Early Brain Development and Language Nutrition

Carrollton-Carroll County Education Collaborative
Fall Meeting Oct. 17, 2016

Brenda Fitzgerald, M.D.
Commissioner and State Health Officer
Georgia Department of Public Health
30 Million Word Gap

- High Income: 43 Million
- Working Class: 24 Million
- Low Income: 11 Million
Window of Opportunity

18 MONTHS: AGE AT WHICH DISPARITIES IN VOCABULARY BEGIN TO APPEAR

- College Educated Parents
- Working Class Parents
- Welfare Parents

Cumulative Vocabulary (Words)

1200
600
200

Child’s Age (Months)

16 mos.
24 mos.
36 mos.
Synapse Formation

Developing Brain

Brain Architecture: Neurons
Brain Architecture: Pruning
Language Nutrition

- Increases neurological development
- Leads to the ability to read
- Leads to high school graduation
- Influences economic success

Increases neurological development

Influences economic success

Leads to high school graduation

Leads to the ability to read
Redefine infant and toddler wellness to include language acquisition and social-emotional health, so that by 2020, all children in Georgia will enter school thriving and ready to succeed.
Population Based Approach

From Universal Design to Targeted Interventions

All of Georgia’s Children

- No Known Factors
- Economic Factors
- Medical Factors
- Trauma Factors
- Developmental Factors

System
- State Agencies, Employers, Insurance, Professional Organizations

Community
- Non-profits, Faith-based Organizations, Hospitals & Practices, Schools, Local Businesses, Local Governments, Early Childcare Centers

Individual
- Providers, Teachers, Families, Caregivers

We Protect Lives.
THE STILL FACE EXPERIMENT
Dr. Edward Tronick, Child Development Unit, Harvard University
• Random sample of children (18-24 months) assessed for language, speech, and communication patterns
• 900 Georgia WIC staff trained on language nutrition
• 199 WIC centers integrated language nutrition messages into their centers
• Nutritionists discuss modeling behaviors with clients, encouraging parents to talk with their
• DVDs play in waiting rooms
• Educational materials provided to clients
Infants who are deaf and hard of hearing

- identified in the first six months of life
- provided with appropriate intervention services

80% of these infants/children are able to maintain age-appropriate language development in the first five years of life

Christine Yoshinaga-Itano, PhD
Professor • Speech, Language, and Hearing Sciences
The Institute of Cognitive Science
University of Colorado Boulder
100 Babies Program Goals

One month
• All infants receive newborn hearing screening

Three months
• Infants not passing screen receive a diagnostic evaluation

Six months
• Infants diagnosed as deaf or hard of hearing are enrolled in intervention
Percent Diagnosed by 90 Days

Strategy

- Strategic Placing of Equipment
  - 3 Diagnostic Machines (Ringgold, Valdosta, Albany)
  - 11 Screeners
- Revised and standardized sent to families and physicians
- Electronic Reporting of Providers
- Audiology Facility Finder
  
  https://sendss.state.ga.us/sendss!/audio
cologist_locator.search
Percent Enrolled in Intervention By 6 Months

<table>
<thead>
<tr>
<th>Year</th>
<th>Georgia</th>
<th>National Average</th>
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Strategy

- 77% of D/HH children born in 2014 are enrolled in intervention, 57% by six months
- Intervention logs from Georgia PINES received and entered monthly
- Three private intervention providers documenting intervention in SendSS
"The active ingredient in the environment that's having an influence on development is the quality of the relationships that children have with the important people in their lives. That's what it's all about."

Jack P. Shonkoff, M.D.
Brain Activity 8 Year Old Children

Brain activity at 8 years old among children in institutional care

Brain activity of children in foster care after 24 months of age

EEG of children in foster care before 24 months of age

EEG of children never institutionalized

Center on the Developing Child
Harvard University
Autism Screening and Early Detection

• The Marcus Autism Center, under the direction of Ami Klin is using eye-tracking research that detects signs of autism as early as infancy
• Earlier interventions when the brain is still able to adapt and change, we believe we can raise the prospects of significantly altering the natural course of ASD
Parental Involvement

Point to Pictures and Words

Talk to Your Baby Before She's Born!

Speak Slowly and Exaggerate Your Words

Make Sure There Is a Book to Share

Talk Often and Keep It Simple!

Teach Babies New Words

We Protect Lives.
The Cox Campus Online Learning Platform of the Atlanta Speech School will roll out two digitally-state-of-the-art courses for teachers of infants and toddlers.

- Roll out November 14
- Coalition of public and private partners including Governor Nathan Deal and First Lady Sandra Deal, Harvard University, DPH and the Georgia Department of Early Care and Learning
- Courses
  - Talk With Me Baby
  - Build My Brain
QUESTIONS?