



Project Engage: Increasing Parent Use of Child Communication Promoting Strategies and Parent Engagement in Home-Based Interventions Using Cellular Phones

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Early Language Experiences

- The implications of early language deficits are serious as children who enter school at a disadvantage continue to perform below their peers and may become eligible for special education. Children who fail to acquire effective communication skills can experience undue dependency and relative social isolation irrespective of whatever other abilities they possess (Warren & Walker, 2005).
- Children from poverty backgrounds are at particular risk as highlighted in the results from the Early Head Start (EHS) National evaluation study, in which children from EHS continuously performed more than 1 *SD* below the mean on standardized vocabulary tests (Love, 2005).
- Environments for young children should be language-rich and provide opportunities for children to hear language, engage in shared book reading, and participate in conversations. Key intervention strategies have been found to promote language and early literacy skills, but in practice, are only rarely used by parents.



Parent Engagement

- A growing number of home visiting parenting programs have shown positive results with high-risk populations, but meta-analyses have not reported consistently positive outcomes for parents and children (Astuto & Allen, 2009; Sweet & Appelbaum, 2004).
- One barrier to achieving improved outcomes is **high rates of attrition** (McCurdy & Daro, 2001). Home visiting programs report attrition rates as high as 80% in some programs, with many families who do remain enrolled receiving fewer than half of the intended number of visits or prescribed dosage of the intervention (Gomby, 2000).
- A second barrier to home visiting effectiveness is **parent engagement**—the extent to which parents carry out the behavioral or affective components of the intervention during and between home visits (Korfmacher et al, 2008). When families disengage from, or only passively attend to parenting interventions, this results in less than complete dosage of the intervention and will likely influence parenting outcomes (Sweet et al., 2004). Programs that are able to maintain parents’ participation and keep them actively engaged are more likely to achieve the desired results of improved parenting outcomes (Gomby, 2005).
- A randomized trial examining the impact of cellular phones on parent engagement in a home-based intervention resulted in improvements in responsive parenting strategies, lower rates of parenting stress and depression, and reduced attrition (11% attrition among families who received text message and cell phone support vs 23% attrition among those who did not receive text messages and cell phone support (Carta, Lefever, Bigelow, Borkowski, & Warren, 2013).

The **primary aim** of this project is to examine how cellular phone technology can:

- 1) Increase and maintain parent engagement in an evidence-based intervention to promote parent-child interaction, and
- 2) Increase parents’ use of language promoting strategies, and thus improve child communication and language skills of infants and toddlers receiving Early Head Start and Part C early intervention services.

Intervention Design and Participants

- **Randomized Controlled Trial**, with families assigned to one of two intervention conditions:
 - **Promoting Communication (PC) Strategies:** PC strategies delivered during weekly Early Head Start or Part C Early Intervention Services home visits.
 - **Cell-Phone Enhanced PC Strategies:** PC strategies as described above, enhanced with 5 text messages per week supporting implementation of the PC Strategies and parent engagement in home visiting program.
- **Implementation partners** include two Early Head Start home based programs (urban and rural) and one Part C early intervention program.
- **157 children** (57% boys)
- **Mean age at recruitment** = 17.88 months (6-30 mos)
- **Primary language:** 42% Spanish-speaking families in urban population; 98% English speaking in rural population
- **Marital status:** 43% single/separated/divorced; 54% married/with partner
- **Family income:** 81% below \$30,000 annually
- **Education:** 55% completed high school, GED, or greater



Promoting Communication Strategies

- The Promoting Communication strategies were designed to be flexible and able to be individualized to unique skills levels, needs, and diverse backgrounds of infants and young children, and their caregivers.
- Home Visitors embed PC Strategies into the activities of weekly or bi-weekly home visits, and support parents in implementing PC Strategies across routines.
- Intervention coaches collaborate with home visitors and Part C interventionists to build the capacity of parents to implement the PC Strategies in an individualized manner,
- PC Strategies are integrated with family goals.



Promoting Communication Strategies	PC Intervention Resources
• Arranging the Environment • Following a Child’s Lead • Commenting and Labeling • Imitating and Expanding • Asking Open-Ended Questions • Time Delay/Fill in the Blank • Positive Attention and Praise	• Intervention coach to support home visitor implementation • Home visitor/parent manual • Video clips of strategy use • PC Strategies poster • Routine-specific activity cards • Parent self-checks • Graphic feedback for parents • Home visit implementation reports

Cellular Phone Intervention

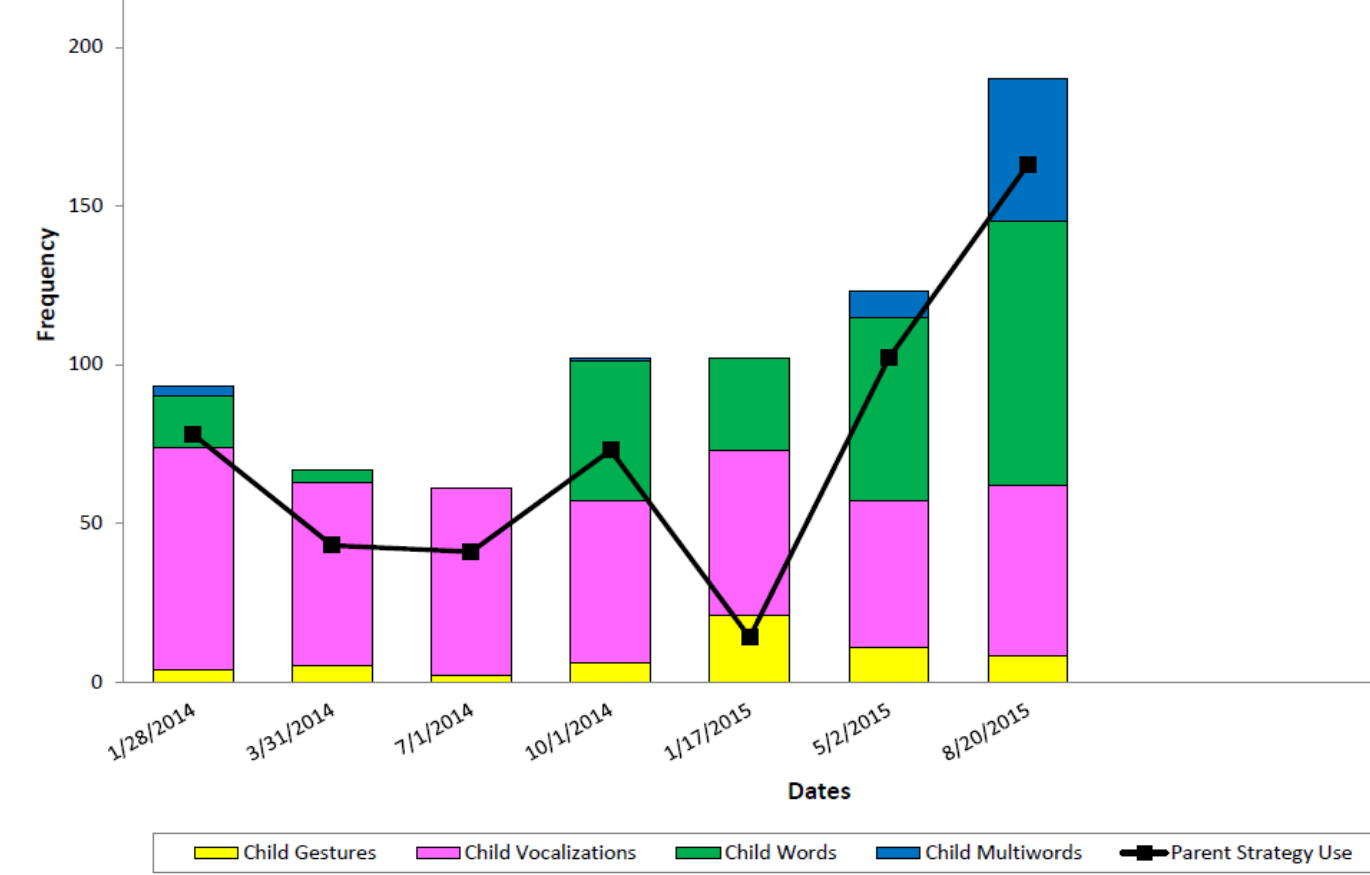
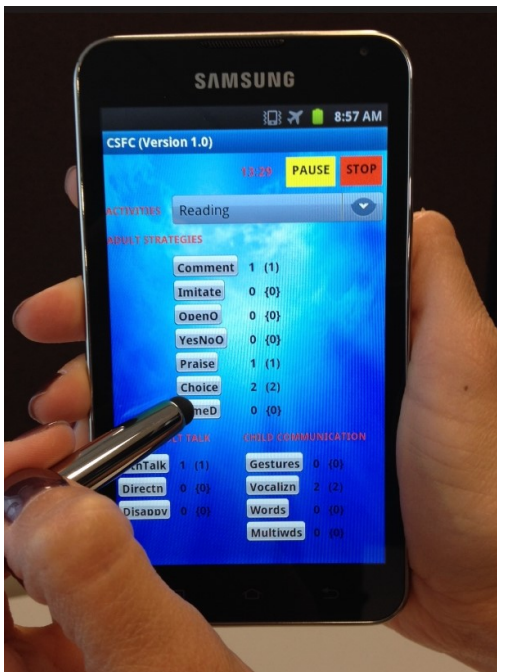
- Text messages were designed to support and extend implementation of the PC Strategies beyond the home visit, and promote parent engagement.
- A text message “menu” is available, but home visitors are encouraged to individualize.
- Text messages are sent to parents 5 times per week—3 from home visitor during the week, 2 from an intervention coach on the weekend; Messages could be scheduled in advance and programmed to go to multiple recipients using an online texting service.
- Home visitors’ text messages focus on PC Strategies but also included supportive messages, content related to other family goals, or suggestions for community resources.
- Intervention coaches’ text messages focused on PC Strategies.

Multiple Measures of PC Intervention Fidelity

- **Home Visit Checklist:** Home visitor-report checklist of strategies and routines addressed during visits and activities in which provider observes and records parent using the communication strategies during each home visit. Monthly summary reports provided to home visitors include feedback and support on how to use these data to inform practice.

Project Engage Home Visit Checklist Summary			
Home Visitor:	Changelier Name:	Grow:	No Cell
Total Visits for this Caregiver with Checklist to Date: 10			
Most Recent Checklist Entered for this Caregiver: 1/20/2015			
Child ID and Name: 115	Intervention Start Date: 2/27/2014	Report Date: 10/27/2015	
Strategies Addressed with this Caregiver	# Visits	Activities in which Strategies were Discussed	# Visits
Environmental Arrangement	4	Play	8
Following child's lead/responsiveness	3	Daily/Personhood routines	6
Commenting/labeling	8	Reading/looking at books	0
Imitating/expanding	3	Outdoors/outings	0
Open-ended questions	1		
Positive attention and praise	6		
Providing choices	1		
Fill in blank/time delay	0		
Strategies Observed During Visits	# Visits	Technique Strategies Used	# Visits
Environmental Arrangement	2	Discussed / Reviewed strategies	8
Following child's lead/responsiveness	4	Modeled how to use strategies	0
Commenting/labeling	6	Asked parent to practice strategies	0
Imitating/expanding	3	Provided feedback on parents' use	0
Open-ended questions	2	Helped parent select routines	8
Positive attention and praise	5	Helped parent plan how to use strategies	6
Providing choices	1	Shared / discussed graphs	0
Fill in blank/time delay	0	None/NA	0

- **Parent Fidelity Observation:** 15-min frequency count of parent use of intervention strategies concurrent with child communication. Data are entered into application on tablets. Graphs show parent use of strategies and child communication. Home visitors share graphs with parents to provide feedback and review progress.



- **Parent Self-Check:** Parent self-reports frequency rating of use of intervention strategies across routines. Data are used to generate discussion between parent and home visitor about parent’s use of the intervention between home visits, and for setting goals.

Communication Strategies Self-Check: Following Child's Lead

All of the items listed on here after you used the strategies during each routine this week.

Date: 7/17/14

Child: Sam

Parent: Dad

Home Visitor: Ray

Play	Following Child's Lead	Outings	Reading	Mealtime	Other
Not Used	Not Used	Not Used	Not Used	Not Used	Not Used

Followed Child Lead/Responsiveness

Home Visitor and Followed child's current play task

Target Outcome	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used
Watch for when Sam picks up a book, and then sit down with him. Ask if he would like to look at it to him or if he wants to read it himself. Let him choose how to go through the book. Let him hold the book, turn the pages, point at pictures. Tell about the picture he is looking at in the book. By naming characters, events, etc., or describing what they are doing.	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used

Notes: I sat Sam pick up a book, and usually I would just let him look at it by himself. I sat down with him and started by just watching and listening. He pointed to a car and wanted to I said and Sam go (murmur). I asked him what else he saw in the book and we ended up talking about every page in the book. I was so glad I took the time to do that!

- **Coaching Fidelity Checklist:** Fidelity check of strategies used by Intervention Coach to support home visitors in intervention delivery.



Cellular Phone Intervention Fidelity

- Text messages were sent using an online text messaging service, and reports containing date and time sent and text message content were generated.
- Intervention coaches provided home visitors with monthly text messaging reports and written feedback on the frequency and content of text messages for each family.
- Sample Home Visitor Text Message Report:

# of Texts Sent to Family	Week of		Text Message Feedback:
1	5/22/2014		Great job with messages this month. Nice to see how you personalized them, and related the content to what you’re working on with the family, such as child behavior and reading. Try to aim for at least 3 messages/week. This can help mom remember to practice the strategies throughout the week.
2	5/26/2014	5/28/2014	
3	6/2/2014	6/6/2014	
2	6/9/2014	6/11/2014	
3	6/16/2014	6/20/2014	
3	6/23/2014	6/27/2014	
3	7/1/2014	7/4/2014	
3	7/7/2014	7/11/2014	
3	7/14/2014	7/18/2014	
3	7/21/2014	7/25/2014	
2	7/28/2014	7/29/2014	
Total # Sent	# Weeks	Weekly Average	
28	10	2.80	

Text Message Examples

PC Strategies text messages:

- One way to “comment and label” is to tell the story of what your child is doing as you play. “You’re stacking them UP”
- Did you have book time today? Try giving a choice of two or three books, and then follow her lead as you read together.
- Glad you got the pull-ups I dropped off! Hope it helps potty-training. Remember to use words like “on, off, up, down, wet, dry” with your little smarty-pants!
- I heard Sylvie saying “more, more” last week. Try imitating and expanding on this with “More milk. I want more milk.” This can help build her vocabulary.

Other types of messages:

- Great work at our visit today! I can see how you two really connect, and how much Ava loves playing with you.
- Free story-time at the library on 5th St at 10:00 am. I think some other parents from our program are going. Might be fun!
- I know this is a challenging time for your family now. You’re really holding everything together for everyone now. Make sure you take time to take care of yourself. Let’s talk when we meet.
- Great work yesterday! Enjoy the weekend, and see you next Thursday at 11:00.

Parent Comments

- Text messages “helped me to remember the strategies and interact with my son.”
- “Good work making clear texts for me.”
- “The visits were once a week, and the messages helped during the week”
- “I hope this program stays around. I wish I could have had this help when my other kids were little.”

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