GREAT START! ... GREAT FINISH?
Connecting Policy to Developmental Issues of Early Childhood

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Great Start!

Experience organizes neural and behavioral development
Nature Provides: 100 billion possibilities

Experience Decides

1 Final Outcome
Roles of Experience in Neural and Behavioral Development

**Induction:** If experience does not occur, endpoints are not achieved
  - Example: Exposure to English is necessary to learn English

**Canalization:** Increases specificity of responsiveness over time
  - Phonemic expansion and contraction

**Malleability:** Increases plasticity
  - Exposure to multiple languages produces multi-lingual children

**Facilitation:** Hastens the appearance of endpoints
  - Reading to infants accelerates literacy skills

**Maintenance:** Keep achieved endpoints functional
  - The “use it or lose it principle”
Sensory-Perceptual Experiences

Touch
• The sensory cortex can process tactile sensations by the 4th prenatal month

Olfaction
• The fetus can smell amniotic fluid, and at birth can distinguish the mother’s smell from others

Taste
• Newborns prefer sweet, but taste preferences influenced by what mom eats during prenatal period and while breast feeding

Audition
• By 7th prenatal month, fetus can perceive loud noises, and by birth recognizes mother’s voice and prefers it to other voices

Vision
• Slowest to develop, neurons in the visual pathways organize during the first 3 months and gradually thereafter. The visual world for newborns primarily is detecting light/dark and motion, but by 3 months the infant begins to encode visual patterns (faces and objects to which it is exposed) and by 5 months of age “recognizes” familiar caregivers. By 7-9 months, shows preferences for familiar caregivers as visual and emotional systems begin to cross-organize
Experiences Occur in Time, and Time Matters
# Postnatal Sensitive Periods

<table>
<thead>
<tr>
<th>Developmental Process</th>
<th>Maximum Period of Organization</th>
<th>System</th>
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</thead>
<tbody>
<tr>
<td>Motor development</td>
<td>Prenatal to age 4</td>
<td>Exploration</td>
</tr>
<tr>
<td>Emotion regulation</td>
<td>Birth to age 2-3</td>
<td>Self control</td>
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<tr>
<td>Visual processing</td>
<td>Birth to age 2-3</td>
<td>Orienting in space</td>
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<tr>
<td>Emotional attachment</td>
<td>Birth to age 2</td>
<td>Emotional and social systems</td>
</tr>
<tr>
<td>Language acquisition</td>
<td>Birth to age 4</td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognition/thought</td>
</tr>
<tr>
<td>Second language</td>
<td>1 year to age 4</td>
<td>Communication</td>
</tr>
<tr>
<td>Math/logical thinking</td>
<td>1 year to age 4</td>
<td>Cognitive processing</td>
</tr>
<tr>
<td>Music and rhythm</td>
<td>3 years to age 5</td>
<td>Creative expression</td>
</tr>
</tbody>
</table>
Factors Highly Related to Achieving a Great Start!

1. Ongoing nurturing relationships with the same adults
2. Physical protection, safety, and regulation of daily routine
3. Experiences responsive to individual differences in such characteristics as temperament
4. Developmentally appropriate practices related to perceptual-motor, cognitive and social stimulation
5. Limit-setting (discipline), structure (rules and routines), and expectations (for positive outcomes)
6. Stable, supportive communities (violence free) and culture (American and, as appropriate, family origin): a sense of rootedness and connectedness

Brazelton & Greenspan and others
Experiences have Multiple Origins and are Interconnected
Possible Transactional Linkages in a Primary Family System

Barriers to a Great Start: Risk Experiences that Threaten a Great Finish!
Exposure to multiple, inter-related, and cumulative risk factors imposes heavy developmental burdens during early childhood and induces, facilitates, and/or maintains development of dysfunctional behavior patterns.

*From Neurons to Neighborhoods*
National Research Council, Institute of Medicine, 2000
Barriers to a Great Finish: Risk Factors for Infants and Young Children

- Poverty
- Infant and child mortality
- Low birth weight
- Single parents
- Absent fathers
- Substance abusing mothers/fathers
- Transience
- Child abuse and neglect

- Lack of quality child care
- Low wage jobs for parents
- Unemployed parents
- Lack of access to health and medical care
- Low parent education levels
- Poor nutrition
- Lack of contact with English as the primary language
Impact of Early Experience on Later Development

Illustrations from major longitudinal risk studies

- Minnesota Longitudinal Study (20 years – )
- Michigan Longitudinal Study (18 years – )
Minnesota Mother-Child Study, 1975-Present
(Sroufe & Egeland)

Children who received less sensitive care during birth to three:

1. Had more difficulty forming relationships with peers in preschool and early adolescence
2. Had lower school achievement, especially in adolescence
3. Were more likely to require special education (72% by 3rd grade)
4. Had more behavior problems
5. Were more likely to use drugs and alcohol during adolescence
Early drinkers had:

- Weaker family structure (cohesion and organization)
- More negative self-evaluations (school, conduct/morality, global self-worth)
- Weaker family orientations (intellectual-cultural and moral-religious)
- More family conflict
- More internalizing and externalizing behavior problems
- More antisocial behavior
- More association with delinquent peers and peers with CJS contact
- Less association with peers involved in conventional activities

R. Mayzer, Fitzgerald & Zucker
MLS: Children’s Risky Rearing Environments: Preschool to Kindergarten

- Parental history of regulatory system dysfunction
- Parental history of psychopathology
  - Antisocial behavior disorder and aggression
  - Depression
  - Alcoholism and other drug use
- Parental history of relationship disturbances
- Parental poor value structures
- Parental cognitive deficiencies
- Family low socioeconomic status
- Family residence in risk aggregated neighborhoods

Fitzgerald, Puttler, Mun & Zucker, 2000
MLS: Children’s Risky Behavior: Preschool to Kindergarten

• Self regulatory dysfunction
• Difficult temperament
• Attachment (relationship) disorders
• Internalizing/externalizing behavior problems
• Parent-child relationship disturbances
• Schemas for alcohol use and alcohol linked behavior
• Poor value structure
• Cognitive deficiencies
• High risk peer network

Fitzgerald, Puttler, Mun & Zucker, 2000
Prevention: The Key to a Great Finish

Lessons learned from the national and local evaluations of Early Head Start
Child care programs that have the greatest positive impact on young children who are threatened by socioeconomic disadvantage, family disruption, and diagnosed disabilities:

1. Combine child-focused educational activities with explicit attention to parent-child interaction patterns and relationships
2. Have well trained staff and parent partnerships
3. Have carefully designed and developmentally appropriate objectives
4. Have well designed evaluations for continuous quality improvement
The Early Head Start Research and Evaluation Project

• Began in 1995
• 3,001 children and families followed from enrollment in program to child age 3
• Experimental design impact study

Early Head Start

Control Group
Positive Impacts on Child Development

• EHS had positive impacts on indicators of cognitive, language, and physical development
• EHS children less likely to score in the at-risk range on indicators of cognitive development
• Children of program fathers were more engaged and attentive in cognitive tasks
Positive Impacts in Areas of Parenting

• Greater warmth and emotional supportiveness
• Less detachment
• More parent-child play
• More stimulating home environments
• More support for language and learning
• More daily reading
• Less spanking by both mothers and fathers
The Jackson EHS Program

Comparing families in the program group to those in the comparison group
EHS was effective in connecting families to available community services

Families in the EHS group

- Sought more support from service providers
- Had children who received more child development services
- Received additional education and training
- Received employment services
Data from the Statewide Evaluation of All Students Achieve Potential—Parent Involved Education (ASAP-PIE)

Van Egeren, Reed, Bates, Tableman, Barratt, & Fitzgerald, 2004
ASAP-PIE: Percentage of Children Who Met Developmental Expectations at Time 2 from Children Identified as Delayed at Time 1: ASQ

<table>
<thead>
<tr>
<th>Domain</th>
<th>Percent of Children Passing</th>
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<tbody>
<tr>
<td>Communication</td>
<td>69%</td>
</tr>
<tr>
<td>Gross motor</td>
<td>87%</td>
</tr>
<tr>
<td>Fine motor</td>
<td>86%</td>
</tr>
<tr>
<td>Personal-social</td>
<td>83%</td>
</tr>
<tr>
<td>Problem solving</td>
<td>79%</td>
</tr>
</tbody>
</table>

Note: ASQ = Ages and Stages Questionnaire

Van Egeren et al., 2004
Percentage of Children Who Met Developmental Expectations at Time 2 From Children Identified as Delayed at Time 1: IDA  n=159

Van Egeren et al., 2004
Change in Vocabulary: Comparison with Non-ASAP-PIE Samples: n=578

Van Egeren et al., 2004
Experiencing Culture: The Importance of Cultural Competence for Child Care Professionals in an Increasingly Multicultural Society

• Cultural understanding occurs by age 5
• New cultural patterns are learned more easily by young child than others
• Values are determined by culture of origin
• Understanding cultural of origin interferes with understanding of a second culture
• Old habits are not changed easily

Adapted from E. W. Lynch, 1992
Cultural Self Awareness for Child Care Professionals: Family Structure and Childrearing Practices

- Family composition
- Primary caregivers
- Childrearing practices
- Family sleeping patterns
- Family’s response to disobedience and aggression
- Family’s response to crying infants and toddlers
- Family’s perception of child’s disability
- Family’s perception of health and healing
- Family’s perception of help-seeking and intervention

Wayman, Lynch & Hansen, 1990
High Context Family

Low Context Home Visitor

Proximity and Touching
Eye Contact and Facial Expressions
Body Language
Gestures
Gender Roles

Degree of match influences relationship building

Degree of relationship building determines success

Fitzgerald, 2004
Need for Standards and Training

Enhancing the quality of the nation’s caregiving system is essential. The burden on poor quality care is disproportionately on low-income, working families.

Standards are available:

- Michigan Association for Infant Mental Health: Endorsement Standards (www.mi-aimh.msu.edu)
- National Association for Education of Young Children Child Care Accreditation (http://naeyc.org)
- Zero to Three: National Center for Infants, Toddlers, and Families (www.zerotothree.org)
Building a Coherent, Organized System of Childhood Policies and Practices

Early childhood policies and practices are highly fragmented with complex and confusing points of entry that are problematic for underserved segments of the population and for those with special needs.

From Neurons to Neighborhoods
National Research Council, Institute of Medicine, 2000
What do we Gain by Investing in Prevention: The Bottom Line?

A higher yield on great finishes and a solid return on prevention investment
Investments and Returns from Four Programs

Established Returns on Investment from Research-Based Early Childhood Programs for Every Dollar Invested

- Perry Pre-School Project: $4.11
- Elmira PEIP: $6.89
- Chicago Parent-Child Centers: $5.06
- Abecedarian Project: $3.72

Heckman, J. 2004
Summary

• Early experiences organize neural and behavioral development (for better or worse)
• Normative development occurs in a minimal risk environment with strong social supports
• Sustained exposure to cumulative risk factors minimizes chances for a great finish
• Early experiences predict but do not determine later outcomes
• High quality, sustained enrollment prevention programs can help children overcome bad starts
• Early prevention programs are cost effective