Promotion of Parenting and School Readiness Using Pediatric Primary Care as an Innovative Platform

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Background

Poverty Related Disparities in School Readiness

- Children in poor households begin falling behind in language development from the time they say their first words, at about 1 year, with an increasing gap as they get older (Hart & Risley, 1995).
- Early disparities persist with 48% of poor children experiencing reading difficulties in 4th grade compared to 18% of non-poor children (US Dept of Education, NCES, 2012).
- The early emergence and long-term persistence of poverty-related disparities in development and school readiness underscore the need for effective interventions prior to school entry (e.g., Hart & Risley, 1995; Hillemeier, 2009; NICHD, 2005).

Pediatric Primary Care: An Underutilized Platform for Preventive Interventions

- **Population-wide:** most US children receive primary care; all need immunizations prior to school entry
- **Early in childhood:** period of rapid brain development; intervention likely to be most effective
- **Dose:** 15+ visits over first 5 years
- **Build on existing relationships:** families place value on relationship with health care provider
- **Build on parent goals:** development/behavior key concern of parents attending health care
- **At low cost:** families already attend health care visits; limited travel and infrastructure costs

Reach Out and Read

Most studied, proven primary care program

Waiting room volunteers
- Model reading activities

Health care providers:
- Counsel parents about the importance of reading
- Distribute free children's books (9 - 10 books over 5 years)

Extensive research / dissemination:
- > 15 published studies
  - RCT (High et al, 2000): enhanced early language development
- Reaches 4 million children in US
  - 25+% of all low income children 0-5 years
- Cost: $20 per child/yr; 1/100 of home visiting

Developed by Boston University School of Medicine / Boston Medical Center
- *Barry Zuckerman, M.D.*
- *Robert Needlman, M.D.*
- *Kathleen Fitzgerald Rice, M.S.Ed*
- *Perri Klass, M.D. (now NYU)*

BELLE Study Sample

Study Sample

Enrollment process:
- Consecutive sample
- Mother newborn dyads
- Urban public hospital

Primary eligibility criteria:
- Primary language: English or Spanish
- Singleton, full-term, uncomplicated birth
- Well child care at our institution

Study Sample at Enrollment (n=450)

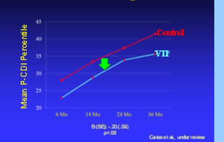
	VIP	Control
Low SES	91%	91%
Latina/Hispanic	92%	89%
Born outside US	88%	83%
Married/partner	83%	83%
Education (Last grade completed)	10.0	10.5
First born child	42%	43%

Note: No significant differences between VIP and Control groups at time of enrollment

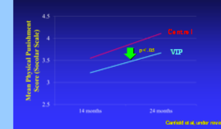
VIP Impacts on Family Stressors

Reduced Maternal Depressive Symptoms Mediated by Parent-Child Interactions

Reduced Parenting Stress



Reduced Physical Punishment



The Video Interaction Project

Video Interaction Project (VIP):

Utilizes pediatric primary care to reduce poverty-related disparities in school readiness through promotion of parent-child interactions

Video Interaction Project

- Families meet with an interventionist at all routine pediatric visits starting from birth
- Builds on Reach Out and Read: focused on enhancing interactions in play, shared reading and daily routines
- Similar focus to home visitation programs:
  - Parent-Child Home Program (Levenstein, 1998)
  - Playing and Learning Strategies (Landry, 2006)
- Low Cost ~$150-$200/child/year (~1/10 of home visitation)
- Two phases:
  - VIP 0-3: birth to 3 years
  - VIP 3-5: 3 to 5 years

Core Components (0-3 and 3-5):

Video made of parent and child

Core Components (0-3 and 3-5):

Review of the Video with Parent

Core Components (0-3 and 3-5):

Parenting pamphlets and learning materials

VIP 3-5: Additional Elements

- Continued emphasis on interactions during play/reading
  - Matched to preschool child's development
  - Integrating activities related to
    - Emergent literacy activities (e.g., writing)
    - Self-regulation (e.g., parent/child planning)
- Adaptation of evidence-based preschool and home-based strategies for use in medical / VIP model
  - Practical for mothers with limited education / resources

VIP Research

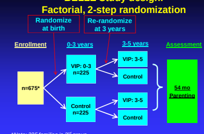
Prior VIP Research - Trial 1

- VIP 0-3:
  - Small RCT (1999-2001) found impact on:
    - Parenting (Mendelsohn, 2007)
    - Early language and cognitive development (Mendelsohn, 2005, 2007)
    - IQ, early literacy (Mendelsohn, 2011c)
- VIP 3-5:
  - No prior research

Current VIP Research: Trials 2 & 3

- BELLE Project: Bellevue Project for Early Language, Literacy and Education Success
  - Large RCT, began in 2005
- Trial 2: VIP compared to Controls and to a second intervention called Building Blocks (Huberman, 2001)
  - *Note:* Building Blocks not followed beyond 24 months
- Trial 3: Extension of VIP into preschool period; VIP and Control groups re-randomized to determine optimal timing/dose of intervention

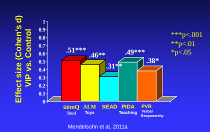
BELLE Study design: Factorial, 2-step randomization



*Note: 225 families in 3rd group (BB) not included in analysis

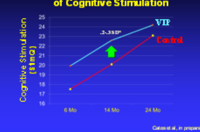
VIP Impacts on Parenting

Enhanced Cognitive Stimulation at 6 mos (StimQ)

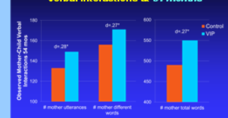


Mendelsohn et al, 2011a

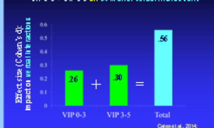
Enhanced Trajectories of Cognitive Stimulation



Enhanced *Observed* Mother-Child Verbal Interactions at *54 months*

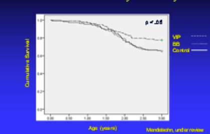


Preliminary Findings: *Independent, additive impacts of* VIP 0-3 + VIP 3-5 on 54 month verbal interactions

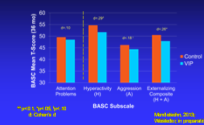


VIP Impacts on School Readiness

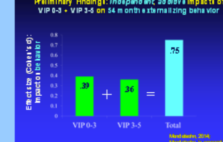
Reduced rate of referral to Early Intervention for families without very low literacy



Enhanced Self-Regulation / Behavior from 14 - 36 Months



Preliminary Findings: *Independent, additive impacts of* VIP 0-3 + VIP 3-5 on 54 month externalizing behavior



Summary & Discussion

Summary of Current VIP Findings

- VIP 0-3
  - Impacts on parent-child interactions, family stressors, and child EI eligibility and self-regulation
  - Impacts on parent verbal responsivity and child self-regulation sustained long-term (thru age 54m)
- VIP 3-5
  - Preliminary impacts on parent verbal responsivity and child self-regulation
- Impacts of VIP 0-3 and VIP 3-5 are independent
  - Suggests additive impacts for those receiving both interventions

Implications

- Findings support preventive interventions that target parent-child interactions to reduce poverty-related disparities in school readiness
- *Findings underscore the potential role of the pediatric primary care setting as a platform for early childhood interventions with opportunity for:*
  - Low-cost, population-wide dissemination
  - Synergy between health-care based strategies and existing home visitation and preschool programs

Ongoing Work & Future Directions

Ongoing Research

1. Ongoing analyses of impacts of VIP on child development
   - Assessments of narrative ability, executive functions
2. Learning *long term impacts* of VIP as children followed *since birth* begin *elementary school*
   - Direct observation of children *in their classrooms*
   - Permission to obtain NY standardized test results
3. Using cutting-edge technology (LENA) to understand how parents use what they learn from VIP at home (PI: Weisleder)
4. Impact on toxic stress through hair cortisol biomarkers (PI: Canfield)

Next Steps for VIP

1. First replication: Woodhull Medical Center (Ja, 2013)
   - Will help understand challenges/barriers to dissemination and implementation
   - Will help inform processes for replication
2. NY City Council Early Child Literacy Initiative: *City's First Readers* (Ja, 2014)
   - 8 programs across NYC in 4 platforms: home, preschool, library systems, pediatric primary care
   - Goal: synergy through cross-platform referral with delivery of similar messages
   - *www.citysfirstreaders.com*

Next Steps for VIP

3. Integration across platforms
   - Pediatric primary care and home visiting:
     - Collaboration with *School Reform and Beyond*
     - Multi-disciplinary, multi-site initiative to enhance school readiness and school outcomes from birth - elementary school
     - Integration of universal primary care model (ROR+VIP) and targeted home visiting (Family Check Up) for high risk families
     - NIH/NICHD funded (MPIs: Morris, Mendelsohn, Shaw)
     - Enrollment: May, 2015

BELLE Project Team

Leadership
- PI: Alan Mendelsohn, MD
- PD: Adriana Weisleder, PhD
- Lab Manager: Anne Seery, PhD

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Volunteers
- Andrea Paloian, BA

Support

- NIH / NICHD
  - R01HD047740 01-04; R01HD047740 05-08; R01HD047740 S1 (PI Mendelsohn)
  - R01HD076390-01 (MPI Morris, Mendelsohn, Shaw)
- NIH NYU CTSI
  - 1UL1RR029893 – Pilot Project Grant
- Foundations
  - Tiger Foundation
  - Marks Family Foundation
  - New York Community Trust
  - Children of Bellevue, Inc.
  - KiDS of NYU Foundation, Inc.
- New York City Council
  - City's First Readers Program
  - City Council Discretionary Funding