurrent and predictive validity of select subscales. Methods: In a large epidemiologic study of ADHD in Oklahoma and South Carolina, teachers completed two brief behavioral screening instruments and two questions about ADHD diagnosis and medication status for each student in grades Pre-K through 5th (n = 10,457). The ethnic and racial backgrounds of the sample included: Hispanic 17%, African American 27%, Native American 7%, White 50%, and other race 3% (race ethnicity categories are not exclusive). Gender was evenly split, 51% male. Parents (n = 4,117) answered two questions about their child's ADHD diagnosis and medication status. Content analysis was performed to identify common sets of items across instruments. Items from these subscales were subjected to multidimensional item response modeling to test construct validity of instrument construction and later concurrent validity of overlapping item content domains. Finally, models regressing teacher- and parent-reported diagnosis and medication status for ADHD on the hyperactive and inattentive item domains of each instrument (in isolation and combination) were fit to assess predictive validity. Results: Content analysis identified five overlapping item domains in the SDQ and VADTRS. Items from these scales are currently under evaluation from an IRT modeling perspective. Preliminary comparison of subscale scores revealed moderate to strong polychoric correlations ranging from .53 to .91. Comparison of risk classifications from each subscale faired much worse, producing Kappa agreement coefficients ranging from .25 to .46. Conclusion: There appears to be varying agreement between the SDQ and VADTRS behavioral screening instrument subscales. The strength of agreement seems to depend on both the subscale of interest and the scoring system used for quantifying risk. Future item analysis work is underway to investigate whether disagreement depends on established risk thresholds or more fundamental construct-related differences.

## Abstract 23

**Cognitive Evaluation of School-aged Children with Multiple Disabilities**

Timothy J. Hamway, Psychology, Kean University, Westfield, New Jersey

Purpose: Background: The assessment of the cognitive abilities of school-age children with multiple disabilities, primarily cerebral palsy, has been a consistent challenge . Commonly used instruments for intelligence testing have been unable to capture the true ability oflevels as performance is strongly influenced by visual, verbal, and fine-motor skills. The purpose of this study was to explore the use of three alternative assessments of intelligence for this population that has been often regarded as untestable. Methods: Twenty-one multiply disabled children (mean age of 10.7 years) took part in this study. Each was measured on the Pediatric Evaluation of Disability Inventory (PEDI),the Leiter International Performance Scale- Revised (Leiter- R), and a Cognitive Assessment Teacher Rating Scale. Results: The PEDI Social Subtest significantly correlated with both the Leiter-R Brief I.Q. and the Leiter-R Full I.Q as well as the Cognitive Assessment Teacher Rating Scale. There was a significant relationship between the social/communication measure of the PEDI, the Leiter-Revised I.Q. Scores, and the teacher assessment of cognitive ability. Conclusion: Three different methods of tapping cognitive assessment resulted in similar results. Therefore, when it comes to assessing the cognitive ability of school-age children with cerebral palsy, we can utilize a variety of methods in place of traditional intelligence test administration. This study has expanded our understanding of children who in the past were regarded as untestable and presents viable alternatives to traditional assessment methods. Keywords Intellectual disability, assessment, cerebral palsy.

1: Correlational Matrix: PEDI Social, Leiter-R & Teacher Rating

| | Self Care | Self Care CG | Mobility | Mobility CG |
|---|---|---|---|---|
| Self Care | 1.00 | .83* | .57* | .62* |
| Self Care CG | | 1.00 | .69** | .78** |
| Mobility | | | 1.00 | .92** |
| Mobiliy CG | | | | 1.00 |

## Abstract 24

**Auditory Brainstem Responses (ABRs) in Healthy Term Newborns Correlate with Bayley Scores at 1 Year.**

Randall A. Phelps, Child Development Unit, Children's Hospital of Pgh/ University of Pittsburgh, Pittsburgh, PA, Lindsey E. Keogh, Audiology, John D. Durrant, Communication Sciences and Disorders, University of Pittsburgh, Pittsburgh, PA, Diane L. Sabo, Audiology and Communication Disorders, Children's Hospital of Pgh/University of Pittsburgh, Pittsburgh, PA, Kevin E. Kip, Epidemiology, Herbert L. Needleman, Psychiatry, University of Pittsburgh, Pittsburgh, PA

Purpose: In this study we sought to test whether ABRs performed on a cohort of low-risk newborns would correlate significantly with developmental assessment at 1 year of age. Methods: n=34; gestational age >37 weeks; birth-weight 2500-4500gms; no perinatal distress or transfer to the NICU; no jaundice; no major anomalies; mother English-speaking; maternal age e18 years. Research-quality auditory brainstem responses, using conventional lead-placement and auditory stimulus (70 dB clicks) were performed on newborns. Bayley Infant Developmental Scales were performed at 1 year. Results: Participants are mostly of middle to high socio-economic status, with standardized scores on the Bayley Cognitive Composite ranging from a low of 100 to a high of 145. Neonatal ABR Wave V latency was significantly inversely correlated with scores at one year on the cognitive composite, fine motor subscale, and motor composite of the Bayley. Neonatal ABR wave V amplitude was significantly directly correlated with scores at one year on the cognitive composite, fine motor subscale, and motor composite of the Bayley. Conclusion: ABR wave latency has been shown to be predictive of developmental delay in high risk groups. It has not been previously determined whether ABR can detect subtle neurodevelopmental differences among low-risk newborns. In this study, the inverse correlation of wave latency in newborns and motor and cognitive scores at 1 year holds true even within a cohort of low-risk infants. An additional novel finding is that wave V amplitude was highly correlated with scores on the Bayley. These findings are suggestive that ABR wave amplitude has relevance to neurodevelopmental function. Implications: the ABR is a powerful, non-invasive, and inexpensive technique for the detection of subtle neurophysiologic differences that have neurodevelopmental relevance in low-risk infants.

## Abstract 25

**Assessment of Risk for Neurodevelopmental Sequelae in Preterm Infants: A Comparison of the Neurodevelopmental Risk Exam and the Neurobiologic Risk Score Methods**

Tyler K. Hartman, William J. Barbaresi, Pediatric and Adolescent Medicine, Slavica K. Katusic, Health Sciences Research, Robert C. Colligan, Psychiatry and Psychology, Amy L. Weaver, Health Sciences Research, Robert G. Voigt, Pediatric and Adolescent Medicine, Mayo Clinic College of Medicine, Rochester, MN

Purpose: Premature infants are at risk for adverse neurodevelopmental outcomes, yet methods for early assessment of risk are limited. Two instruments, the Neurodevelopmental Risk Examination (NRE) and the Neurobiologic Risk Score (NBRS) have been shown to have moderate correlation with developmental outcome. The correlation between these two instruments is unknown, and their predictive value in the contemporary NICU is uncertain. The objective of this study was to compare the NRE and NBRS methods for assessing risk for neurodevelopmental sequelae in infants <32 weeks gestational age. Methods: Subjects were 219 neonates <32 weeks discharged from the NICU between 2001 and 2006 who had undergone both the NRE and NBRS. The NRE includes 5 categories: sensory and behavioral response, axial tone, extremity tone, deep tendon reflexes, and primitive reflexes. The NBRS includes 7 categories: episodes of acidosis, infection, seizures, intraventricular hemorrhage, periventricular leukomalacia, hypoglycemia and mechanical ventilation. Both the NRE and NBRS independently generate a summary score that correlates with low, intermediate or high risk for neurodevelopmental sequelae. Results: Subjects had mean birth weight of 1101g and mean gestational age of 27.8 weeks. Risk scores for the two instruments were distributed as follows: NBRS--161 (75.2%) low, 29 (13.6%) intermediate and 24 (11.2%) high; NRE-- 97 (98%) low, 4 (2%) intermediate, 0 (0%) high. The correlation coefficient between the two exams was 0.43 with the ventilation and pH categories of the NBRS having the highest individual correlations with the overall NRE score (0.34 and 0.37, respectively). Conclusion: Both the NRE and NBRS have previously been shown to correlate with risk for neurodevelopmental sequelae in preterm infants, yet these two instruments have only a modest correlation with each other. This suggests that one or the other instrument may no longer be a valid method for assessing risk in the contemporary NICU environment. Future follow-up studies of this cohort will address the predictive value of each of these two instruments, and their components, in an effort to identify a valid method to assess risk for neurodevelopmental sequelae in the contemporary NICU.

## Abstract 26

**The Effect of Parenting Stress on Later Child Behavior: An Examination in a Sample Prenatally Exposed to Cocaine**

Daniel M. Bagner, Stephen J. Sheinkopf, Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI, Cynthia Miller-Loncar, Linda L. LaGasse, Pediatrics, Women & Infants Hospital of Rhode Island, Providence, RI, Barry M. Lester, Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI, Jing Liu, Pediatrics, Women & Infants Hospital of Rhode Island, Providence, RI, Ronald Seifer, Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI, Charles R. Bauer, Pediatrics, University of Miami, Miami, FL, Seetha Shankaran, Pediatrics, Wayne State University, Detroit, MI, Henrietta Bada, Pediatrics, University of Tennessee at Memphis, Memphis, TN, Abhik Das, N/A, Research Triangle Institute, Rockville, MD

Purpose: Parenting stress in the infant period has been shown to predict later child functioning in non-clinical populations. Mothers who used drugs during pregnancy have been shown to have higher levels of parenting stress; however, the longitudinal relationship between early parenting stress and later child behavior has not yet been examined in this population. Identifying the relations between parenting stress and childhood outcomes in infants with prenatal cocaine exposure would enhance our understanding of the influences on problem behaviors in this population, and would help to refine preventive interventions. Methods: This study examined the stability of parenting stress over time, the relationship between early parenting stress and later child behavior, and the effect of drug exposure on the relationship between parenting stress and child behavior in the Maternal Lifestyle Study, a large sample of child-caregiver dyads with prenatal cocaine exposure and a non-exposed comparison sample. Results: Correlations between caregiver rating of parenting stress at 4 and 30 months were moderate, demonstrating high stability of parenting stress over time. Parenting stress at 4 months significantly predicted child externalizing behavior at 36 months. These relations were unaffected by cocaine exposure, indicating that the relationship between parenting stress and behavioral outcomes are found for at-risk children regardless of drug exposure history. Conclusion: These results extend the findings of the relationship between parenting stress and child behavior to a sample of children prenatally exposed to cocaine. Implications for outcome and treatment are discussed.

## Abstract 27

**Bowel Management and Social Acceptance in Spina Bifida**

Rebecca Felsenthal, Barbara Jandasek, Grayson N. Holmbeck, Psychology, Loyola University Chicago, Chicago, IL

Purpose: The purpose of this study is to address relations between bowel program management and social functioning in youth with spina bifida. Methods: Participants were recruited within a larger longitudinal study addressing psychosocial adjustment in youth with spina bifida. Youth were 8-9 years old at Time 1 (T1), and data was collected every 2 years for a total of 5 waves. Families (n=26) completed questionnaires regarding bowel program adherence, desire for autonomy, and responsibility, and peer acceptance. Mother, father, nurse and child reports were used. Results: Parents reported up to 2 bowel management methods: enemas (T1 27%; T3 18.9%), suppositories (T1 18.9%; T3 18.9%), habit training programs (T1 5.4%; T3 2.7%), digital stimulation (T1 27%; T3 10.8%), manual disimpaction (T1 0%; T3 16.2%), bulk-forming agents (T1&3 5.4%), lubricants (T1 2.7%; T3 5.4%), diet (T1 0%; T3 13.5%), miscellaneous medications (T1 5.4%; T3 0%), a combination of methods (T1 2.7%; T3 0%), or other (T1&3 5.4%). At T1, 73.3% reported that their child toileted with complete assistance (T3 53.8%), 20% with partial assistance (T3 15.3%), 3.3% with reminding (T3 15.3%), and none toileted independently (T3 15.4%). Reports of bowel program adherence were not correlated across reporters. Child reports of bowel program responsibility and peer acceptance were correlated (T5; .468, $p<.05$). Mother report of bowel program adherence (T4) predicted mother report of peer acceptance (T5) ($p<.05$). Child report of peer acceptance (T4) predicted mother report of child_s desire for autonomy in bowel management (T5) ($p<.05$). Conclusion: Families of children with spina bifida utilize a range of methods to manage the neurogenic bowel. Responsibility for bowel management increases as youth enter adolescence. Lack of correlation across reporters for bowel program may be due to discrepancies among reporters. Child reports of bowel program responsibility and mother reports of program adherence were related to reports of peer acceptance, indicating that medical adherence has a positive impact on social acceptance.

## Abstract 28

**Autism Spectrum Disorders in XXY, XYY, and XXYY Syndromes**

Nicole R. Tartaglia, Department of Pediatrics, University of California - Davis Medical Center, Sacramento, CA, Susan Bacalman, MIND Institute, Robin L. Hansen, Pediatrics, UC-Davis Medical Center, Sacramento, CA, Shanlee Davis, School of Medicine, Mayo Clinic, Rochester, MN, Beth Goodlin-Jones, Psychiatry, Lesley Deprey, Michele Ono, MIND Institute, Randi J. Hagerman, Pediatrics, David Hessl, Psychiatry, UC-Davis Medical Center, Sacramento, CA

Purpose: Previous reports on males with sex chromosome aneuploidy (SCA) describe a variety of features including language delays, social deficits, executive dysfunction, and autistic behaviors. Many cases of autism spectrum disorder (ASD) have been reported in children with SCA. In this study we conducted standardized assessments for ASD on a group of male children with the most common forms of SCA including XXY, XYY, and XXYY syndromes. Methods: Males with XXY (n=20), XYY (n=22), and XXYY (n=20) age 3-21 were recruited from SCA family organizations. All participants completed a protocol including the Social Communication Questionnaire (SCQ) and the Autism Diagnostic Observation Schedule (ADOS-G). The Autism Diagnostic Interview (ADI-R) was completed if the SCQ score was 15 or above, or if there was a previous concern for ASD by a parent or other professional. Age-appropriate developmental (Mullen Scales), cognitive (WASI) and adaptive functioning (Vineland-II) assessments, and a developmental-behavioral medical evaluation were also completed. A final diagnosis of autistic disorder, PDD-NOS, or no ASD was determined by a consensus of these measures and clinical impression. Results: Full ASD evaluation on 62 males with SCA (20 XXY, 22 XYY, 20 XXYY) showed that 0% of XXY, 36% of XYY, and 50% of XXYY had a diagnosis of ASD (XYY autistic disorder 5%, PDD-NOS 31%; XXYY autistic disorder 15%, PDD-NOS 35%). Children with a postnatal diagnosis of SCA were more likely to receive a diagnosis of ASD compared to prenatally diagnosed children. In those without ASD, 30% (13/44; 3/20 XXY, 7/14 XYY, 3/10 XXYY) met ADOS criteria in at least one domain. ASD symptomatology on the ADOS negatively correlated with verbal IQ and adaptive functioning across groups. Conclusion: ASD is an important clinical consideration in male children with SCA. ASD is more common in the groups with Y chromosome aneuploidy, and more common in children with a postnatal SCA diagnosis. Children with SCA without ASD can have a behavioral phenotype that overlaps with ASD. Results also support the importance of cytogenetic testing for all children with ASD. Further research investigating genetic polymorphisms and expression of X&Y chromosome genes involved in neurodevelopment is underway.

## Abstract 29

**Impact of Neighborhood and Family Factors on Child Disability in 17 US Cities**

Michael E. Msall, Ronald R. Espinal, Pediatrics, University of Chicago, Chicago, IL, Roger C. Avery, Dennis P. Hogan, Sociology, Brown University, Providence, RI

Purpose: To assess rates of motor, sensory-communicative, and self-care functional limitations in school children and other family members living in United States (US) metropolitan regions. We used these activities as indicators of disability in functioning. We hypothesized that disability rates for other household members would be substantially higher in the city compared to suburbs, especially in households where there was a child with disability. Methods: Using Y2000 Census data from the Integrated Public Use Microdata Series (IPUMS), we analyzed a 6% sample of the 18,456,982 children ages 5-17 years living in 17 US metropolitan regions. Results: 34% of children lived in outer suburbs, 29% in inner suburbs, and 27% in central cities. Among children with disabilities who lived in cities, there were significantly higher rates (compared to their suburban peers) of not having access to a car or phone, limited adult education, unemployment, poverty, and inadequate housing. These children also were far more likely to live in a household with another disabled person. Table 1 documents the rates of child disability as well as rates of disability in other household members for children with and without disability living in the inner city compared to outer suburbs. In NY, LA, and Chicago, the data are highlighted for the areas with the most concentrated poverty. Conclusion: In US inner city metropolitan areas, children with disability disproportionately live in households with another family member with disability. This will require more resources to provide family-centered interventions that optimize participation.

| | Child and Family with Dis. | | Child Disability Rates | | Child and Family w/o Dis. | |
|---|---|---|---|---|---|---|
| | Inner City | Outer Suburbs | Inner City | Outer Suburbs | Inner City | Outer Suburbs |
| | Poverty | | 2.07% | 1.80% | Poverty | |
| New York | 62.19% | 38.01% | 1.98% | 1.66% | 26.35% | 13.69% |
| LA | 55.49% | 41.36% | 1.96% | 1.63% | 20.10% | 12.94% |
| Chicago | 64.91% | 39.45% | 3.01% | 2.03% | 24.26% | 12.50% |
| SF-Oakland | 58.20% | 48.80% | 2.30% | 1.55% | 19.92% | 15.45% |
| Dallas | 56.41% | 41.35% | 2.40% | 1.56% | 18.56% | 13.95% |
| Philadelphia | 61.06% | 43.78% | 2.67% | 1.66% | 27.48% | 14.30% |
| Houston | 50.58% | 42.56% | 2.95% | 1.60% | 18.79% | 13.64% |
| DC | 60.00% | 43.30% | 3.06% | 1.58% | 22.65% | 13.35% |
| Atlanta | 46.94% | 38.14% | 2.80% | 1.39% | 16.82% | 11.69% |
| Boston | 59.12% | 41.22% | 3.24% | 1.57% | 20.49% | 14.03% |
| Miami | 53.66% | 29.05% | 3.32% | 1.49% | 19.50% | 14.80% |
| Detroit | 58.44% | 45.40% | 3.52% | 1.46% | 27.73% | 14.67% |
| Phoenix | 57.29% | 41.55% | 2.48% | 1.42% | 20.46% | 14.62% |
| San Diego | 50.19% | 39.53% | 3.16% | 1.65% | 21.98% | 13.66% |
| Minneapolis | 65.00% | 35.74% | 2.59% | 1.49% | 17.56% | 11.77% |
| St Louis | 58.14% | 38.94% | 2.07% | 1.80% | 19.64% | 13.99% |
| Denver | 45.54% | 37.99% | 1.98% | 1.66% | 19.31% | 13.34% |

## Abstract 30

**Collaborative Office Rounds (COR): Multidisciplinary continuing professional education in children's developmental and behavioral health at Children's Hospital at Dartmouth--results of the 2005 participant survey.**

Lawrence C. Kaplan, Pediatrics, Craig L. Donnelly, Psychiatry, Dartmouth Medical School, Lebanon, New Hampshire

Purpose: Collaborative Office Rounds were designed to help Medical Home Providers improve their skills in the behavioral and developmental aspects of child health. Through roundtable case discussions, diverse health care providers from NH and VT meet to discuss psychological, social, and medical issues critical to child health particularly in our rural setting. To assess participant

experiences, a survey is administered annually, the results of which are shared with the group and presented at a National COR Program Directors meeting. The results of the 2004-2005 academic year survey are presented here. Methods: A survey instrument was administered to evaluate participant experiences and attitudes towards the COR Program during the 2004-2005 academic year, and reviewed with participants. Results: Satisfaction by COR participants in this program was high (80%).The experience did not office management(80%), but the majority felt the COR experience improved their knowledge about the diagnosis and management of developmental and behavioral health issues in children, or community (90%). Working directly with other colleagues and sharing concerns and opinions was a great benefit (100%), and the majority intended to continue as regular participants in the program. Participants found COR valuable to their practices, but criticized lack of follow-up information. More didactic sessions and guest speakers were requested (80%),and most felt that this program should be better advertised and promoted (80%). Unexpected findings included a desire to use this model to teach developmental and behavioral pediatrics to pre and post doctoral students, and to use this forum for research, and publication (80%). Conclusion: The Dartmouth COR Program is highly valued by its participants and is considered an essential part of their continuing medical education experience.

## Abstract 31

**A Randomized Clinical Trial of Neurofeedback in Children with Attention Deficit/Hyperactivity Disorder.**

Naomi J. Steiner, Developmental-Behavioral Pediatrics, Floating Hospital - Tufts University, Boston, MA, Ellen C. Perrin, Radley C. Sheldrick, Developmental-Behavioral Pediatrics, Floating Hospital for Children - Tufts University, Boston, MA, David G. Gotthelf, Brown Middle School, Newton Public Schools, Newton, MA, Amanda E. Price, Developmental and Behavioral Pediatrics, Floating Hospital for Children - Tufts University, Boston, MA

Purpose: Parents, schools, and physicians have searched for an alternative and/or complement to medications in the treatment of ADHD. This study examined the efficacy of two computer-based training systems to teach children with ADHD to attend more effectively. We compared a system that teaches children to alter their brainwave activity using Neurofeedback (NF) with another system that does not use neurofeedback (AT). The hypotheses are: 1) Both treatments will result in improvements in ADHD symptoms compared to a control condition; and 2) Improvements in the NF condition will be superior to those in the AT condition. This study is the first that we know of that looks at this treatment approach using an RCT and is executed within a school system. Methods: Thirty children in grades 6, 7, and 8 with a diagnosis of ADHD were randomly assigned to NF, AT, or waitlist(WL) groups, and completed the first semester of the project. Children received 45 minute sessions twice a week at school for 4 months. Parents, children, and teachers completed Conners, BRIEF and BASC questionnaires and children completed a Continuous Performance Test 1) at enrollment; 2) immediately after the program; and 3) 4 months after the program. Results: Preliminary analyses of variance are based on 23 children on whom full data are currently available. Mothers_ ratings on all 4 subscales of the Conners rating scale reflected improvement in the NF group compared to the WL group ($p<.05$). Differences between AT and WL groups showed a similar trend ($p<.15$). Teachers_ ratings showed a similar trend only for Conners subscales 1 and 2. Conclusion: These data suggest that computer-based attention training programs, especially those that utilize neurofeedback mechanisms, may be effective in reducing symptoms of ADHD among middle school children. Because of the small sample size and the complex logistical challenges of delivering the treatment within the school system, final conclusions await analyses based on all instruments from the full sample.

## Abstract 32

**Training Pediatric Residents in Behavioral Consultation with Triple P Positive Parenting Program**

John C. Duby, Pediatrics, Northeastern Ohio Universities College of Medicine, Akron, OH, Melody Tankersley, College of Education, Kent State University, Kent, Ohio, Ann E. Salvator, The NeuroDevelopmental Center, Akron Children's Hospital, Akron, Ohio

Purpose: The study evaluates the effect of training pediatric residents in behavioral consultation using the Triple P Positive Parenting Program. Methods: 52 pediatric residents were trained in the Primary Care Triple P: Positive Parenting Program in 2005-2007. Residents completed the Triple P pre-training questionnaire assessing the trainee_s beliefs regarding their training, confidence, and proficiency in behavioral consultation. Upon completion, trainees also completed the Triple P questionnaire. Pre- and post-results were compared. Results were compared to surveys completed by 26 trained faculty and staff. Results: The pediatric residents scored significantly better on the post vs pre scores on the questions regarding trained (mean difference, 1.39; 95% confidence interval [CI], 0.69 to 2.09; $p=0.0004$), confident (mean difference, 1.48; 95% confidence interval [CI], 0.85 to 2.10; $p<0.0001$) and proficient (mean difference, 1.19; 95% confidence interval [CI], 0.74 to 1.65; $p<0.0001$). The faculty scored significantly better on the post vs pre scores on the questions regarding trained (mean difference, 2.00; 95% confidence interval [CI], 1.66 to 2.34; $p<0.0001$), confident (mean difference, 1.96; 95% confidence interval [CI], 1.63 to 2.28; $p<0.0001$) and proficient (mean difference, 2.20; 95% confidence interval [CI], 1.82 to 2.58; $p<0.0001$) as well. Pediatric residents vs Faculty mean differences in pre and post scores were compared. There were no significant differences between pediatric residents vs faculty on the trained question (mean difference,

-0.61; 95% confidence interval [CI], -1.28 to 0.61; p=0.06) or confident (mean difference, -0.48; 95% confidence interval [CI], -1.11 to 0.14; p=0.09). The faculty had a significantly higher difference on proficient post - pre scores than the pediatric residents (mean difference, -1.00; 95% confidence interval [CI], -1.64 to -0.36; p=0.002). Conclusion: Pediatric residents demonstrate significant improvement in their beliefs regarding level of training, confidence in their ability, and proficiency in behavioral consultation after completing Primary Care Level Triple P.

## Abstract 33

**Predictors of Independent Decision Making in Adolescents with Spina Bifida**

Jill M. Zukerman, Grayson N. Holmbeck, Clinical Psychology, Loyola University, Chicago, IL

Purpose: There is a dearth of research examining the impact of chronic illness during late adolescence, a time characterized by gaining autonomy and independence from parents. Spina bifida is a common congenital birth defect, associated with several neurological, cognitive, and orthopedic consequences. The purpose of the current study is to identify predictors of successful independent decision making in youth with spina bifida during their transition to adulthood and out of pediatric care. Methods: Participants are part of a larger longitudinal study exploring family relationships and psychosocial adjustment of youth with and without spina bifida. The larger study includes 68 families with 8 and 9 year old children with spina bifida at Time 1 (T1). Fifty-two adolescents with spina bifida and their families participated in the present study. Data collection occurs every 2 years and multiple reporters are used for questionnaire data. Cross-sectional and longitudinal models examine several developmental skills (functional abilities, cognitive ability, and intrinsic motivation) at T4 as predictors of independent decision making at T5. Results: Cross-sectional analyses suggest intrinsic motivation and executive skills are significant predictors of adolescent independent decision making. Greater illness management by youth predicts increased independent decision making for non-illness related activities. Father report of executive functioning (T4) significantly predicts independent decision making(T5), with fewer executive deficits predicting more independence. Mother report of higher levels of personal care at T4 predicted higher levels of independent decision making at T5. Conclusion: Parents and clinicians should foster executive and adaptive skills necessary for independent decision making. Motivation also plays an important role in the development of independence. Implications for informing and improving services to meet the needs of these youth as they transition into adulthood and out of pediatric care are discussed.

## Abstract 34

**ADHD Guideline Adherence in a School-based Telemedicine Clinic**

Georgina Peacock, Developmental Pediatrics, AUCD, Decatur, GA, Eve-Lynn Nelson, Pediatrics, Jessica Foster, Developmental Disabilities Center, University of Kansas, Kansas City, KS

Purpose: Primary care providers have become gatekeepers in ADHD evaluation, especially for underserved communities. Despite high pediatrician awareness of the American Academy of Pediatrics (AAP) guidelines for ADHD evaluation, only a quarter routinely report adhering to all guidelines. No previous studies have addressed AAP guideline adherence using telemedicine. Methods: A new ADHD Telemedicine clinic, connecting the school nurse's office with the medical center team was conducted with a child psychologist and developmental pediatrician, with LEND trainees and residents in attendance. Provider adherence to AAP guidelines was tracked using clinic rating forms. Providers and trainees also reported barriers and facilitators to guideline adherence. Consenting trainees completed online telemedicine rotation surveys. Results: To date, seventy new and follow-up encounters were completed across 25 unique patients. Most patients (23 of 25) were male and the mean age was 9 years. Most presented with co-morbid learning and psychiatric concerns. Approximately 15 pediatric trainees participated across clinical consultations. Very high adherence to each of the six AAP guidelines was observed. Initial results indicate gaps in trainee knowledge and gains in self-efficacy with the telemedicine technology and intention to use the technology in practice. In open-ended questions, trainees report benefit of the experience, particularly collaborating with the school nurses. Conclusion: Telemedicine presented few challenges specific to the technology in implementing national guidelines for ADHD evaluation. Adherence barriers related to the underserved population and the school-based setting rather than telemedicine per se. Trainee surveys indicated knowledge gaps and benefit of community experience via telemedicine. The trainee feedback will be used to generate a more structured telemedicine vignette-based questionnaire. The feedback will also be used for quality improvement of the TeleKidcare ADHD rotation.

## Abstract 35

**Identifying Children at Risk Prior to Parental Military Deployment**

Eric M. Flake, Beth Ellen Davis, Developmental Pediatrics, Madigan Army Medical Center, Tacoma, WA

Purpose: The Global War on Terror has resulted in multiple, long and dangerous deployments for more than 150,000 US soldiers every year since 2001. Unlike previous wars, 50% of deployed service members are married and have children. The effects of deployment on two million military children during this period are unknown. Previous studies have determined predictable patterns of response during a deployment cycle. During the months prior to service members' deployment children have been observed to demonstrate increased internalizing symptoms and emotional withdrawal. The Pediatric Symptom Checklist (PSC)is a valid screening tool to identify at risk children for emotional problems. Methods: Parents attending a pre-deployment briefing for Active Duty Army and National Guard units were asked to complete a child deployment survey consisting of the Pediatric Symptom Checklist, Perceived Stress Scale and demographic information. Results: Eight hundred Active Duty (600) and National Guard (200) soldiers deploying to Iraq provided 115 eligible families with elementary school children. An initial sample of thirty parents (26%) voluntarily completed surveys. Fifty-three percent of the children were female (46% male) with a mean age of 7.2 years (age range 4-13). Thirty percent of Active Duty Army families were preparing for their second or more deployment. Four (14%) children had significant PSC scores for psychosocial and behavior problems; 3 from Active Duty, 1 from National Guard. All four children were already identified as having a medical condition (1 ADHD, 2 Autism and 1 Anxiety disorder) and were receiving medical assistance. Sixty percent of the parents reported that their child sometimes or often "complains of aches and pains" or "spends more time alone". Forty percent report that sometimes or often their child "worries a lot" or "wants to be with them more than before". The average Perceived Stress Scale score was 3.5 based on an Index 0 as low stress - 16 high stress. Increased stress index corresponded with higher PSC scores. Eighty-five percent of the Active Duty families and 75% of the National Guard families reported feeling supported by the military. Conclusion: Children at highest risk for psychosocial problems and family stress were those with underlying medical conditions. Internalizing symptoms were highly prevalent which may warrant further monitoring throughout the deployment cycle. Pre-deployment, a brief screening tool demonstrated low stress in the majority of this sample which may be reflected by family satisfaction of perceived military support.

## Abstract 36

**Types of Childhood Trauma as Differential Predictors of Later Eating Dysfunction**

Christine B. Sieberg, Psychology, University of Rhode Island, Kingston, Rhode Island, Allison M. Smith, Ellen C. Flannery-Schroeder, Psychology, University of Rhode Island, Kingston, RI

Purpose: Research suggests that childhood trauma is linked to adverse health outcomes such as eating disorder symptomatology (Everill & Waller, 1995). Moreover, many studies examining the effects of trauma on later development focus on a single type of trauma (Krupnick, Green, Stockton, Goodman, Corcoran, & Petty, 2004), namely sexual abuse. Such studies often do not address how additional types of childhood trauma, (e.g., emotional neglect, emotional abuse, physical neglect, physical abuse, & sexual abuse) each contribute to later eating dysfunction. According to the National Center of Child Abuse and Neglect, of the 1.5 million verified child abuse cases, over 750,000 represent neglect while approximately 700,000 are comprised of sexual, physical, or emotional abuse cases combined(Sedlack & Broadhurst, 1996). This suggests that there is a vital need to look beyond sexual abuse as a factor in the development of later eating pathology. This study aims to bridge a gap in the literature by examining how various types of childhood trauma (e.g. emotional neglect, emotional abuse, physical neglect, physical abuse, and sexual abuse) differentially predict later eating dysfunction. Methods: Participants were 232 students enrolled in a mid-size northeastern university who received extra credit for their participation in the study. Participants completed the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) and the Eating Disorders Inventory, 2nd Edition (EDI; Garner, 1991) as part of a larger study examining childhood trauma and later health outcomes. Results: A series of statistical regressions (step-wise method) was conducted using emotional abuse and neglect, sexual abuse, and physical abuse and neglect (CTQ) as predictor variables and the total EDI score as well subscales of the EDI. Results found that types of childhood trauma differentially predict later eating dysfunction (See Table). Conclusion: These findings suggest that in addition to sexual abuse, other types of childhood trauma such as emotional abuse and neglect as well as physical neglect may be important in shaping later eating pathology. Surprisingly, physical abuse was not predictive of eating dysfunction and it might be of interest to explore this specific variable in future research. This research not only provides insight into the specificity of childhood trauma and its predictive value in later eating dysfunction but may also serve to inform future prevention and treatment efforts.

| Dependent Variable | Predictor Variable | R2 Change | df | F-Statistic | Beta |
|---|---|---|---|---|---|
| Total EDI | Emotional Abuse | 0.098 | 1, 212 | 23.051*** | 0.253 |
| | Sexual Abuse | 0.035 | 2, 211 | 16.128*** | 0.195 |
| Body Dissatisfacti | Emotional Abuse | 0.023 | 1, 219 | 5.265* | 0.153 |
| Interceptive Aware | Emotional Abuse | 0.075 | 1, 218 | 17.602*** | 0.273 |
| | Sexual Abuse | 0.029 | 2, 217 | 12.570*** | 0.180 |
| Ineffectiveness | Emotional Abuse | 0.119 | 1, 218 | 29.557*** | 0.346 |
| | Emotional Neglect | 0.042 | 2, 217 | 20.830*** | 0.231 |
| Bulimia | Sexual Abuse | 0.082 | 1, 220 | 19.771*** | 0.198 |
| | Emotional Neglect | 0.029 | 2, 219 | 13.795*** | 0.193 |
| Maturity Fears | Sexual Abuse | 0.059 | 1, 220 | 13.909*** | 0.244 |
| Interpersonal Dist | Emotional Neglect | 0.094 | 1, 219 | 22.812*** | 0.307 |

## Abstract 37

**SDBP Practice Parameters Survey: Overview of Full Time Developmental-Behavioral Pediatricians**

Robin Adair, Pediatrics, UMass Med Sch, Worcester, MA, Ellen Perrin, Pediatrics, Tufts Univ Sch of Med, Boston, MA, Carol Hubbard, Pediatrics, Maine Med Ctr, Falmouth, ME, Judith Savageau, Family Medicine, UMass Med Sch, Worcester, MA

Purpose: The purpose of this survey was to characterize the nature of developmental-behavioral pediatric (DBP) practice and the impact of productivity goals. Methods: 468 SDBP members (excluding trainees, retirees, and those without known e-mail addresses) received a 3-part on-line survey via e-mail. Results: We received 138 complete responses to Part I (29%), 98 to Part II (21%), and 78 to Part III (17%). The 78 full-time MD respondents who provide clinical care are widely distributed in age, geographic location, and salary. About half are women; 77% are Board certified; 85% have academic appointments, 46% at the clinical associate professor level or higher; and 40% are credentialed as mental health providers. They see, on average, 7.5 new and 15.4 follow-up patients/week. On average, 41% of patients have ADHD, 25% have autism spectrum disorders, and 16% have other developmental disabilities. Wait time for first appointment is <2 months for 41%, 2-6 months for 43%, and 6-12 months for 16%. For initial visits, 65% use consultation billing codes (99241-5) and 35% use new patient codes (99202-5); 12% use 96110 and 19% use 96111 for developmental testing. On average, 37% of patients are covered by Medicaid and 39% by other payers. 41% of respondents have productivity goals; of their employers, 41% use national productivity benchmarks and 18% enforce their productivity policies. 15% of respondents know their annual RVU (relative value unit) production and 15% are familiar with national productivity benchmarks. Conclusion: This survey illustrates the diversity within DBP practice and potential benefit of coding and productivity training. The analysis is limited by the small sample size of full time physicians and the possibility it may not be representative of the field.

## Abstract 38

**Predictors of Pain and Activity Restriction in Children and Adolescents with Chronic Pain Conditions**

Amy S. Lewandowski, Psychology, Case Western Reserve University, Cleveland, Ohio, Tonya M. Palermo, Anesthesiology and Peri-Operative Medicine, Oregon Health & Science University, Portland, OR, Dennis Drotar, Division of Behavioral Pediatrics and Psychology, Rainbow Babies & Children's Hospital, Cleveland, Ohio

Purpose: The current study tested a single predictive model to examine the longitudinal relationship between pain and activity restriction in children and adolescents with recurrent headache (HA) and juvenile chronic arthritis (JCA). The study compared children_s responses on prospective (daily diary reports) and retrospective measures over a 12 month period to determine 1) whether the different type of assessment tools similarly assessed pain and activity restriction, and 2) to determine if either type of measurement tool showed consistent bias with children over-inflating or under-reporting symptoms. Methods: Data were gathered as a part of a larger study examining the longitudinal impact of chronic pain on the physical and psychological functioning of children and adolescents. The sample consisted of 89 children and adolescents recruited at a baseline visit and who were diagnosed with recurrent headaches (HA) or juvenile chronic arthritis (JCA). Data collection included administration of prospective and retrospective measures of pain, activity restriction and depressive symptoms. Both linear regressions and hierarchical linear modeling (HLM) were used in data analysis. Results: Findings using both types of measures revealed that level of pain intensity consistently predicted children_s degree of restriction in daily activities. Individual characteristics particularly age, gender, income level, depressive symptoms and illness group impacted the strength of this relationship. In addition, group differences between the pain conditions

emerged with HA participants reporting significantly higher levels of pain and greater activity restriction that those with JCA. In terms of specific activity limitations, participants with HA reported more activity restriction in social domains whereas those with JCA reported more limitation in physically demanding activities. Contrary to hypotheses, results did not reveal uniform biases in retrospective versus prospective reports. Conclusion: This study extends previous research by showing that the predictive relationship between pain and activity level remains consistent within individuals, over time, and across different pain conditions. Obtaining similar results using prospective and retrospective measures indicates that in this sample retrospective assessment tools of pain and activity restriction were not consistently biased or over-inflated. Preliminary findings suggest that retrospective reports may be an acceptable alternative to more costly, labor intensive diary data for assessment in clinical practice.

## Abstract 39

**Assessment of Physician Documentation of Developmental Status at Hospital Admission**

Carolyn A. Kippes, Carol B. Garrison, Vinnie Barone, Susan VanScoyoc, Laurie Hornberger, Pediatrics, University of Missouri-Kansas City, Kansas City, MO

Purpose: We examined the admission records of physicians to assess documentation of developmental status at hospital admission. Methods: The Children's Mercy Hospital Pediatric Institutional Review Board approved this retrospective medical record review of admissions to general pediatrics services. Group 1 included resident admission database forms with a developmental milestone screen in 1999. Group 2 included resident records and Group 3 included hospitalist records. Both from 2003 without a milestone screen. The first 250 eligible records were selected in each group and reviewed for the presence/absence of: 1) gross motor history, 2) fine motor history, 3) language history, 4) observed gross motor, 5) observed fine motor, 6) observed language, 7) head circumference, 8) family history of developmental problems, 9) developmental impression and 10) referral for services. Medical records were excluded for patient age >36 months or admission to another service. Results: A second reviewer reviewed 10% of the records with 94.5% agreement. Overall, documentation was greater for history (55.4%) than for observed (10.5%) developmental skills. History of development documentation was highest in Group 1 using a milestone screen and in Group 3 with development in the review of systems. Group 1 documented the most observed skills (18%). Overall, 43.9% of medical records documented head circumference, with Group 1 the highest (65.2%). All groups rarely documented family history of developmental problems. Overall, 6.8% of medical records had a developmental impression of the patient. Of medical records with an impression statement, appropriate referral was documented in 80% for Groups 1 and 2 and in 67% for Group 3. Conclusion: A developmental screen improves some aspects of developmental documentation at admission. The presence of a physician developmental impression statement led to more appropriate referrals. Use of a developmental screen upon admission to the general pediatrics service may improve developmental documentation. However, emphasizing physician documentation of developmental impressions should increase appropriate referrals and improve patient outcomes.

## Abstract 40

**Equity in the Age of Diagnosis and Medication Initiation for Attention Deficit Hyperactivity Disorder**

Scott Stuart, Division of Genetics and Developmental Pediatrics, Medical University of South Carolina, Charleston, SC, Conway Sadler, Psychology, The Citadel, Charleston, SC, Michelle Macias, Division of Genetics and Developmental Pediatrics, Medical University of South Carolina, Charleston, SC, Natalia Davila, Brandon Jordan, Psychology, The Citadel, Charleston, SC

WITHDRAWN

Purpose: The objective was to identify the presence of racial, gender, and clinic disparities regarding the age of diagnosis and medication initiation for Attention Deficit Hyperactivity Disorder (ADHD). Methods: Concerns have been raised about healthcare disparities in the management of developmental behavior problems. After IRB approval, a retrospective chart review was conducted. Study criteria included 6-12 years of age, diagnosis of ADHD, current medication treatment, medical management by the divisions of General or Developmental Pediatrics and at least three clinic visits. A sample of n=388 met study criteria. Twenty five subjects of each gender and clinic were randomly selected for study (n=100). Results: Of the patient sample, 70% were black ethnicity and 81% had public health insurance. Utilizing ANOVA and effect size analyses, ethnicity, gender and location of care were compared against age of diagnosis and age of medication initiation. In each category, the statistical significance was $p > 0.1$. Effect size was moderate for ethnicity and clinic, and mild for gender. Conclusion: In these data of a randomly selected school age cohort, there was no statistical difference between ethnicity, gender and location of care when compared against age of diagnosis and medication initiation for ADHD. Future research should be directed toward differences in pharmacologic treatment and follow up care.

## Abstract 41

**Parenting Stress and Concern for Child Bullying**

Kimberly A. Twyman, Michelle M. Macias, Developmental-Behavioral Pediatrics, Medical University of South Carolina, Charleston, SC

Purpose: Bullying is recognized as a cause of significant distress for the victims. While some child risk factors have been identified in children who are more likely to be bullied, family risk factors for bullying in children have been less explored. This study explores the possible association between parenting stress factors and a higher likelihood of a child being bullied. Methods: We completed a cross sectional study using data from the 2003 National Survey of Children's Health, placing subjects into 2 groups based on parent's concern their child was being bullied (a lot vs. a little/not at all). Pertinent data collected included demographic information and responses related to questions pertaining to parenting stress, including: parent involvement and support, household disagreements, and the Aggravation in Parenting Scale. Binomial logistic regression analyses were used to determine the potential association between each of the variables and concern for being bullied. Results: The two groups differed on nearly all of the demographic factors, and were included in the multiple logistic regression analyses to control for any effect on key child and parenting stress variables. Parents of bullied children reported poorer overall coping with day to day demands vs. the non bullied group (56.8 vs. 46.8%, aOR 1.50, 95% CI 1.44-1.55), and were more likely to report aggravating parenting factors such as difficulty caring for the child (aOR 1.84, 95% CI 1.70-2.00), feeling the child did things that bothered them (aOR 1.58 95% CI 1.45-1.71) and feeling angry with the child (aOR 1.62 95% CI 1.45-1.80). Other variables were significant to a lesser degree. Conclusion: An association between poor parent coping skills and child bullying suggests children may be taught maladaptive coping strategies for encounters with aggressive peers. Angry and otherwise negative parent feelings toward a child may impact a child's self esteem, also contributing to a higher risk of being bullied. Screening for bullying risk in children is important, especially when parents report high stress, and could be implemented by the child's primary care provider. Obtaining history for parenting stress during a parent's preventive care visit may help identify other children at risk for bullying.

## Abstract 42

**Parental Concerns Predictive for Failed Critical Items on the Modified Checklist for Autism in Toddlers**

Kimberly A. Twyman, Michelle M. Macias, Developmental-Behavioral Pediatrics, Medical University of South Carolina, Charleston, SC, Frances Page Glascoe, Pediatrics, Vanderbilt University, East Berlin, PA

Purpose: As early detection of autism spectrum disorders (ASD) is crucial for best outcomes, it is essential to identify the specific characteristics on developmental-behavioral (DB) screening that call for further ASD screening. This study determines what DB concerns on the Parents' Evaluation of Developmental Status (PEDS), a parent competed DB screening tool, were associated with critical failures on an ASD specific screening tool, the Modified Checklist for Autism in Toddlers (M-CHAT), and if specific concerns are predictive for certain failed M-CHAT critical items. Methods: By retrospective chart review, demographic data and scores for M-CHAT and PEDS were abstracted from the website www.forepath.org. Subjects who failed the M-CHAT were divided into two groups: Critical vs. Non-Critical Failure. One or more predictive concerns on PEDS constituted a failed screen. Concerns in each PEDS developmental domain were analyzed for prediction of critical M-CHAT failures, and if particular concerns were associated with certain failed items. Results: Of the 361 subjects, 59% failed on the basis of critical items. With respect to demographic factors, the 2 groups differed only on residential location. The Critical Fail group was more likely to have a PEDS score that would lead to referral for further testing(OR 4.3 CI 1.34-13.77). The predictive items on PEDS for M-CHAT critical failure included expressive language(OR 2.1 CI 1.01-4.55), receptive language(OR 2.3 CI 1.33-3.91), and self-help(OR 2.2 CI 1.30-3.69), while behavior concerns were less predictive(OR .46 CI .21-.99). Each of these domains was associated with failed responses for 3 M-CHAT items: imitation, sharing, and joint attention; receptive language was also associated with response to name($p<0.05$). Conclusion: Concerns within language domains are expected, as these are prominent ASD features. The association between the self-help domain and M-CHAT critical items reinforces the importance of assessing joint attention in detecting a possible ASD. Particular attention to the language and self-help domains in DB screening tools such as PEDS may elicit concerns for behaviors most sensitive to ASD which require further screening.

## Abstract 43

**Long-Term Effectiveness and Safety of Lisdexamfetamine Dimesylate in Children Aged 6 to 12 Years With Attention-Deficit/Hyperactivity Disorder**

Steven Valliere, Shire Development Inc., Wayne, PA, Robert L. Findling, Child & Adolescent Psychiatry, University Hospitals Case Medical Center, Cleveland, OH, Ann C. Childress, Center for Psychiatry and Behavioral Medicine, Las Vegas, NV, Suma Krishnan, Shire Development Inc., Wayne, PA, James McGough, Neuropsychiatric Inst & David Geffen School of Med, Los Angeles, CA, Anthony DeLeon, Shire Development Inc., Wayne, PA

Purpose: To evaluate the safety and effectiveness of long-term lisdexamfetamine dimesylate (LDX, VyvanseTM) treatment in children aged 6 to 12 years with attention-deficit/hyperactivity disorder (ADHD). Methods: This long-term, open-label, single-arm extension study enrolled children aged 6 to 12 years with DSM-IV-TR® diagnosis of ADHD (combined and hyperactive/impulsive subtypes) who may or may not have received prior LDX treatment. Subjects were titrated to 30, 50, or 70 mg/d LDX over 4 weeks. Treatment was maintained for up to 11 more months, during which time the dose could be adjusted to maintain optimal effectiveness and tolerability. The primary effectiveness measure was the ADHD Rating Scale (ADHD-RS); the secondary effectiveness measure was the Clinical Global Impression (CGI) scale. Safety assessments included adverse events (AEs), physical examinations, vital signs, laboratory evaluations, and electrocardiogram. Results: The intent-to-treat (ITT) population consisted of 272 subjects (189 boys, 83 girls). At endpoint, the mean (±SE) change in ADHD-RS total score from baseline was 27.2 (±12.8) (P<.0001), a >60% reduction from the baseline value of 43.3 (±7.7). Reductions from baseline were observed at each post-baseline visit beginning at Week 1 and throughout the12 months. No differences were found between subjects who were or were not previously treated with LDX. At endpoint, investigators rated >80% of the ITT subjects as improved or very much improved on the CGI scale. Treatment was generally well tolerated. Most AEs (>95%) were mild to moderate in severity and occurred during the first 8 weeks of treatment. The most common AEs were decreased appetite (33%), insomnia (17%), weight decrease (18%), headache (18%), upper abdominal pain (11%), irritability (10%), and upper respiratory tract infection (11%). Conclusion: Long-term treatment with 30, 50, and 70 mg/d LDX resulted in persistent improvements in ADHD symptoms and was generally well tolerated in children. Supported by funding from Shire Development Inc.

## Abstract 44

**Atomoxetine For Children and Adolescents with ADHD and Reading Disorders**

Calvin Sumner, Linda Wietecha, US Medical Division, David Williams, Information Sciences, Eli Lilly and Company, Indianapolis, IN, Thomas Lock, Child Study Center, University of Oklahoma, Oklahoma City, OK, Richard Rubin, Psychiatry, Vermont Clinical Study Center, Burlington, VT, Michael Greenbaum, Child Psychiatry, Capstone Clinical Research, Libertyville, IL

Purpose: Assess efficacy of atomoxetine for ADHD symptoms in youth with ADHD and dyslexia/reading disorder (ADHD+RD), and assess related measures of reading performance and neurocognitive function. Methods: Youth ages 10 to 16 years with ADHD and ADHD+RD received open-label atomoxetine for 16 weeks. The ADHD Rating Scale (ADHD RS), Reading Subtests of the Kaufman Test of Educational Achievement (K-TEA), and the Working Memory Test Battery for Children (WMTB-C) were assessed. Results: Both treatment groups showed significant symptom reduction on ADHD RS and improved reading scores on the K-TEA. The ADHD group showed significant improvement on WMTB-C central executive measures in contrast to the ADHD+RD group, who showed improvements on visuo-spatial sketchpad and phonological loop component scores. Conclusion: Atomoxetine was associated with significant reduction in ADHD symptoms in both groups. Baseline reading scores for the ADHD+RD group were lower than the ADHD group but showed comparable significant improvements. Measures of central executive function and visuo-spatial sketchpad and phonological loop components scores on the WMTB-C differed between groups. The meaning of these differences between groups in relation to the comparable changes in improvement in ADHD symptoms is unclear but could suggest that brain regions related to the therapeutic benefit of atomoxetine may be different with comorbid reading disorder. Funding was provided by Eli Lilly and Company

## Abstract 45

**Caregiver Self-Efficacy and Childhood Unintentional Injury: Injury Prevention Behavior as a Mediator**

Shanna M. Guilfoyle, Bryan T. Kennedy, Beth G. Wildman, Psychology, Kent State University, Kent, OH

WITHDRAWN

Purpose: Childhood unintentional injury (CUI) is the leading cause of death to children. Recent works have highlighted the need for greater application of behavioral-change theories to CUI prevention (e.g., DiGuiseppi & Roberts, 2000; Gielen & Sleet, 2003). Although the Health Belief Model (Becker, 1974) provides a framework to enhance child safety, we propose the application of Protection Motivation Theory (PMT; Prentice-Dunn & Rogers, 1986) to CUI prevention. PMT may provide unique theoretical contributions that assist to identify underlying caregiver traits that influence CUI (Morrongiello, 2005). The current objective was to evaluate caregiver sense of parenting efficacy and how much caregivers engaged in injury prevention behavior. Using PMT to guide choice of variables, the present study examined whether performance of injury prevention behavior (IPB) mediated the association between caregiver perceived self-efficacy and CUI (Morrongiello, 2005; Morrongiello, et al., 2004a, 2004b). Methods: Caregivers completed an assessment packet (demographic questionnaire; Parent Sense of Injury Competence, PSIC, adapted from Johnston & Mash, 1993; Injury Prevention Behaviors Questionnaire, IPBQ, unpublished; Injury Behavior Checklist, IBC, Speltz, et al., 1990) in waiting rooms of their children_s primary care physician offices. Co-caregivers (i.e., fathers) not present in the waiting rooms were contacted via telephone to recruit participation. Participants (N = 104) received $10 compensation for their time. Results: Perceived efficacy was significantly associated with CUI risk and performance of IPB. However, performance of injury prevention behavior was not significantly correlated with CUI risk. Thus, performance of IPB could not be tested as a mediator. Use of PMT in the study of CUI was em-

pirically supported. Conclusion: Findings suggest that perceived efficacy is linked to IPB and CUI risk for both mothers and fathers. Interestingly, mothers and fathers may have differential perceptions of CUI risk (i.e., developmental benefits of minor injury). In turn, such perceptions could influence implementation and performance of IPB. Results also highlight the importance of addressing contextually specific behaviors (Morrongiello, 2005). Results could be limited by use of measures with limited psychometric data.

## Abstract 46

**Prevalence of Tic Disorders in a School-Based Population**

Mark L. Wolraich, Melissa A. Doffing, Pediatrics, Barbara R. Neas, Biostatistics and Epidemiology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, Suzzana Visser, National Center on Birth Defects & Dev. Diabilities, Centers for Disease Control and Prevention, Atlanta, GA, Lawrence D. Scahill, School of Nursing and Child Study Center, Yale, New Haven, CT

Purpose: Epidemiologic data on the frequency of tics, tic disorder, and Tourette syndrome in a non-referred population are sparse and the results are highly discrepant with prevalence ranging from 1 - 10 per 1,000 to 20% (Scahill, Sukhodolsky, Williams & Leckman, 2005). This study provides information about the presence of tic disorders in a community setting. Methods: Participants in the current study of the frequency of tic disorders and ADHD included 5748 public school children in Pre-K through 6th grade. The sample was 51% male and included children from diverse ethnic/racial backgrounds: Hispanic 5%, Non-Hispanic 88%; African American 30%, Native American 4%, White 59%, other race 3%. Teachers (n = 5748) and parents (n = 1378) completed coordinated screening questions regarding presence of motor and phonic tics, tic interference, ADHD symptoms, functioning in school and diagnosis and medication treatment for ADHD and tic disorders. Results: The sample included 140 (2.4%) children who were reported to have tic symptoms nearly every day, 924 (16%) children that met symptom criteria for ADHD, and 88 (1.5%) children who met both tic and ADHD criteria. In the 35 cases where parents reported a diagnosis of tic disorder, only one teacher was aware of the diagnosis. When parents reported an ADHD diagnosis, teachers were aware about half of the time. Conclusion: This study provides a base of knowledge about current rates of these disorders in a non-clinical setting and addresses questions about the value of school-based screening for tic disorders. These findings also raise questions on how to provide educational services to children whose parents may not inform schools about their child_s tic diagnoses.

## Abstract 47

**Outgrowing Attention Deficit/ Hyperactivity Disorder (ADHD): Adolescent and Parent Perspectives**

Julia Anixt, Pediatrics, University of Maryland School of Medicine, Baltimore, MD, Neil Powe, Medicine & Epidemiology, Neal deJong, Johns Hopkins University, Baltimore, MD, Paul Lipkin, Center for Development & Learning, Kennedy Krieger Institute, Baltimore, MD

Purpose: Despite increased recognition that ADHD persists into adulthood in 66-80% of cases, it is a common public perception that children outgrow ADHD. Adolescents with untreated ADHD symptoms are at high risk for poor functional outcomes and teens with ADHD tend to underreport their impairments. The purpose of this study is to compare teen and parent views about the persistence of ADHD symptoms and continued need for treatment. Methods: Cross-sectional study of adolescents (13-18 y/o) previously evaluated at a specialty clinic and diagnosed with ADHD before age 10. Adolescents and their parents were contacted by mail, consented, and completed questionnaires about their experiences with ADHD. The standardized Conners' Parent and Self-Report Rating Scales were used to measure current ADHD symptoms. Parent-teen responses were compared using McNemar's test. Results: Questionnaires have been completed by 115 families (56% of those agreeing to participate). The mean adolescent age is 15.5 yr (SD 1.7 yr), and the sample is 73% male. The study participants are 29% African American, 70% Caucasian, and 27% are low-income. Most participants are currently taking medicine for ADHD (63%). On the Conners Scales, 61% of adolescents have clinical-range ADHD symptoms (>95th% for age-gender matched norms) based on parent report, whereas only 31% have symptoms in this range by self-report (chi2 27.5, $p<0.001$). Consistent with reporting higher levels of clinical symptoms, only 9% of parents think their child has outgrown ADHD, compared to 16% of teenagers (chi2 4, $p=0.046$). Whereas 66% of parents think their child needs medicine for ADHD, only 45% of adolescents think so (chi2 17.1, $p<0.001$). When asked about the long-term prognosis of ADHD, 52% of parents versus 21% of adolescents feel ADHD is a life-long condition never outgrown (chi2 28.5, $p<0.001$). Conclusion: A follow-up of adolescents diagnosed with ADHD before age 10 shows they later report ADHD symptoms at significantly lower rates than their parents and more often feel they have outgrown their ADHD. Teens are less likely than parents to report needing medication and to view ADHD as a life-long condition. Adolescent perceptions of outgrowing ADHD symptoms could lead to poor adherence to effective treatments for this condition.

## Abstract 48

**Childhood Obesity: The Role of Self-Concept in Motivation to Change**

Amy Beck, Aileen A. Vedda, Ludmila Zaytsev, Psychology, Loma Linda University, Loma Linda, CA, Kim Hamai, Pediatrics, Loma Linda University Children's Hospital, Loma Linda, CA, Mary Catherin Freier, Psychology and Pediatrics, Loma Linda University, Loma Linda, CA

Purpose: Prevalence of pediatric obesity is on the rise. Understanding facilitators of change among youth is essential for intervention. The impact of physical and psychological factors on motivation to change was examined in participants of a pediatric obesity program. Methods: Overweight children participating in a 12-week program targeting both physical and psychosocial functioning completed an intake evaluation, which included: Piers-Harris Self-Concept Scale (PH), Readiness for Change Questionnaire (RFC), and body fat percentage. PH scales, which suggested more negative self-perceptions were Popularity, Intellectual and Social Status, and Physical Appearance and Attributes. The RFC factors include Cognitive (awareness of a problem and consideration of change) and Emotional (identification of feelings and situations that promote change). Correlations were used to investigate relationships. Results: No significant correlations between percentage of body fat and RFC factors were found. The Popularity scale significantly correlated with the Emotional RFC factor ($r=.35$, $p<.05$, $n=117$). The Intellectual and Social Status scale significantly correlated with the Cognitive RFC factor ($r=.26$, $p<.05$, $n=118$). The Physical Appearance and Attributes scale significantly correlated with both the Cognitive RFC factor ($r=.20$, $p<.05$, $n=118$) and the Emotional RFC factor ($r=.31$, $p<.05$, $n=117$). Conclusion: Although percentage of body fat did not relate to readiness to change, perceptions of social, intellectual, and physical self did. Children who felt more popular (feeling less teased and/or isolated from peers) showed a greater emotional readiness to change. Children who perceived higher intellectual and school status (feeling competent/smart at school) demonstrated a greater cognitive readiness to change. Children with an increased physical perception of self (feelings about appearance) demonstrated both greater cognitive and emotional readiness to change. This study suggests that child_s perception of self is a very powerful motivator for change perhaps more than true physical characteristics. Thus, addressing psychosocial factors is important in pediatric obesity prevention and intervention programs.

## Abstract 49

**Neurobehavioral Assessment Predicts Motor Outcome in Preterm Infants**

Bonnie E. Stephens, Pediatrics, Brown Medical School, Providence, RI, Jing Liu, Barry Lester, Pediatrics, Women and Infants Hospital, Providence, RI, Maternal Lifestyles Steering Committee, NIDA, Bethesda, MD

Purpose: Though survival of infants <= 1250g has improved, incidence of disability has increased. Up to 20% have cerebral palsy (CP) and 29-40% have a Bayley psychomotor development index (PDI) <70 at 18 months corrected age (CA). Yet there is no reliable predictor of poor motor outcomes. The Neonatal Network Neurobehavioral Scale (NNNS)is a standardized neurobehavioral assessment of the high-risk neonate. In cocaine exposed neonates scores correlate with PDI at 12 months. In preterm infants scores may correlate with outcome. There is no conclusive data correlating NNNS and motor outcome in infants born 1250g. The objective of this study was to determine whether NNNS Summary Scores at 44 weeks are predictive of CP at 12-36 months or low PDI at 24 months, in infants born 1250g from the Maternal Lifestyles Study (MLS). Methods: We analyzed data collected on all preterm infants in the MLS who had an NNNS performed at 44 weeks and a neurologic exam at 12-36 months CA (n=395) or a Bayley PDI performed at 24 months CA (n=270). Logisitic regression analyzed NNNS summary scores associated with CP or PDI <70, while controlling for birth weight 1250g. Summary scores were entered into the model as z scores. Criteria for entry into the model was $p<0.05$. Results: 18/395 infants (5%) had CP, and 24/270 infants (9%) had PDI <70 (2 sd below mean). CP was associated with low quality of movement, (OR 1.95, 95% CI 1.24-3.06, p=0.004 ), and high lethargy (OR 1.67, 95% CI 1.01-2.76, p=0.045 ). This model contributed 19% of the variance in diagnosis of CP at 12-36 months ($R2=0.19$, $p=0.000$). Bayley PDI <70 was associated with low handling (OR 1.83; 95% CI 1.12-2.99, p=0.017), low quality of movement (OR 2.16; 95%CI 1.38-3.38, p=0.001), and hypotonia (OR 1.63; 95% CI 1.14-2.32, p=0.007). This model contributed 26% of the variance in PDI <70 at 24 months ($R2=0.26$, $p=0.000$). Conclusion: Findings suggest that the neurobehavioral profile of underarousal in the 44 week preterm infant may be a harbinger of poor motor outcome.

## Abstract 50

**Limited Interactions between Mothers and 6 Month Old Infants During Media Exposure**

Alan L. Mendelsohn, Samantha B. Berkule, Suzy Tomopoulos, Harris S. Huberman, Benard P. Dreyer, Pediatrics, New York University School of Medicine, New York, New York

Purpose: Mother-infant language interactions have the potential to moderate the impact of media exposure on developmental-behavioral outcomes. We sought to assess mother-infant interactions related to media exposure in 6 month-olds and the relationship between these interactions and media content. Methods: Eligible dyads were consecutively enrolled in the post-partum unit of an

urban public hospital. Inclusion criteria: language English or Spanish, no medical complications. Infant media exposure was assessed at age 6 mos with an interviewer-administered recall diary. Information obtained for each program included name, duration, maternal co-viewing, and dyadic interactions (e.g., talking about or singing with the program). Program content was categorized based on industry ratings. Results: 166 dyads viewing 477 programs were assessed at mean (sd) infant age 6.6 (1.0) months. 95.9% reported infant media exposure, with median exposure 120 min. The largest category of exposure was school-age/teen/adult oriented (48.4%). Dyadic Interactions were present for 28.6% of exposures, with educational young child content associated with interaction in 47.2% of exposures compared to 17.0% of school-age/ teen/adult exposures (AOR 5.4, 95% CI 3.0 - 9.9). Interactions were greater for programs that were co-viewed by mothers compared to those that were not for overall exposure (40.3% vs. 7.1%, AOR 3.7, 95% CI 3.7, 15.3) as well as educational young-child programming considered separately (68.4% vs. 15.6%, AOR 10.4, 95% CI 4.3, 24.9). However, educational young-child programming was not associated with increased co-viewing. Conclusion: Dyadic interactions related to media are not common during infancy, even with educational programs. In families with ongoing media exposure, providers should counsel parents to limit television to educational programming that is co-viewed, as co-viewing is most likely to be associated with interactions. Our findings do not support development of infant-directed educational programming in absence of strategies to increase maternal co-viewing. Funded by: NICHD R01 HD047740-02.

## Abstract 51

**Substance Abuse among Children with Learning Disorder (LD) and Attention-Deficit/ Hyperactivity Disorder (ADHD)**

Slavica K. Katusic, Health Sciences Research, William J. Barbaresi, Pediatric and Adolescent Medicine, Robert C. Colligan, Psychology, Amy L. Weaver, Health Sciences Research, Robert G. Voigt, Pediatric and Adolescent Medicine, Mayo Clinic College of Medicine, Rochester, MN

Purpose: Previous research suggests that children with ADHD are at increased risk for substance abuse. There is little information about risk for substance abuse among children with LD-only, ADHD and LD and ADHD-only. Methods: Subjects included incident cases of research identified children with LD-only (N=438), ADHD and LD (N=185), and ADHD-only (N=194) from a 1976-1982 birth cohort (N=5,718). Cases were retrospectively followed from age 5 until emigration, death, high school graduation/dropout. Records from all public and private schools in the community, all sources of medical care and private tutoring centers were abstracted. LD status was determined by two regression based discrepancy formulas from individually administered IQ and achievement tests. Research identified ADHD cases were defined by a model combining three categories of information (DSM-IV criteria, ADHD-specific questionnaires, clinical diagnoses). The date of recorded substance (alcohol/drug) abuse prior to age 18 was abstracted from medical and school records. The association between case status and substance abuse was evaluated by logistic regression. The strength of the association was summarized using odds ratios (OR) and 95% confidence intervals (CI). Results: Substance abuse was significantly different among three groups of subjects ($p<0.001$). Subjects with LD-only were less likely to have documented substance abuse compared to subjects with ADHD-only ($p=0.001$, OR=0.46, 95% CI=0.29-0.74), and subjects with ADHD and LD ($p<0.001$, OR=0.57, 95% CI=0.46-0.72). There was no statistically significant difference between subjects with ADHD and LD compared to ADHD-only ($p=0.17$, OR=1.4, 95% CI=0.8-2.3). There was evidence of a gender by group interaction ($p=0.01$). The results were true for boys. However, there were no statistically significant differences among the three groups of girls ($p=0.95$). Conclusion: These population-based birth cohort data suggest that boys with ADHD (alone or with LD) are at increased risk for later substance abuse compared to boys with LD-only. This important information deserves the attention of clinicians and researchers.

## Abstract 52

**Traumatic Brain Injuries in Preschool Age Children: Initial Impact on the Family**

Terry Stancin, Pediatrics, Case Western Reserve University/MetroHealth Med Ctr, Cleveland, OH, Shari L. Wade, Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, H. Gerry Taylor, Pediatrics, Case Western Reserve University, Cleveland, OH, Keith O. Yeates, Pediatrics, The Ohio State University, Columbus, OH, Nicolay C. Walz, Behavioral Medicine, Lori A. Bernard, Physical Medicine & Rehabilitation, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Purpose: To examine the acute family impact of a traumatic brain injury (TBI) in preschool children compared with children who had an orthopedic injury (OI). Methods: A concurrent cohort/prospective research design was used with repeated assessments of children aged 3-6 years with TBI or OI requiring hospitalization and their families. Parents of 89 children with TBI (21 severe, 22 moderate, 46 mild) and 117 with OI completed the Family Assessment Device to assess preinjury family functioning and the Brief Symptom Inventory (caregiver emotional distress) and Family Burden of Injury Interview (injury related family burden and stresses) within 2 months post injury. Hierarchical regression analyses examined group differences in parental burden and distress. Contrast terms were used to compare levels of TBI severity to the OI group. Results: Compared with parents of preschoolers with OI, parents

of preschoolers with severe and mild TBI reported greater caregiver burden related to the injury. Parents of children with severe TBI also reported more stress with their spouse. Severe TBI was associated with higher levels of parental anxiety, depression, and global distress than orthopedic injuries (all p's < .05). Child's age moderated the effects of severe TBI on injury-related burden and distress, with parents of older children (>5 years) reporting significantly higher levels of both than parents of younger children (<5 years). Groups did not differ on pre-injury measures of family functioning suggesting that differences in caregiver stress were not an artifact of pre-injury functioning. Conclusion: Although children with TBI and OI require substantial care in the initial months following injury, parents of young children with severe TBI report greater psychological distress and burden. Moreover, TBI in older children (5-6) is associated with greater distress, perhaps due to additional concerns with school re-entry and academic performance. Understanding the role of the social environment in recovery from TBI in young children has critical implications for developing interventions.

## Abstract 53

**Prenatal depression and antidepressant use: Effects on fetal behavior**

Amy L. Salisbury, Pediatrics, Brown University/Women & Infants Hospital, Providence, RI

Purpose: Recent studies suggest that gestational exposure to serotonin reuptake inhibitors (SSRIs) is associated with transient adverse neonatal symptoms consistent with serotonin discontinuation syndrome (withdrawal) seen in adults. This study examined fetal neurobehavior to determine if SSRI-exposed fetuses show differential autonomic and behavioral patterns prior to withdrawal of the medication. Methods: 82 pregnant women ages 18-40 were enrolled in the study before 28 weeks gestational age (wks GA). Psychiatric diagnoses of major depression (MDD) and other disorders were made or confirmed using a semi-structured interview. Fetal neurobehavior was observed, recorded, and coded at 26 and 36 wks GA using ultrasound and fetal actocardiograph monitoring for 60 minutes (40 min baseline, 3 sec vibroacoustic (VAS) stimulus, 20 min post-stimulus). Analyses were conducted using 2 (SSRI) X 2 (MDD) ANCOVA_s, forming 4 groups: a no-exposure control group (CON), a SRI-exposed/no MDD group (effectively treated; SSRI-only), a MDD/No SRI group (MDD) and a group with both exposures (SSRI+MDD). Results: At 26 weeks GA, SSRI-exposed fetuses had less activity ($F=14.95$, $p<.001$) and more jerky movements ($F=6.75$, $p<.02$) than non SSRI-exposed fetuses. SSRI-only fetuses showed a decrease in activity after the VAS, while the CON and MDD fetuses showed an increase in activity ($F=2.26$, $p<.05$) after the VAS. At 36 weeks GA, SSRI+MDD fetuses showed minimal reactivity to the VAS, while the SSRI-only fetuses showed a heightened response to the VAS for both FHR ($F=2.47$, $p<.05$) and activity ($F=4.18$, $p<.002$). Conclusion: Prenatal SSRI exposure appears to have an effect on the fetus. Although both SSRI groups showed differences from the CON and MDD groups, infants exposed to both maternal MDD and SSRIs appear to be the most affected. These results are preliminary, but indicate that neurobehavioral differences attributable to SSRIs may begin in utero, before withdrawal of the SSRI. These effects may be influenced by the presence of maternal MDD. Further study of fetal neurobehavioral development in SSRI-exposed fetuses is warranted.

## Abstract 54

**The Relationship of Parental-Provider Language Concordance and the Quality of Pediatric Preventive and Developmental Health Care**

Alexy D. Arauz Boudreau, Massachusetts General Hospital Dept. Pediatrics, Harvard Medical Scool, Boston, MA, Christina Fluet, Massachusetts General Hosptial Dept. Pediatrics, Harvard Medical School, Boston, MA, Colleen Rueland, Child and Adolescent Health Measurement Initiative, Oregon Health & Science University, Portland, OR, Kuhlthau Karen, Massachusetts General Hospital Dept. Pediatrics, Harvard Medical School, Boston, MA

Purpose: Most recommended preventive and developmental care is provided in the context of discussions between pediatric providers and parents. Methods: We conducted a cross-sectional survey using the Promoting Healthy Development Survey,© to compare the quality of care Latino children receive in language concordant and discordant parent-provider dyads. Families from three health centers with children ages 9-50 months were surveyed by phone or mail in Spanish or English according to respondent's preferences. The primary medical providers were separately surveyed to obtain provider characteristics. We assessed the relationship between quality and language concordance using multilevel regression models. Results: Eligible Latino families completed 463 surveys, for a response rate of 44% among low-income minorities. Children in concordant dyads had higher quality mean scores (66 vs., 59; scale 0-100; $p=.04$) for provider assessment of family social environment (FSE). This domain assesses parental depression, firearm possession, and substance use. In adjusted analysis language concordance no longer was associated with quality of care. However, interpreters increased the mean scores of the FSE domain by 12.5 points ($p= .02$) and the likelihood of discussing 80% of anticipatory topics assessed (OR 2.38; CI: 1.08-5.62), though interpreters did not affect family's report of having their anticipatory guidance and parental education needs met. In multilevel analysis providers who rated themselves as being very effective in caring for Latino patients vs. those who rated themselves less than very effective, received higher scores in the domains of family centered care (+ 9.0 points; p-value: 0.03) and helpfulness of care ( +16.3 points; $p=.02$). Conclusion: Among a highly concentrated Latino population,

language concordance does not affect the quality of primary care, though interpreters do affect the quality of care in domains that characterize what content is delivered. Provider self reported effectiveness increases quality scores in domains that characterize how content is delivered. This study suggests cultural sensitivity, as measured by a provider's perception of effectiveness in caring for a specific ethnic population, can transcend language barriers and can be acquired separate from language skills.

## Abstract 55

**Improving Primary Care Pediatrician Management of Behavior Problems: Impact of Location of Services**

Beth G. Wildman, Psychology, Kent State University, Kent, OH, Diane Langkamp, Division of Developmental and Behavioral Pediatrics, Children's Hospital Medical Center of Akron; NEOUCOM, Akron, OH, Robert Dempster, Elissa Lampe, Psychology, Kent State University, Kent, OH

Purpose: Primary care pediatricians (PCPs) fail to identify approximately half of the 20% of children who present with psychosocial problems, and actively treat only a small percentage of the children whom they identify. Literature suggests that integrating behavioral health services into primary care may increase PCP identification and referral of these children. However, there is a lack of data on the impact of integrating services. The present study compared the rates of scheduled and attended appointments for two types of integrated care to referral as usual to the same evidence-based parenting program for externalizing behavior problems in children aged 2 -12 years. Methods: Two primary care pediatric practices had the parenting program (Positive Parenting Program; Triple P) available within the practice (on-site; 7 PCPs), and two practices had Triple P available in the community through a dedicated referral phone line (off-site; 6 PCPs). Triple P was available at the hospital for all pediatric practices in the region. Results are based on 11,213 and 9,704 visits for well and acute care in the on-site and off-site conditions, respectively. Results: 55 families (.49%) and 17 families (.175%) had appointments scheduled for Triple P in the on-site and off-site conditions, respectively. The rate of scheduled appointments and attendance was significantly higher in the on-site versus off-site condition ($c2 = 15.08$; $p<.0001$; OR = 2.81; 95% CI (1.63,4.84), $c2= 7.95$; $p<.005$; OR = 2.35; 95% CI (1.27,4.35), respectively for scheduled and attended appointments. Only 1 child was referred to Triple P as usual from among the 20 PCPs in the remaining practices. Conclusion: The availability of behavioral parenting training in the primary care setting, as well as through dedicated referral services, resulted in increased rates of scheduled and attended appointments, both conditions far exceeding the rate of scheduled appointments in a traditional referral system. Services located in the primary care practice resulted in significantly higher rates of scheduled and attended appointments. These results support the development and evaluation of behavioral health services within primary care practices.

## Abstract 56

**Influence of Foster Placement on Developmental Outcomes in Infants with In-Utero Methadone Exposure**

Jo-Ann B. Bier, Complex Care Services/General Pediatrics, Children's Hospital Boston/Harvard Medical School, Boston, MA, Theresa Johnson, Physical Medicine, Doranne Grenon, Maternal and Child Health, Ellen Mullane, Social Work, St. Luke's Hospital, New Bedford, MA

Purpose: We have shown previously that maternal methadone use places infants at risk for impaired developmental outcomes. Moreover, mothers with a history of drug addiction may have difficulty providing optimal care for their high risk infants following hospital discharge. The purpose of this study is to determine the relationship between the discharge placement of infants with in-utero methadone exposure and developmental outcome during their first year of life. Methods: Sixty-eight infants with in-utero methadone exposure have been enrolled to date in a prospective study examining their growth and developmental outcome during infancy. Infants were divided into two groups: those discharged with their biological mothers (n=45) and those discharged into foster placement (n=23). Follow up data at 4 and 8 months corrected age included growth parameters and developmental testing. Standardized testing included the Bayley Scales of Infant Development and the Alberta Infant Motor Scale (AIMS). Results: Infants placed in foster care were of lower gestation (36±3 vs. 38±4 weeks; $p<0.05$) and lower birth weight (2819±625 vs. 2325±592; $p<0.025$). There were no differences in maternal age (27±6 vs. 28±5 years), maternal methadone dose (96±54 mg vs. 110±80 mg), and the number of infants who presented with neonatal abstinence syndrome requiring treatment (40/45 and 20/23, Home vs. Foster placement). There were no differences in growth parameters between the groups at 4 and 8 months. Four and 8 month Bayley MDI and AIMS scores (%) are shown in table. Regression analysis confirmed a significant relationship between discharge into foster placement and a higher 8 month AIMS score ($R=0.4$, $p<0.025$). Conclusion: Infants with in-utero methadone exposure, despite having lower gestational age and lower birthweight, have higher 8 month developmental outcomes when placed in foster care. Strategies aimed at supporting the birth mother's ability to nurture her infant's early development are crucial in the discharge planning process

| | Home | Foster placement | P |
|---|---|---|---|
| 4 mos MDI | 93 ± 12 | 96 ± 7 | ns |
| 8 mos MDI | 92 ± 13 | 96 ± 8 | ns |
| 4 mos AIMS | 38 ± 24 | 37 ± 24 | ns |
| 8 mos AIMS | 36 ± 23 | 56 ± 22 | <0.025 |

Abstract 57

**Mothers' Postpartum Expectations for Shared Reading: Implications for Reading Activities at 6 Months**

Samantha B. Berkule, Benard P. Dreyer, Harris S. Huberman, Alan L. Mendelsohn, Pediatrics, New York University School of Medicine, New York, New York

Purpose: While programs such as Reach Out and Read begin as early as 6mos, there is limited information about factors related to initiation of reading in infancy. We sought to determine whether mothers' attitudes and resources following birth related to shared reading predict later reading behaviors with 6-month-olds. Methods: Dads were enrolled in the postpartum unit of an urban public hospital. We assessed attitudes and resources related to shared reading: anticipated age of beginning to read aloud, activities planned in infancy for school success, number of baby books in home. At 6mos, we assessed shared reading behaviors (StimQ-Infant READ). We performed multiple regression analyses assessing associations between birth attitudes/resources and 6mo behaviors adjusting for birth order, education, language, marital status. Results: 173 mother-infant dyads were assessed at birth and at mean(sd) 6.4(.7) mos (44% of mothers HS grads, 72% Spanish speaking). Earlier anticipated age of shared reading, plans to read as a strategy for school success, and baby books in the home following birth, respectively, were associated with higher 6mo StimQ READ (sr=.30, p<.001; sr=.15, p=.05; sr=.23, p<.001), more baby books in the home (sr=.14, p<.05;sr=.18, p<.001; sr=.18, p<.001) and more frequent reading aloud (sr=.14, p<.05; sr=.13, p<.06; sr=.14, p<.05). Cumulative number of attitudes/resources predicted higher 6mo StimQ READ (sr=.35, p<.0001) and increased likelihood of shared reading (AOR=6.3, p<.001 for 2-3 attitudes/resources compared to 0-1). Conclusion: Mothers' plans and resources for shared reading reported following birth were associated with shared reading behaviors at 6mos. Pediatricians and other providers should consider provision of anticipatory guidance about shared reading prior to 6 mos, and possibly prenatally. NICHD R01 HD047740-02

change the outcome®

## FACULTY POSITIONS FOR PHYSICIANS AND PSYCHOLOGISTS

The Division of Developmental and Behavioral Pediatrics at Cincinnati Children's Hospital Medical Center, a 25-faculty team within a division of approximately 130 professionals of multiple disciplines, is seeking physicians and psychologists with expertise in developmental-behavioral pediatrics or neurodevelopmental disabilities to join our growing team.

The division has made a major commitment for recruitment of research and academic faculty, offering protected time and research start-up funds to qualified applicants. Funding is also available to support the creation of new clinical programs. Construction of a new building to house the division's activities is planned to open in the fall of 2009.

**About the Division and Cincinnati Children's**

Through various exemplary programs, the Division of Developmental and Behavioral Pediatrics provides diagnosis, comprehensive evaluation, treatment, training and education for infants, children, and adolescents with developmental disorders and developmental and behavioral problems. Our faculty are engaged in a wide range of clinical, translational and basic research projects, and teach residents and fellows.

Cincinnati Children's Hospital Medical Center, dedicated to serving the healthcare needs of infants, children and adolescents, seeks to be the leader in improving child health. With 475 beds, Cincinnati Children's provides clinical, research and teaching programs that ensure delivery of the highest quality pediatric care to our community, the nation and the world.

**To Apply: Interested individuals may send a letter of inquiry and CV to:**

David J. Schonfeld, MD
Professor, Director of Developmental and Behavioral Pediatrics
Cincinnati Children's Hospital Medical Center
3333 Burnet Avenue, MLC 4002
Cincinnati, OH 45229-3039
513-636-3174
david.schonfeld@cchmc.org

Cincinnati Children's® Hospital Medical Center

www.syhc.org

## DEVELOPMENTAL-BEHAVIORAL PEDIATRICIAN

San Ysidro Health Center (SYHC) is a nonprofit community health center located in San Diego that has provided low cost, high quality comprehensive primary care services to a diverse patient population for almost 40 years. The health center has grown steadily, driven by the community's need for essential health and social services. In addition to the main campus located in the border community of San Ysidro, SYHC has four satellite clinics that are strategically located to serve the medical and dental needs of the at-risk, low-income minority population living in Southern San Diego County.

Currently, SYHC is constructing a new state-of-the-art 25,000 square foot Maternal Child Health Center, which is already being called an innovative paradigm for comprehensive family services. A Behavioral-Developmental Pediatrics Service is an integral component of the new center.

SYHC has an immediate opening for a Developmental-Behavioral Pediatrician to support our Maternal Child Health Program. Bilingual English/Spanish strongly preferred.

Candidates interested in this challenging but rewarding position, please submit cover letter and resume to:

**Matthew G. Weeks, M.D.**
**Chief Medical Officer**
**San Ysidro Health Center**
**4004 Beyer Blvd.**
**San Ysidro, CA 92173**

**Fax 619.205.6373 | Email mweeks@syhc.org**

# DIRECTOR, CENTER FOR HUMAN DEVELOPMENT

Royal Oak, Michigan--William Beaumont Hospital is seeking a BC developmental-behavioral pediatrician with experience managing a multidisciplinary team to become Director of its Center for Human Development (CHD) and the Polk Family Endowed Chair in Developmental-Behavioral Pediatrics, effective July 1, 2008. The CHD has experienced significant growth as a diagnostic facility and as a treatment facility. Staff include 2 developmental–behavioral pediatricians (including the director) 2 part-time child and adolescent psychiatrists, 4.5 FTE clinical psychologists, and a clinical social worker. We also have part-time tutoring and counseling staff and psychologists in our HOPE Center program for the treatment of preschoolers with autism spectrum disorders. Further information about the CHD can be found at www.beaumonthospitals.com/chd. Competitive salary, excellent benefits. Contact: M. Jeffrey Maisels, M.D., Chairman, Department of Pediatrics, at 248-551-0412 or jmaisels@beaumont.edu.

# Advertisements

## DEVELOPMENTAL & BEHAVIORAL PEDIATRICIANS

**Children's Specialized Hospital**, the nation's largest pediatric rehab facility, is seeking two full time BC/BE DB Pediatricians to join its established faculty of 8 Developmental Pediatricians.

The ideal candidates will provide assessment, treatment and longitudinal management of children with various developmental disorders. We are the largest provider of services to children with developmental disabilities in the State of NJ, and provide multi-disciplinary care for special needs children with our team of sub-specialists including pediatric neurologists, child psychiatrists and pediatric physiatrists, as well as allied healthcare professionals including psychologists, nurse practitioners and physical, occupational and speech therapists. Expertise in attention and learning problems, autism, mental retardation and other disruptive behaviors is desired.

**For immediate consideration, interested individuals should submit curriculum vitae via fax (908)301-5587, email: fcastello@childrens-specialized.org, or mail to: Children's Specialized Hospital, Attn: Dr. Frank Castello, Medical Director, 150 New Providence Road, Mountainside, NJ 07092.** EOE

Children's Specialized Hospital
An Affiliate Member of the Robert Wood Johnson Health System

childrens-specialized.org

## NEONATAL NEURODEVELOPMENTAL

FOLLOW-UP PRACTICE

### Immediate Opening in DALLAS, TX

Seeking a BC Pediatrician (i.e. Neurodevelopmental Pediatrician, Developmental Behavioral Pediatrician, Pediatric Physiatrist, Pediatric Neurologist, Neonatologist, Geneticist or General Pediatrician with significant experience) with special interest and experience in neurodevelopmental and behavioral follow-up of premature and critically ill infants and children. This office-based practice is part of Pediatrix Medical Services, a leading physician group of neonatologists, perinatologists, neonatal/pediatric nurse practitioners, pediatric cardiologists, and hospitalists in metropolitan Dallas. Primary duties are to provide outpatient neurodevelopmental assessment and treatment for infants through middle childhood age, and oversight of pediatric nurse practitioners providing inpatient care. The practice's extensive referral base includes five of the city's busiest NICUs. The patient population is a typical mix of developing premature infants and children with neurodevelopmental disabilities, including cerebral palsy, autism, mental retardation, chromosome disorders, congenital anomalies (including heart defects), learning disabilities and ADHD. This is a wonderful practice with multiple opportunities for teaching and supported research.

Pediatrix Medical Group, offers a competitive salary and excellent benefits package to include: health, life and dental insurance, CME allowance, 401(k), stock purchase plan, professional liability insurance, relocation assistance and lucrative sign-on bonus. For more information, contact Cindy Sowinski at Pediatrix Medical Group; 800.243.3839 ext. 5210; Fax: 877.780.4242; cindy_sowinski@pediatrix.com.

*An Equal Opportunity Employer*

**www.pediatrix.com**

**800.243.3839 • toll free** **877.780.4242 • toll free fax**

## SEEKING A DEVELOPMENTAL/BEHAVIORAL PEDIATRICIAN

The Department of Pediatrics at the University of Texas Medical Branch is seeking a Developmental/Behavioral Pediatrician. This position offers an opportunity to refine and develop the clinical practice and educational curriculum for medical students and residents. Clinical care will be provided within the medical school complex and neighboring satellite clinics. Opportunities are available for conducting scholarly activities within the individual's area of interest.

Required qualifications include an M.D. or D.O. degree and fellowship training, American Board of Pediatrics certification, Board certified in DBH or board eligible in DBH with anticipation of board certification within two years of hire.

For more information, contact Cody Futch, at 800.876.0500 or Susan L. Rosenthal, PhD (slrosent@utmb.edu). You may also fax or email your CV to the attention of Cody Futch at 972.983.0715 or info@mhagroup.com. Please reference PDB-153722. This institution is an equal opportunity, affirmative action organization which proudly values diversity. Candidates of all backgrounds are encouraged to apply.

**Fellowship Director, Developmental Behavioral Pediatrics**: The Department of Pediatrics at the University of California, Davis, is recruiting a full time academic faculty member at the Associate or Professor level in the Clinical Pediatrics series to join the Section of Developmental Behavioral Pediatrics at the M.I.N.D. Institute, a multidisciplinary clinic and research institute, and to participate in the expansion of the newly established UCDavis University Center for Excellence in Developmental Disabilities. The section has an accredited developmental behavioral fellowship program and is associated with a NIH funded Autism Research Training Program. In addition to fellowship administration, this position will include resident and medical student training, clinical and research activity. The M.I.N.D. Institute and the UCDavis UCEDD provide rich opportunities for many ongoing clinical as well as basic research activities in collaboration with investigators across the UCDavis campus. The UCDavis Medical Center campus is located in Sacramento, the state capital, with ready access to the recreational resources of the Sierra Nevada, Pacific coast and California wine country. For more information, interested parties should send a curriculum vitae and/or contact: Robin Hansen, MD. Developmental Behavioral Pediatrics, UCDavis ; 2825 50th Street/Sacramento, California 95817.
Email: robin.hansen@ucdmc.ucdavis.edu
Phone: 916-703-0248

# Advertisements

THE COMMONWEALTH FUND

## *Funding Announcement*

The Commonwealth Fund is interested in receiving proposals for research that will enhance the ability of primary care providers to offer better quality preventive care and developmental services to young children.

The Fund is particularly interested in improving the quality of anticipatory guidance and parent education, care coordination between primary care practices and community resources to serve children with or at risk for developmental problems, and screening for developmental problems and family risks.

Projects could address the current status of care in these areas, contribute to the establishment of standards of care, evaluate clinical tools, approaches or exemplary models of care, or address policy barriers.

Instructions for submitting a letter of inquiry are available at http://www.commonwealthfund.org/loi/, or investigators may contact Edward Schor, M.D., Director, Program for Child Development and Preventive Care at ELS@cmwf.org or (212) 606-3847.

**The Division of Developmental and Behavioral Pediatrics at UMASS-Memorial Children's Medical Center** and the **University of Massachusetts Medical School** has an opening for a full-time academically-oriented Developmental-Behavioral Pediatrician at the Assistant or early Associate Professor level. The Division is composed of full-time and part-time professional faculty, and is closely allied with a large, regional Early Intervention Program. Opportunities exist to develop new clinical and research initiatives, or to collaborate with existing programs that cross a broad spectrum of DBP topic areas. Responsibilities include clinical care in subspecialty area, teaching medical students, pediatric residents and other post-graduate students, and the initiation/continuation of research. Candidates should be Board-Certified or Board-Eligible in Pediatrics and Developmental/Behavioral Pediatrics, have a strong interest in clinical care, teaching and a clear commitment towards research. The Department of Pediatrics is a growing, vibrant setting for professional development. The Medical Center is located 40 miles west of Boston, with easy access to all that the New England region has to offer. Salary is very competitive and the benefits package is generous. Interested applicants should submit a C.V. and all inquiries to : Dr. William Garrison, Director of Developmental and Behavioral Pediatrics, UMASS-Memorial Children's Medical Center, A2-215, 55 Lake Avenue North, Worcester MA 01655. Contact info: garrisow@ummhc.org; 508-856-3028/3149; Fax 508-856-6740. UMASS-Memorial Healthcare and the University of Massachusetts Medical School are Equal Opportunity / Affirmative Action Employers.

UMass Memorial Children's Medical Center

## Looking for a UNIQUE Private Practice Opportunity?

Recruiting a Pediatric Board-certified or Board-eligible Developmental-Behavioral Pediatrician with a particular interest and experience in the diagnosis/treatment of Autistic Spectrum Disorders to join a well-established private outpatient Clinic with 3 physicians and 9 psychologists. Fulltime or part-time position with ample opportunity to care for other neurodevelopmental and behavioral conditions as well. Clinical faculty affiliation with the Oklahoma University Health Sciences Center-Tulsa or part-time academic faculty position (depending upon qualifications), and research opportunities are available. Located in Tulsa, OK with all pediatric subspecialties and support services available (SLT, OT/PT, Psychologists, ABA, Floortime, etc.), our Clinic is recognized as the regional leader in serving special needs children and their families from Oklahoma and surrounding States. TDP&CFP is an AA/EOE and applications will be received until the position is filled. Candidates should submit a letter of inquiry and CV to: Richard C. Irwin, M.D., F.A.A.P., Tulsa Developmental Pediatrics & Center for Family Psychology, 4520 So. Harvard, Ste. 200, Tulsa, OK 74135, 918-743-3224 ext. 100, 918-743-9623 (FAX), rirwin123@aol.com.

SDBP

Society for Developmental & Behavioral Pediatrics

6728 Old McLean Village Drive ◆ McLean Village Drive ◆ McLean, VA 22101
(703) 556-9222 ◆ (703) 556-8729 ◆ info@sdbp.org ◆ www.sdbp.org

# Save the Date

## 2008 SDBP Annual Meeting

### October 16 - 20

### Cincinnati, OH