"Early Brain and Child Development: Translating Science Into Advocacy"

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AAP Early Brain and Child Development Workgroup
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We do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.
EBCD Work Plan

1. Content Messaging
   - Establish consistent messaging
   - Disseminate and communicate EBCCD message

2. Advocacy
   - Promote State/Chapter level EBCCD leadership

3. Create coalitions within the AAP for EBCCD
   - ALF: Councils, Sections, Committees
EBCD Work Plan

4. Clinical Practice Transformation
   - EBCD - Education agenda
     • Peds 21 2013 EBCD
     • Mind in the Making” Project – Ellen Galinsky
     • Webinars
   - Promote practice-based skills
     • Bright Futures Revision
     • EBCD Competencies

5. Practice System Transformation
   - Ensure EMR support for EBCD
   - Remove payment barriers (COPAM, Pediatric Councils)
   - Develop QI activities strategy for EBCD
EBCD Work Plan

6. Broadening our Community Connections around EBCD

– AUSP VI Conference Manila, Cal Sia
– ZERO TO THREE
– Canadian Pediatric Society
– AAP’s Head Start National Center on Health
– ReadyNation, America’s Promise
AAP EBCD Policy Statement


EBCD Technical Report

“The Lifelong Effects of Early Childhood Adversity and Toxic Stress,” Pediatrics, 129: (1); January 2012.
Eco-biodevelopmental Model

- Genetics, Nutrition, Neurobiology
- Environmental, and Relational Experiences
- Culture
- Physical, Social and Mental Well-being
- Childhood Experience
- Behavior
- Brain/Mind/Body
Ecology becomes biology, and together they drive development across the lifespan.
What determines health?

**Biological**
- Genetics
- Pre-and perinatal factors
- Physical health
- Gender
- Trauma

**Psychological**
- Relations with parents/siblings
- Family dynamics
- Personality
- Resilience
- Adaptability

**Social/Cultural**
- SES
- Family stability
- Social capital
- Work/employment
- Value system
- Neighborhood/Housing
- Religion
- HC Policy
- HC System
How Early Experience Gets Into the Body
A Biodevelopmental Framework

Foundations of Healthy Development and Sources of Early Adversity

Environment of Relationships
Physical, Chemical & Built Environments
Nutrition

Gene-Environment Interaction
Cumulative Effects Over Time

Physiological Adaptations & Disruptions

Biological Embedding During Sensitive Periods

Lifelong Outcomes
Health-Related Behaviors
Educational Achievement & Economic Productivity
Physical & Mental Health

Center on the Developing Child
HARVARD UNIVERSITY
We’re in the “building health and developmental assurance” business.....

Physical health
Developmental health
Relational health
Current Conceptual Framework Guiding Early Childhood Policy and Practice

Significant Adversity

Healthy Developmental Trajectory

Impaired Health and Development

Supportive Relationships, Stimulating Experiences, and Health-Promoting Environments
Significant Adversity Impairs Development in the First Three Years

Number of Risk Factors

<table>
<thead>
<tr>
<th>Number of Risk Factors</th>
<th>Children with Developmental Delays</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>40%</td>
</tr>
<tr>
<td>4</td>
<td>60%</td>
</tr>
<tr>
<td>5</td>
<td>80%</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Barth, et al. (2008)
Family Income Affects School Readiness

Achievement Gap as Children Enter Kindergarten

Disparities in Early Vocabulary Growth

School Readiness Skills in 3-6 yo by Race and Ethnicity 2007

- Recognizes all letters
  - White non-Hispanic: 36
  - Black, non-Hispanic: 38
  - Hispanic: 43
  - Asian or Pacific Islander: 15

- Counts to 20 or Higher
  - White non-Hispanic: 69
  - Black, non-Hispanic: 69
  - Hispanic: 42
  - Asian or Pacific Islander: 76

- Writes Name
  - White non-Hispanic: 64
  - Black, non-Hispanic: 58
  - Hispanic: 50
  - Asian or Pacific Islander: 66

- Reads or Pretends to Read
  - White non-Hispanic: 8
  - Black, non-Hispanic: 16
  - Hispanic: 3
  - Asian or Pacific Islander: 8
# Young Children Not Succeeding in School

(Characteristics of Ages 0 – 3, Subsequently Retained or BB on PACT)

<table>
<thead>
<tr>
<th>(%) Not Succeeding</th>
<th>High Risk Group</th>
<th>(%) of 1995-96 Birth Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>53%</td>
<td>Abused, Neglected, or in Fostercare</td>
<td>3%</td>
</tr>
<tr>
<td>52%</td>
<td>Very Low Birthweight (under 1500 grams)</td>
<td>1.4%</td>
</tr>
<tr>
<td>48%</td>
<td>Lower Educated Mother (under 12 grades)</td>
<td>25%</td>
</tr>
<tr>
<td>45%</td>
<td>TANF</td>
<td>17%</td>
</tr>
<tr>
<td>43%</td>
<td>LBW (1500 - 2000 grams)</td>
<td>1.8%</td>
</tr>
<tr>
<td>43%</td>
<td>Teen Mother (under 18)</td>
<td>8%</td>
</tr>
<tr>
<td>42%</td>
<td>Food Stamps</td>
<td>32%</td>
</tr>
<tr>
<td>37%</td>
<td>Mother (age 18 - 20)</td>
<td>17%</td>
</tr>
<tr>
<td>36%</td>
<td>LBW (2000 - 2500 grams)</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Low Risk Group**

| 16%               | Higher Educated Mother (more than HS)               | 34%                          |

Source: ORS Data Warehouse files from DHEC Vital Records and DSS linked to SDE PACT data.
Developmental Trajectory Index

- Neurodevelopmental
- Social-economic
- Relational
Adversity/Toxic Stress

“Social-emotional buffering is the primary factor distinguishing level of stress”
Andy Garner, MD, COPACFH

• Toxic stress occurs when there is an absence of social-emotional buffering

• Metric for adversity is the body’s stress response system

• Implications: “Toxic stress is the key intergenerational transmitter of social and health disparities”
ACE STUDY

Adverse Childhood Experiences Are Common

### Household dysfunction:

<table>
<thead>
<tr>
<th>Experience</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance abuse</td>
<td>27%</td>
</tr>
<tr>
<td>Parental sep/divorce</td>
<td>23%</td>
</tr>
<tr>
<td>Mental illness</td>
<td>17%</td>
</tr>
<tr>
<td>Battered mother</td>
<td>13%</td>
</tr>
<tr>
<td>Criminal behavior</td>
<td>6%</td>
</tr>
</tbody>
</table>

### Abuse:

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological</td>
<td>11%</td>
</tr>
<tr>
<td>Physical</td>
<td>28%</td>
</tr>
<tr>
<td>Sexual</td>
<td>21%</td>
</tr>
</tbody>
</table>

### Neglect:

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>15%</td>
</tr>
<tr>
<td>Physical</td>
<td>10%</td>
</tr>
</tbody>
</table>
Adverse Childhood Experiences Score

Number of categories of adverse childhood experiences are summed ...

<table>
<thead>
<tr>
<th>ACE score</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>48%</td>
</tr>
<tr>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>4 or more</td>
<td>7%</td>
</tr>
</tbody>
</table>

- More than *half have at least one ACE*
- If one category of ACE is present, there is an 86% likelihood of additional categories being present.
Odds for Academic and Health Problems with Increasing ACEs in Spokane Children

<table>
<thead>
<tr>
<th></th>
<th>Academic Failure</th>
<th>Severe Attendance Problems</th>
<th>Severe School Behavior Concerns</th>
<th>Frequent Reported Poor Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three or More ACEs N =248</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Two ACEs N=213</td>
<td>2.5</td>
<td>2.5</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>One ACE N=476</td>
<td>1.5</td>
<td>2</td>
<td>2.5</td>
<td>2</td>
</tr>
<tr>
<td>No Known ACEs =1,164</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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Percent of Students with One or More Academic Concerns by ACE Exposure

<table>
<thead>
<tr>
<th>Percent of Students with Academic Problems</th>
<th>No Known Adverse Events</th>
<th>One Reported Adverse Event</th>
<th>Two Reported Adverse Events</th>
<th>Three or more Adverse Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or More Academic Concerns</td>
<td>34%</td>
<td>56%</td>
<td>71%</td>
<td>80%</td>
</tr>
</tbody>
</table>

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The Impact of ACE on an Urban Pediatric Population
(N = 451)

Burke et al, 2011
AAP’s EBCD Initiative

“Building Brains, Forging Futures”

“It’s all about Nurturing Relationships: Early relationships build their brains and our future.”

Urgency……

Pediatrician’s essential role…..
EBCD Focus

• Promoting the healthy early childhood foundations of life-span health
• Promoting kindergarten readiness
• Promoting preventative mental health
• Mitigating toxic stress effects on health and developmental trajectories
• Strengthening the systems to address the social determinants of health
Building an Enhanced Theory of Change that Balances Enrichment and Protection

Significant Adversity

New Protective Interventions

Healthy Developmental Trajectory

Supportive Relationships, Stimulating Experiences, and Health-Promoting Environments
Core Story of EBCD

• Child development is the foundation for community and economic development

• Brains are built over time – prenatally to young adulthood

• Brain architecture is built in a cumulative, bottom-up manner, a solid foundation is required for future skills

• A dynamic dance between genes and experiences shapes the architecture of the developing brain

Adapted from the Alberta Family Wellness Initiative 2010
Core Story of EBCD con’t

• Brain development is integrated; the areas underlying social, emotional and learning skills are inextricably connected and rely upon each other

• Toxic stress disrupts the developing brain and has lifelong effects on learning, behavior and health

• Positive parenting and nurturing emerging social, emotional, and language skills buffers toxic stress and builds resilience by promoting healthy, adaptive coping skills

• Creating the right conditions in early childhood is more effective and far less costly than addressing a multitude problems later on in life

Adapted from the Alberta Family Wellness Initiative 2010
Promoting the Five R’s of Early Childhood Education

- **READING** together - daily
- **RHYMING**, playing and cuddling
- **ROUTINES** – help children know what to expect of us - what is expected of them
- **REWARDS** for everyday successes – PRAISE is a powerful reward
- **RELATIONSHIPS**, reciprocal and nurturing – foundation of healthy child development
Using A Public Health Approach to Building Healthy Brains

Social-Emotional Safety Nets
A Public Health Approach to "Toxic Stress"

Universal Primary Preventions
Anticipatory guidance
Consistent messaging
Social supports
Engaging communities High Quality Childcare

Screening and Targeted Interventions
(for those "at risk")
Developmental and Risk Screening
HELP ME GROW
Home Visiting
Head Start
Parenting Education and Support
Early Intervention

Evidence-Based Treatments
(for the symptomatic)
CPP, COS, PCIT; TB-CBT Care
Home Visiting, Parenting Education Care Coordination with EC Communities
Strategies to Improve Developmental Trajectories

What will push children in red and yellow categories towards green?

- Reading to child
- Appropriate Discipline
- Health Services
- Preschool
- Anticipatory Guidance
- Language Stimulation
- High quality ECE
- Specialized services
- Home visiting
- Parent Responsiveness

Age:
- Birth
- 6 mo
- 12 mo
- 18 mo
- 24 mo
- 3 yrs
- 5 yrs

Developmental Progress:
- Early Infancy
- Early Toddler
- Early Preschool
- Pre-school

Trajectories:
- "Healthy" Trajectory
- "At Risk" Trajectory
- "High risk" Trajectory
An Integrated Science of Early Childhood Development Could Drive More Productive Investments Across Sectors

SCIENCE OF EARLY CHILDHOOD

- Health
- Education
- Economic Development
- Human Services
Some steps for EBCD promotion?

- Minimize toxic stress (socioeconomic distress, substance abuse, maltreatment, maternal depression, ACE score)
- Promote positive parenting and supportive relationships for families (social capital, home visitors, relational monitoring)
- Provide an environment for healthy development (avoidance of environmental toxins, optimal nutrition, early literacy promotion, media impacts, prevent catastrophic disease)
- Development enhancing activities (ROR, face time, + interpersonal relationships, quality preschool programs, positive parenting)
- EC coordination with medical homes (medical homes, ECCS grants, home visiting, etc.)
- Screen for families at risk and refer to other community-based services (dev. delay, substance abuse, social capital)
ADVOCACY OPPORTUNITIES

• Carry the urgent message of EBCD to legislators, policymakers and public: an eco-bio-developmental framework explains why early and sustained investments in families with children makes sense ethically, economically, and biologically.

• Advocate for either level or expanded state funding for essential EC programs such as Home Visiting, Quality Child Care, Child Care Vouchers, Reach Out and Read, Universal Preschool – as these are economic investments for education readiness and workforce development.

• Advocate for (and participate in!) local efforts to mitigate or treat the consequences of toxic stress (e.g., Early Childhood Advisory Councils, Traumatic Stress Networks, the recruitment of early childhood mental health professionals and collaborations with them).

• Join, develop or lead partnerships between the business community and state advocacy groups that focus on Workforce Development, Economic Investment, and Kindergarten Readiness agendas (Ready Nation, etc.)
What chapters can do now for EBCD ADVOCACY and LEADERSHIP

• Engage with Early Childhood Advisory Councils
• Participate with “Race to the Top” grants
• Engage w/ ARA-funded State Home Visiting programs
• Build upon State ECCS – Early Childhood Comprehensive Systems Initiatives
• Build on the leadership of Chapter Child Care Contacts - Healthy Childcare America – CCCC EBCD meeting
• Build on ABCD II/III / MH projects
• Engage with Business sector Early Education Initiative
• Establish EBCD chapter leaders/collaborations
THE HECKMAN EQUATION
Investing in early childhood development builds the human capital we need for economic success
Public Investment in Children by Age
State Network

Business leader organizations in many states have started supporting proven investments in early childhood. ReadyNation has sponsored business leader summits and provided other types of assistance to support business leader engagement in over half the states. There are also many other business groups in the states working in early childhood. Click on the map to find out more about business organizations promoting early childhood policy in that state.

Learn more about our National Network of business organizations.

The States at a Glance

Looking for data on your state that illustrates both the status of children and the power of early investment? We recommend the following:

http://www.readynation.org/state-network/
Telluride Standards for Investing in Young Children

The Partnership does not endorse specific early childhood programs or policies; communities and states need to decide for themselves how to invest in children. In order to guide those decisions, however, the Partnership developed five Standards. Applied to any birth-to-5 initiative, the Standards can help indicate which merit public investment:

**Children** -- The life success of every child in America is our highest priority.

**Parent Involvement** -- Involvement of parents, family and other loving adults is crucial to a child's life success.

**Evidence-based** -- Children are helped most and the economy is made strongest when resources are allocated on the best evidence of what will lead to positive child outcomes.

**Evaluation** -- Sound performance evaluations can ensure goals are attained.

**Scalability** -- Child development programs that use private and public incentives and are scalable will be stronger.

Telluride Standards were developed by the Partnership in conjunction with participants of the Telluride Economic Summit on Early Childhood Investment, the Invest in Kids working group and the Partnership Advisory Board.
AAP’s EBCD Initiative

“Building Brains, Forging Futures”

“It’s all about Nurturing Relationships: Early relationships build their brains and our future.”

Urgency……

Pediatrician’s essential role…..
OREGON
Evolution of EC Leadership

- “Neurons to Neighborhood” call to action
- Northwest Early Childhood Institute
  - Convening cross sector leadership
  - Science of Early Childhood conferences
- Expanding strategic partnerships
  - Office of Family Health
  - EI / ECSE
  - Early Childhood Mental Health
  - Commission on Children, Families and Communities
  - Governor’s Office
- Oregon Pediatric Society
Building an Enhanced Theory of Change that Balances Enrichment and Protection

Significant Adversity → Healthy Developmental Trajectory → New Protective Interventions

Supportive Relationships, Stimulating Experiences, and Health-Promoting Environments
Vision for World Class Child Health for Oregon’s Children 2008

- Initial focus on universal access
- State-of-the-art health care provided in integrated health homes - PCMH
- Focus on development, promotion and maintenance of health and healthy lifestyle
- We emphasis developmental and relational health
- We picture a system that monitors each child’s health and developmental trajectory
Vision for World Class Child Health for Oregon’s Children 2008

• We envision a community of partnerships working together to promote health and development

• We seek a system of partnerships that focus on breaking the generational transmission of trauma

• Seek a system that demonstrates commitment to promoting optimum health and development for children not raised by biological families

• A system and society that honors values and generational strengthen of all cultural communities
Actions: Building Health toward Kindergarten Readiness

- OPS’s Vision for World Class Health
  - ABCDII - LAUNCH Grants
  - START - OR Pediatric Improvement Partnership (OPIP)
  - Help Me Grow

- Health Kids Plan – universal child health access

- Governor Kulongowsky’s EC Summit
  - Early Childhood Health Matters Advisory Council
    - Health Matters
    - Family Support Matter
    - Early Education and Child Care Matters
Oregon’s Innovation Opportunities

Election of John Kitzhaber, M.D.
Nov 2010

Universal State Health Reform
Education Reform
Investing in Early Childhood
Economic Development
Oregon’s Early Childhood Design Proposal

Service Delivery and Organization
1. Universal early identification and screening
2. Family Support Managers
3. Regional “hub’s” and elementary school catchments areas

Accountability
4. Kindergarten readiness, 1st grade and 3rd grade reading
5. Integrated data system, outcome-based contracting

Governance
6. Early Childhood Council, Director
7. ACO-Hub alignment, PCPCH metric – Kindergarten readiness
Key drivers of Oregon’s progress

- **Articulated Vision** for building health, developmental and social-emotional capacities
- **Core Story** of EBCD – widely distributed
- **Chapter leadership** (physician and staff),
- **Intentional and strategic partnerships**
  - Leadership: ABCD, Public Health, OPIP, MHTF, LAUNCH
  - Utilities: HELP ME GROW, START, ROR, OPAL-K
  - Data: Cloud Technology, Almaga (Miama-Dade)
- **Key advocacy relationships**
  - Gov Office, OHA, Public Health, EI, other EC advocacy groups
- **Governor’s agenda, legislative champions**
- Newly appointed **Child Health Director**, OHA
Current Oregon EBCD challenges

- Persistent siloing of early education and child health policy transformations
- Adult chronic disease management is driving health reform – requiring strong advocacy for calling out “a building health agenda”
- Political barriers to public-private sector EC innovation and leadership
- Authority/accountability for EBCD outcomes
- CMS policy “barriers” to Oregon’s reform
- Cultural myths of early childhood development
“Innovation lies at the intersection between early childhood systems and child health”

Jack Shonkoff, M.D