

Ready Children Ready Communities
Interim SIF Evaluation Report
2016

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Executive Summary

This report presents the design, data collection and analysis plan, results to date, and lessons learned during SPEC Associates' evaluation of *Ready Children Ready Communities*. This third evaluation report is organized according to the preliminary draft of the reporting guidance from CNCS.

Program and Intended Outcomes/Impacts

Ready Children Ready Communities is a multi-program initiative designed to facilitate Michigan's children ages 0-5 living in Southern Macomb County and Wayne County being increasingly ready for a successful start to Kindergarten. *Ready Children Ready Communities* provides a suite of the following early childhood literacy related interventions:

- Screening and assessing children for developmental delays and mental health needs
- A series of literacy-related home visits to high risk families using the evidence-based Parents as Teachers (PAT) home visitation model
- Social emotional consulting to parents and other caregivers, and referrals to mental health services for children and families needing more intensive support
- Play and Learn Groups in a variety of community-based settings where parents and children play and learn literacy-related skills together
- Parent-child community events that are focused on early childhood learning and that provide information and other resources about relevant community services

While all parents participating in *Ready Children Ready Communities* are expected to benefit from their participation in one or more of these interventions, parents who participate in PAT home visits are expected to show the greatest improvement on three expected outcomes:

- Understanding of the principles of early childhood development
- Valuing of reading to their children daily
- Knowledge of how to access community services

These three outcomes are the focus of the impact evaluation of *Ready Children Ready Communities*. PAT home visit parents are expected to show greater impact than the comparison group of parents who do not participate in PAT home visits but who do participate in Play and Learn Groups.

Since *Ready Children Ready Communities* began:

- 757 children have been enrolled for services
- 1,408 PAT home visits have been conducted
- 789 Play and Learn Group sessions were facilitated
- 623 social emotional (mental health) individual consultations were provided to families
- 72 social emotional classroom consultations were provided to classrooms
- 42 social emotional parent group sessions were provided to parent groups
- 70 outreach activities were completed (not including flyer distribution and email blasts)

In addition, 592 children have participated in Kindergarten literacy camp and 700 families have participated in community events. MISD's Kindergarten literacy camp, KinderConnect, is a four-week long intensive camp focusing on literacy instruction for incoming Kindergartners, which is partly supported by SIF. The evaluation of the 2015 KinderConnect was conducted separately from the SIF evaluation. Children started with scale scores in the range of 18-38%. By post camp, scores increased 16

to 28 percentage points in each of the five areas: letters, sounds, print awareness, phonological awareness, and oral language.

Relevant Prior Research

Experts say that the choices families make regarding literacy are more important than family's income or caregivers' educational backgrounds in predicting future success, and that Kindergarten readiness is sharply impacted by early literacy home visiting programs.¹ There is a strong body of research supporting the effectiveness of PAT home visits in improving children's readiness for Kindergarten. The major intervention of interest, Parents as Teachers home visits, is a federally approved home visitation model through the Affordable Care Act, Maternal, Infant, and early Childhood Home Visiting Program. The Play and Learn Group model had not been studied prior to this evaluation; the model of parents and children learning together is supported by research that shows that when young children and adults interact through talking, singing, and rhyming together they stimulate language development which creates the foundation of learning to read. The group work in the *Ready Children Ready Communities* utilizes the trainings from the evidence-based PAT model.

Evaluation Design, Levels of Evidence, and Measures

SPEC Associates (SPEC) is working collaboratively with the Macomb Intermediate School District, Leaps & Bounds Family Services and Macomb Family Services to collect moderate evidence via a quasi-experimental Retrospective PreTest (RPT) research design that will test the hypothesis that parents who participate in PAT home visits show stronger outcomes than parents who do not participate in PAT home visits but do participate in Play and Learn Groups. This design meets the standards for moderate evidence established by CNCS.

The program group consists of parents who receive at least five PAT home visits. The comparison group includes parents who participate in at least four Play and Learn Group sessions conducted by one of the three participating agencies but do not receive PAT home visits. Propensity score matching on seven risk factors was to be used to control in the analyses for selection bias. However, propensity score matching was conducted on the current population of participants and comparison group and no matches were found without expanding the caliper² to such a large range as to render the match functionally unequivocal. Therefore, the entire comparison group was used in a repeated measure Analysis of Covariance (ANCOVA) using the cumulative score on the seven risk factors as the covariate.

Exploratory evidence was also collected to test the hypotheses that: (a) children whose family members participate in PAT home visits experience improved general support and literacy stimulation at home, and (b) children with developmental delays in social emotional health show improvement in this growth area after receiving social emotional consultation/intervention.

¹ See Zigler, E., Pfannenstiel, J.C., & Seitz, V. (2008). The Parents as Teachers Program and School Success: A Replication and Extension. *Journal of Primary Prevention*, 29, 103-120.

² Austin, PC, (2011). Optimal caliper widths for propensity-score matching when estimating differences in means and differences in proportions in observational studies. *Pharmaceutical Statistics*, 10 (2), 150-161.

All data are collected by project staff. All parents enrolled in PAT home visits and/or Play and Learn Groups are administered an **Intake Form** that collects demographic and risk data and documents the consent of parents to be surveyed for the evaluation. The **Home Observation for Measurement of the Environment** (HOME) versions 0-3 and 3-6 are used as the pre-post assessment of changes in family literacy environment for PAT home visit families.

Consenting parents who participate in PAT home visits are asked to complete a Retrospective Pretest (RPT) survey after at least five visits. Consenting parents who participated in four Play and Learn Group sessions are asked, at the end of each quarter they participate in groups, to complete an RPT survey. The **RPT survey** asks home visit and Play and Learn Group parents to rate themselves on the three expected outcomes “now” and “before” participating in the intervention. Test development and Arabic translation activities were undertaken in year one and the initial reliability tests showed more than acceptable Cronbach’s Alpha coefficients. Reliability testing in years two and three revealed continued high Cronbach’s Alpha for both the “now” and “before” scales.

The standardized and validated **Ages and Stages Questionnaire** (ASQ) is used to screen children for developmental delays upon enrollment into the PAT home visits. If indicated by ASQ results -- either by the personal-social section of the ASQ indicating a delay or by a positive response to the parent question on if they have concerns about the child’s behavior -- the more in-depth **ASQ-Social Emotional** (ASQ:SE) is used to assess families’ needs for referral to mental health services. Families referred to and who ultimately receive social emotional consultation/intervention services are administered the **Devereux Early Childhood Assessment** (DECA) on a pre-post basis. Referrals of children for whom one or more screening assessments were performed for developmental delays are tracked using a **Screening and Referral Tracker**. Parents’ reports of Play and Learn Group quality are measured by a **Play and Learn Program Survey**.

[Research Questions, Analysis Approaches and Key Findings to Date](#)

Confirmatory Question and Summary of Results to Date

Do parents who participate in PAT home visits show greater improvement than parents who only participate in Play and Learn Groups in perceived knowledge of the principles of early childhood development, value of reading daily to their children, and knowledge of how to access community resources?

Repeated measures Analysis of Covariance (ANCOVA) was used to compare the PAT home visit group with the Play and Learn comparison group on the three intended outcomes and on the counterfactual items. For each of the three outcome analyses, after controlling for cumulative score on the seven risk factors, there was a statistically significant main effect of time showing that overall, across both groups, parents improved significantly on each of the three outcomes. There was also a statistically significant Group-by-Time interaction effect. For each outcome, the PAT home visit parents assessed themselves lower on the “before” questions than the Play and Learn Group parents, and changed more between their “before” and “now” assessments.

Qualitative data gathered through the Play and Learn Group parent survey support the outcome that parents gain greater understanding of the principles of child development by participating in the

program. On the survey, parents reported learning about ways to better recognize their child's needs and being more aware of their child's skills or level of development.

Interestingly, some parents also reported changes from "before" to "now" on the counterfactual items, and almost all of these parents are in the PAT home visit group. Discussions with program staff suggest two possible reasons for these results. One reason for these results is social desirability. Some PAT parents may be reporting changes in order to please the home visit staff who personally hand the RPT survey to the parents, even though they are instructed to place the completed survey into a blank, manila envelope. It is likely that home visit parents develop stronger bonds with program staff than those in the Play and Learn Groups because of the intensity of the in-home interventions. Another possible reason for these results is that there are a substantial number of home visit parents for whom English is not their primary language and who may have cultural differences in their interpretation of the counterfactual items (e.g., in other countries it may be acceptable for children to play in the streets). These parents may have learned that this is not advisable in their current neighborhoods and may have attributed this learning to their participation in the home visit program.

Exploratory Questions and Summary of Results to Date

Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:

- o Understanding of the principles of early childhood development?*
- o Valuing of reading to their children daily?*
- o Knowledge of how to access community resources?*

Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:

- o Understanding of the principles of early childhood development?*
- o Valuing of reading to their children daily?*
- o Knowledge of how to access community resources?*

As noted above, the repeated measures ANCOVA revealed a significant main effect of time, showing that in both groups taken together, the parents reported significant improvements on these outcomes from "before" to "now."

Is there a significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the PAT home visits?

The pre-post HOME subscale scores were analyzed for the six to eight sub-scales in the two age-versions of the HOME assessment. Results reveal that there was statistically significant improvement on all Infant Toddler subscales, and on five of the eight Early Childhood subscales. For the statistically significant subscales, 93% of the home visitation children had improvement on one or more of these subscales.

Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on behavioral concerns?

The pre-post DECA difference scores on each of the four DECA factors were analyzed to address this question, counting the number and percent of children for whom there is a positive difference on one or more factor. Results reveal that 84% of the children increased on at least one protective factor or decreased on behavioral concerns.

Key Updates and Changes Related to the Program and Evaluation

Two changes were made to the evaluation design or implementation in year three. First, as noted above, because the propensity score matching revealed no adequate matches among the comparison group, the major analysis of the key confirmatory hypothesis was changed to repeated measures ANCOVA. Second, to test the validity of the RPT methodology, the literacy items on the RPT survey were used to select similar items from the ECLES.³ These ECLES items were used in a pre-post format with a total of 16 parents, who were asked these questions at intake and then, again, when they completed their RPT quarterly survey. These early results reveal statistically significant correlations (Pearson and Spearman Rho) between the difference scores generated using the pre-post ECLES and the “now/then” difference scores generated using the RPT survey items. These results support the contention that RPT is a valid measure of perceptions of change on parent outcomes.

Fidelity and quality are being assessed every other year. In year one of the evaluation, an early childhood education expert observed home visits and concluded that they were being implemented with fidelity to the model. The early childhood education expert also observed Play and Learn Groups and concluded that they were being implemented with quality as assessed by alignment with recommended practices of early childhood education. Expert observations and assessment will be conducted again this fall/winter.

Quarterly Play and Learn Group program surveys found that in the four quarters of data collection in year two, parents gave high quality ratings to their experiences:

- 99% reported that the facilitators were friendly and respectful toward adults
- 97% reported that they learned something about how play encourages their child’s development
- 97% reported that the facilitators helped them learn from each other
- 93% reported they received a book or other resources during their session
- 90% reported their children were able to use materials they don’t have or use at home

Comments parents wrote to open-ended questions support the quantitative results. Consistent with year one and year two evaluation findings, in year three parents praised the Play and Learn Groups and the most frequent comment for change was wanting more or longer sessions and/or activities. Across all time periods, parents reported children enjoying the program arts and crafts and interactive opportunities. Appreciation was reported for socialization activities – children-to children, children-to-parents and children-to-instructors.

Lessons Learned

The evaluation has been successful in implementing the planned research design, creating reliable data collection tools, and instituting processes for assuring data collection is managed appropriately by the

³ Partridge, T. (2012). Reliability and Validity of the Early Childhood Literacy Scale. Unpublished Manuscript cited with permission of author.

three participating agencies. Stakeholder engagement with the evaluation via an Evaluation Advisory Group, joint problem-solving and measure creation, and monthly check-in calls were keys to successes in all grant years of this evaluation. Also keys to evaluation success were having an IRB that could rapidly review applications/changes, using a third-party data entry company, and community relationships that the participating agencies had with many schools in the target areas.

During this evaluation, qualitative evidence was also found about expected outcomes. In particular, program staff reported evidence of parents accessing community resources through interactions with each other during Play and Learn Groups. Staff noted parents making friends during the group meetings, and sharing their experience with referrals.

The evaluation also revealed unanticipated outcomes at the agency and systems level. The three agencies participating in this evaluation are using the SIF evaluation tools and database to monitor progress beyond the funded interventions. They reported including data collected through this SIF evaluation in their other funding efforts. Participating in the evaluation has also resulted in the agencies looking closer at the quality of program implementation and, in one case, changing their PAT home visit recruitment strategy based on an article on gatekeeper value in recruitment that surfaced because of evaluation discussions.

System wide, the programs originally started with SIF funding are expanding their reach into non-SIF communities. There has been a growth in Kindergarten camps, and socio-emotional mental health services. Having MISD as lead agency enabled recruitment meetings with social workers within schools, and the collaborative efforts of the SIF grant resulted in faster recruitment opportunities within schools. Another systems-level outcome is that the three *Ready Children Ready Communities* implementing agencies have joined other early childhood education agencies in creating a Parents as Teachers regional affiliate which will enable PAT resources to be accessed at a much more reasonable fee than if the agencies had to purchase membership individually.

Ready Children Ready Communities: Interim SIF Evaluation Report

I. Introduction

A. Program Background and Problem Definition

Ready Children Ready Communities aims to make Michigan’s children ages 0-5 living in Southern Macomb County and Wayne County ready for a successful start in Kindergarten by:

- Screening and assessing children for developmental delays and mental health needs
- Providing literacy-related home visits for at risk families using the evidence-based Parents As Teachers (PAT) curriculum
- Providing a social emotional consultant, as well as referrals to other mental health services, for children and families who need more intensive support
- Offering Play and Learn Groups for parents⁴ and children ages 0-5 at seven to eight community sites, including schools, libraries and early learning settings
- Staging parent-child community events focused on early childhood learning for families, schools and communities and on providing information about resources such as relevant community services

Problem Definition

In recent years, Southern Macomb County and Wayne County have experienced sharp declines in income, sharp decreases in academic achievement at the 3rd grade level, drastic demographic changes and large losses of a sense of local community and school/neighborhood pride. State of Michigan test scores for children living in the targeted areas fall below the state average. In 2010 3rd grade scores in the Van Dyke District were 5% lower in math and 9% lower in reading, East Detroit District was 4% lower in math and 7% lower in reading, Fitzgerald District scored 3% lower in math and 13% lower in reading and Center Line was 25% lower in math and reading. The city of Detroit’s elementary schools were ranked 528 out of 539 districts around the country.

The population of the targeted communities is diverse, but within each community it is segregated. As noted in last year’s evaluation report, the Fitzgerald District has a very large English as a Second Language (ESL) population that is primarily Bengali. The Detroit District is 95% African American. The Van Dyke District has had a significant population shift as cited in the 2010 Census with the current school population transitioning to 60% African American and a small ESL Hmong population. The East Detroit and Center Line Districts have also experienced significant population shifts with increases in rentals and increased racial and ethnic diversity, most notably increases in African American and Arabic populations. For the Hamtramck area, 45% of the school population and 20% of the general population is Arabic speaking. It is the largest Bengali population in the state. School data for Hamtramck shows that 17% of high school aged youth are proficient in the Michigan Merit Exam (MME).

⁴ The term “parent” in this report is used to refer to any adult family member or legal guardian who is acting in the role of the parent vis a vis participation in the intervention.

Description of the Interventions

The three interventions of *Ready Children Ready Communities* studied by this evaluation are Parents as Teachers (PAT) home visits, Play and Learn Groups, and mental health services (i.e., social emotional consultation/intervention services). The logic model summarizing the *Ready Children Ready Communities* inputs, activities and expected outcomes is contained in Appendix A.

Two community-based agencies are implementing the PAT home visits: Leaps & Bounds Family Services and Macomb Intermediate School District. These two agencies plus Macomb Family Services are implementing Play and Learn Groups. Macomb Family Services is also implementing the social emotional consultation/intervention services.

Below are brief descriptions of all four components of the program, the three interventions studied by this evaluation as well as the community/school collaborations and events.

PAT Home Visits

Individual work with families is built on the foundation of the Parents as Teachers (PAT) Home Visiting program. This program is evidence based and is only one of nine federally approved Home Visiting models through the Affordable Care Act (ACA) Maternal, Infant, and Early Childhood Home Visiting Program. High risk families in the target areas of S. Warren and a few zip codes in Wayne County, are eligible to receive a minimum of eight monthly home visits. While the program primarily serves those areas, PAT home visits are now able to serve families in any SIF zip code and will do so to fit the needs of families.

PAT home visits occur with the parent and child together. Visits include three primary components. Parent-child interaction is the first component and includes activities and developmental information that parents can continue with children between visits. This part of the visit also includes book sharing and literacy development. Development-centered parenting is the second component. It supports parents in connecting their parenting behavior with their child's development. Family well-being is the final component focusing on supporting parents in providing physically healthy and emotionally supportive learning environments for their children. Much emphasis of this component is on social emotional development and supporting families in times of stress.

As a collaborative effort, the two SIF agencies recently joined with other home visiting programs within the region to become "affiliates" of Parents as Teachers. This means higher quality programming for families.

Ready Children Ready Communities follows PAT essential requirements for program design. Parent educators complete a family-centered assessment within 90 days of enrollment and then annually.

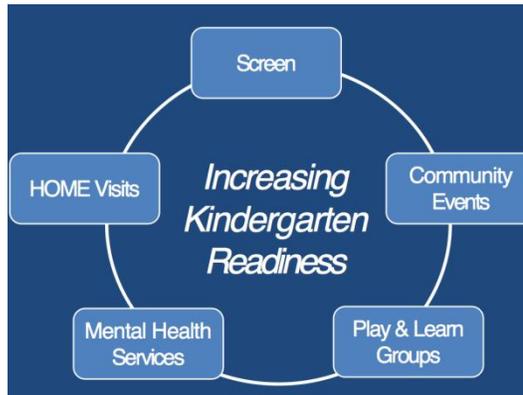


Figure 1. Program Components

Parent educators use the PAT curriculum on monthly visits with enrolled families. Children are screened using the *Ages and Stages Questionnaire (ASQ)* and, if needed the *Ages and Stages Questionnaire: Social Emotional (ASQ:SE)* is also administered within 90 days of enrollment and annually thereafter. Children with developmental delays are referred for further support. All families are invited to join Play and Learn Groups as well as community events.

All new parent educators who deliver PAT home visit services to families attend the Foundational and Model Implementation Trainings before delivering the program. New supervisors attend the Model Implementation Training. Parent educators receive an observation during a home visit (every other year) and are given feedback and support.

Each month, parent educators working more than .5 FTE participate in a minimum of two hours of individual reflective supervision and a minimum of two hours of staff meetings. Parent educators working .5 FTE or less participate in a minimum of one hour of reflective supervision and two hours of staff meetings.

Play and Learn Groups

Play and Learn Groups are a regularly scheduled time for parents/caregivers and children to be together with others. Play and Learn Groups at different locations can focus on different age ranges of children from birth to Kindergarten. The groups include structured activities for small and large motor development, cognitive development and social emotional development. Activities can include number, letter and color recognition; music and movement; and early science activities. All activities are designed to have children and their parents/caregivers work, play and learn together. Parents receive materials to continue the learning at home. Through regular participation, parents develop a learning community as do the children. Children's social emotional growth develops as they learn to play/work with others.

Screening and Mental Health Services

As noted above, PAT home visit children are screened for developmental delay using the ASQ. Children whose ASQ score indicates high risk for social-emotional problems and/or whose parents indicate concern about the child's behavior are administered the ASQ:SE (Social Emotional). Children are referred to mental health services, based on ASQ:SE results and/or other information. Children may also be referred to mental health services through Play and Learn, community events, or school or program-based relationships.

Social emotional consultation/intervention services are individually tailored to the specific cognitive, social and/or emotional needs of the child. As noted above, they are delivered by licensed mental health professionals. The social emotional consultant works with parents/caregivers/teachers and their children who are at risk of expulsion from child care centers and preschools as well as children who are identified as at risk on the ASQ:SE developmental screen. Parents/caregivers/teachers of children referred for social emotional consultation/intervention services complete the Devereux Early Childhood Assessment (DECA) on a pre-post basis, which is used for assessment, goal planning, and evaluation. Treatment programs are designed to alleviate the distress and suffering of a young child's mental health problem and support the return to healthy development and behavior. Methods of intervention may involve helping caregivers to better understand a young child's mental health needs. Dyadic therapy, for

instance, involves therapy for both child and parent together and may help a parent understand how to help a child regulate her emotions (e.g., tantrums and rages) and learn to verbally express his or her feelings. These mental health services are also provided to teachers in preschools. The research-based Social Emotional school readiness curriculum through the Center on the Social Emotional Foundations for Early Learning is used to facilitate educational support groups for parents of children birth to five. The ASQ:SE is used in these groups to identify children at risk.

Community/School Collaboration and Events

Ongoing work to coordinate communication between families, schools, and communities is critical to a child's success. Families need to know steps to prepare not only their children but the family as a whole to participate in and support strong education for their children. Through community wide public awareness events, parents learn about early childhood community resources. Through their awareness and subsequent use of community resources such as Play and Learn Groups, Home Visits, parenting classes using the *STEP* curriculum, and/or Kindergarten readiness activities, parents learn what school readiness means and ways to support their children such as reading to their children for a minimum of 15 minutes daily.

Community events include Kindergarten readiness activities such as kindergarten roundups, kindergarten "prep" summer camps and family fun days for parents with young children. Families are recruited from the Department of Human Services, area churches, Head Start sites, and Kindergarten/elementary programs in the area. Parents with newborns are recruited through Wayne RESA's and MISD's Great Parents' outreach, and through vigorous outreach through the Parent Coalitions of Great Start Collaboratives in Macomb and Wayne.

Description of Staff from Three Agencies

At the end of this fourth year of programming, there were a total of 11 frontline staff implementing one or more of the three interventions: Play and Learn Groups (nine staff), PAT home visits (seven staff), and social emotional consultation/intervention (two staff). They represent four different racial/ethnic identities. The majority identify as Caucasian (5 staff), and the others as African American (two staff), Arabic (two staff), and Hispanic (two staff). Ages of these staff span roughly thirty years and range from 29 to 61 years old. All are female.

Staff started working on this project between 2012 and 2015. A slight majority started in 2014 (four staff), followed by those who started in 2012 and 2013 (three staff each); one started in 2015. All are paid staff. The number of years paid staff worked in early childhood ranged from five to 29. All of the paid staff have relevant education and training. The nine staff who work in Play and Learn Groups and/or PAT home visits received PAT regional training. The two paid staff who work in social emotional consultation have Masters in either Social Work or Counselling.

B. Overview of Prior Research

Research has demonstrated that Kindergarten readiness is sharply impacted by early literacy home visiting programs.⁵ The PAT home visiting model used in *Ready Children Ready Communities* is a thoroughly evaluated home visiting early childhood intervention program and is widely used to promote improved family and child outcomes. It is one of only 12 home-based intervention models which the Department of Health and Human Services has recognized as being empirically based (Avellar & Supplee, 2015). There have been multiple randomized control trial evaluations of the PAT program. Findings from these RCT evaluations have demonstrated that PAT has a significant and positive impact on social skills, problem solving and cognitive skills amongst children in low income families (Drotor et.al., 2006); reduced risk of child maltreatment via increased parenting knowledge and skills (e.g., Armstrong et al., 2014; Walsh, 2014) and improved home environments for supporting early childhood learning (McCabe and Cochran, 2008).

The research on the importance of mental health interventions is also clear. Experts agree that early intervention is more effective than later interventions,⁶ and that “it is essential to treat young children’s mental health problems within the context of their families, homes, and communities.”⁷ All of the *Ready Child Ready Communities* interventions are based on the importance of early intervention occurring in the context of the child’s own environment.

In the original proposal, it was stated that:

“the Play and Learn Groups model is unique to *Ready Children Ready Communities* and has not yet been designated as an approved evidence-based model. However, the model is based on the research-supported assumption that a child's first teacher is his or her parents. Experts say that the choices families make regarding literacy are more important than the family's income or the caregiver's educational background in predicting future success.⁸ Research shows that when young children and adults interact through talking, singing, and rhyming together they stimulate language development which creates the foundation for learning to read.⁹ These are the types of activities parents and children engage in during Play and Learn Groups.”

It should be noted that the use of groups is one component of the home visit PAT model, and the PAT model is a heavily evaluated, evidence-based model. Most (all but one) program staff who facilitate

⁵ For example, one research study demonstrated that “at age six, children who participated in the NFP home visiting program in Memphis had higher cognitive and vocabulary scores than those in the control group.” (D. Olds, et al., "Effects of Nurse Home-Visiting on Maternal Life Course and Child Development: Age 9 Follow-up Results of a Randomized Trial." *Pediatrics* 120 (2007): e832-e845).

⁶ National Symposium on Early Childhood Science and Policy (undated) In Brief: The Impact of Early Adversity on Children’s Development www.developingchild.harvard.edu.

⁷ Harvard University Center on the Developing Child (undated) In Brief: Early Childhood Mental Health www.developingchild.harvard.edu.

⁸ Ballen, J., & Moles, O. (1994, September). Strong Families, Strong Schools: Building Community Partnerships for Learning. Washington, DC: U.S. Department of Education. [ERIC No. ED 371909].

⁹ Hart, B & Risley, T.R. (1995). *Meaningful differences in the everyday experiences of young American children*. Baltimore, MD: Brookes Publishing.

groups are now trained in the PAT model, and all of them use the principles of PAT in their groups. The group work in the *Ready Children Ready Communities* is, therefore, not unique to the program, as it utilizes the trainings from the evidence-based PAT model.

C. Overview of Study (including design/approach and methodology used)

The major component of this evaluation that is of interest to SIF and CNCS is a quasi-experimental non-equivalent comparison group study that compares parents/guardians who participate in PAT home visits with parents who do not. See Table 1 for a graphic illustration of group assignment.

The program group consists of parents who receive at least five home visits, regardless of whether they participated in Play and Learn Groups. The comparison group consists of parents who participate in at least four Play and Learn Group sessions provided through *Ready Children Ready Communities* but do not receive PAT home visits.

**Table 1:
Quasi-
Experimental
Group Assignment**

		Play and Learn Participant?	
		Yes	No
Home Visit Participant?	Yes	Program Group	Program Group
	No	<i>Comp Group</i>	

Retrospective PreTest (RPT) data (parents comparing themselves “now” with “before” they participated in the intervention) was used to test the major study hypothesis, that the program group will report greater improvement than the comparison group in their:

- Understanding of the principles of early childhood development
- Valuing of reading to their children daily
- Knowledge of how to access community resources

D. Research Questions

1. Impact questions

a) Confirmatory question

The evaluation provides moderate evidence addressing the following *confirmatory* question:

- Do parents who participate in PAT home visits show greater improvement than parents who only participate in Play and Learn Groups in perceived knowledge of the principles of early childhood development, value of reading daily to their children, and knowledge of how to access community resources?

b) Exploratory questions

The evaluation also provides preliminary evidence addressing the following *exploratory* questions:

- Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:
 - o Understanding of the principles of early childhood development?
 - o Valuing of reading to their children daily?
 - o Knowledge of how to access community resources?
- Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:
 - o Understanding of the principles of early childhood development?
 - o Valuing of reading to their children daily?
 - o Knowledge of how to access community resources?
- Is there a statistically significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the PAT home visits?
- Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on at least one behavioral concern (withdrawal/depression, emotional control problems, attention, aggression)?

2. Implementation questions and findings to date

The evaluation is addressing the following implementation questions:

- Is the community outreach successful in recruiting the targeted number of children and parents for participation in PAT home visits, early childhood mental health services and community events?
- Did the program achieve its goal of screening 80% of PAT home visit children for developmental delay using the ASQ?
- Did 75% of children with developmental delays access appropriate developmental health services? This includes:
 - Individual and group counseling provided by the mental health specialist directly to parents
 - Individual and group counseling provided by the mental health specialist to teachers who have students in their classrooms with developmental delays or socio-emotional behavior problems
 - Other referrals for developmental delays
- Are the PAT home visits implemented with fidelity to the model?

- Are the Play and Learn Groups implemented with quality according to the criterion of best practices in early childhood education?
- What types of problems arise in implementing the PAT home visits and how are they resolved?
- What types of problems arise in implementing the Play and Learn Groups and how are they resolved?

Implementation Findings

The first year of evaluation activities focused on defining measures, designing instruments, establishing data collection and processing procedures, and creating an evaluation database. The evaluation was successful in all of these activities, as described in the year one (baseline) evaluation report. This third evaluation report provides information on who was served by *Ready Children Ready Communities* to date, after its fourth year of implementation, and the types of services they received. It also provides summative information to date on the quality of program delivery, and on any problems encountered and their resolution.

Program Reach and Characteristics of Participants

In this fourth year of programming, there were 297 new enrollments of children who started receiving one or more of these services: PAT home visits, Play and Learn Groups and/or social emotional home visits. These newly enrolled children as well as children who were enrolled in the prior year received these services this year:

67 received PAT home visits
 232 participated in Play and Learn Groups
 131 received Social Emotional Home Visits

In addition, this year:

140 children participated in Kindergarten literacy camp
 700 families participated in community events

Over all years, the program has provided 789 Play and Learn group sessions, 1,408 PAT home visitations, 623 social emotional home visits, 72 classroom social emotional consultations, and 42 parent group social emotional sessions (see Table 2). There were 757 children receiving those services, to date, for the grant, and there were 592 children who participated in Kindergarten literacy camp and 700 families at the 70 community events.

**Table 2:
Units of Program Activities to Date (from program start through June 30, 2016)
and Number of Families Served – Reported by Sites**

Program Unit Type	Leaps & Bounds Family Services	Macomb Family Services	MISD
Play and Learn Groups	396 sessions	139 sessions	254 sessions
PAT Home Visits	1,392 visits		16 visits
Social Emotional Home Visits		623 visits, 9 classroom groups (~8 sessions each), and 7 CSEFEL Parent Groups (~6 sessions each)	
Outreach Activities	70 outreach activities (not including flyer distribution and email blasts) / 1 radio ad		
Kindergarten Literacy Camp			37 classes of ~16 children each
	Year 1	Year 2	Year 3
Total N of families served, from site reports*	177	261	292
			Year 4
			360

* These are the number of participants each year (in Play and Learn Groups, PAT home visits and/or social emotional home visits). Children can be counted in multiple years (duplicated). Not all families served had reached participation levels to participate in the evaluation. Year 4 is an estimate of unduplicated children who received one or more of the three types of services within the year.

Table 3 shows the median age of children is 3 years old.

**Table 3:
Age of Children Served**

	Age of Children Served (N=757)
Minimum	0
Maximum	6
Median	3.27
Mean	3.14
Standard Deviation	1.513

Sixty-nine percent of children served have one or more risk factors indicated on their Intake Form. Table 4 shows the number and percent within each group who were reported to have each risk factor. Most report to be low income families (57%) and almost a quarter report parental low educational attainment (23%) and a primary home language other than English (23%). The other four risk areas apply to 4%-18% of children served.

**Table 4:
Risk Factors of Population Served
(N=756)**

	Total
Low family income	57%
Parent/s with low educational attainment	23%
Primary home language other than English	23%
Environmental risk	18%
Diagnosed disability or identified developmental delay	8%
Severe or challenging behavior	6%
Abuse/neglect of child or parent	4%

Development Delay Screenings and Referrals

A total of 97% of PAT home visit children were screened for developmental delay using the ASQ – exceeding the 80% target. Children are screened at their first or second home visit. When children are not screened, it is due to the family not continuing beyond the first visits. Referral information will be reported in the final report.

Fidelity of PAT Home Visit Implementation

Fidelity of PAT Home Visit implementation was assessed during the first year of this evaluation. In addition to the regular supervision described above, an early childhood education expert observed staff conducting home visits. The first round of observations found that the PAT home visits were being implemented with fidelity.¹⁰ The description of the first round of fidelity assessment and results are described in the first (baseline) evaluation report. Fidelity was to be assessed for each new staff providing services, and every other year for staff that have already been assessed. There has been one new staff person since the first fidelity assessment. This new staff member, as well as all staff, will be assessed this fall/winter; the program is scheduling the assessments with a member of the local PAT affiliate. The results will be reported in next year’s evaluation report.

¹⁰ See SPEC’s year one (baseline) evaluation report, *Getting Ready to Measure Ready Children Ready Communities... Baseline SIF Evaluation Report* (July, 2014)

Quality of Play and Learn Group Implementation

Absent a model for assessing fidelity of the Play and Learn Groups, the early childhood education expert created a quality assessment from early childhood development standards and best practices. In year one, the early childhood education expert observed each staff conducting a Play and Learn Group and determined that program implementation met the standards of quality early childhood education delivery. The description of the quality assessment criteria and results are described in the first (baseline) evaluation report. As described above, the second round of observations will be conducted this fall/winter.

Quality of Play and Learn Group implementation is also assessed by surveys that Play and Learn Group parents complete on a quarterly basis. Table 5 shows the cumulative results from parent surveys regarding the quality of the Play and Learn Group sessions.

As the table shows, the Play and Learn Group parents continually give high ratings to their experiences with the program. Ninety percent or more of the survey responses were in agreement that the five dimensions of quality were present during the play and learn sessions. Almost all parents agreed that the facilitators helped them learn from each other (97%), that the session facilitator was friendly and respectful (99%), and that they learned something about how play encourages their child's development (97%). Slightly fewer (93%) agreed that they received a book or other resources after each week's session. Ninety percent agreed that the children were able to use materials that they don't have or use at home.

Table 5:
Play and Learn Group Parents'
Perceptions of Quality of Program Delivery
(N=280-281)

Question/Response	N (%)
Facilitator was friendly and respectful towards adults	
% Agree	280 (99%)
% Undecided	0 (0%)
% Disagree	1 (1%)
Facilitator helped us learn from each other	
% Agree	272 (97%)
% Undecided	8 (3%)
% Disagree	1 (1%)
I learned something about how play encourages my child's development	
% Agree	272 (97%)
% Undecided	6 (2%)
% Disagree	2 (1%)
I received a book or other resources after each week's Play and Learn I attended	
% Agree	261 (93%)
% Undecided	7 (2%)
% Disagree	12 (4%)
Children were able to use materials we don't have/use at home	
% Agree	253 (90%)
% Undecided	18 (6%)
% Disagree	10 (4%)

Challenges Arising in Implementing Play and Learn Groups and their Resolution

In addition to the closed-ended items listed above, the quarterly parent survey includes five open-ended questions that allow respondents to provide their own assessment of program quality:

- What did your child enjoy the most?
- What did you learn about your child's development?
- What would you have changed?
- Was something missing?
- What would you add?

Overall, parent responses to open-ended questions about Play and Learn Group confirmed their satisfaction with the program. Results across the four years of program implementation are largely consistent. Parents reported enjoying the program activities (arts and crafts, letters, reading, music or songs). They also reported appreciating the opportunities for interaction: children-to-children, children-to-parent and children-to instructors.

Across the data collection periods, parents reported an increased ability to recognize their child's needs and awareness of their child's skills or stage of development. Parents reported learning about ways to better recognize their child's needs and types of activities they enjoyed.

When asked what they would have changed, thought was missing, or would add to the program, for the most part, parents made positive remarks like, "Nothing that I can think of, everything is perfect." Similarly across the years, the major suggested area for improvement is to have more – more interactions, space, activities, time, and children participating. Over the years, parents expressed desire for more parenting information to use when at home or more parent training on child development including positive discipline, teamwork, potty training, language development, nutrition, and how to prepare a child for school.

Problems Arising in Implementing PAT Home Visits and their Resolution

Across the years, parents receiving PAT home visits provided feedback about their experiences. Generally, parents were grateful for the activities of PAT and what staff taught them to do with their children. They appreciated the resources PAT provided like books, teaching them songs, and a parent handout on useful and relevant information. Parents appreciated how staff engaged with their child and acknowledged that they now understand better how their child learns. Parents reported learning about their child's development and how to support their child's growth. They reported learning ways to teach their child to read or to encourage their child's taking initiative to do things on their own.

Very few suggestions were made for what to change. A few suggestions were for more visits or for staff to spend more time visiting. A few suggestions were for more work on behavior management. One requested more activities such as foreign languages and field trips.

The only problem identified with PAT home visiting was an early problem with recruitment in an Arabic community located within the SIF target area. The home visit staff identified that the reason for the recruitment problem was lack of trust of strangers. As reported in last year's (year two) evaluation report, this problem was overcome by Arabic speaking PAT staff doing outreach in doctors' offices and WIC programs, and by identifying one gatekeeper, a grandmother in the community, who referred families for PAT home visits (as well as for Play and Learn Groups). Now, one school in the Arabic neighborhood has allowed Play and Learn Groups to be conducted after school in a room that has been dedicated to supporting children and families.

E. Contribution of the Study

1. Level of Evidence Generated by the Study

This evaluation will provide moderate level evidence of the effectiveness of the PAT home visit program as defined by the Corporation for National and Community Service (CNCS):

“Examples of studies that would constitute moderate evidence include: (1) at least one well-designed and well-implemented ...quasi-experimental study supporting the effectiveness of the practices strategy, or program, with small sample sizes or other conditions of implementation or analysis that limit generalizability....”¹¹

This evaluation meets the standards for “moderate evidence” because (a) there is previous evidence of the effectiveness of PAT home visits, (b) it involves third-party evaluators, and (c) it is a well-designed, well-implemented quasi-experimental study but has small sample sizes that will limit its generalizability.¹²

Preliminary evidence is also being collected to test the hypotheses that: (a) children whose family members participate in home visits experience improved general support and literacy stimulation at home, and (b) children with developmental delays in social emotional health show improvement in this growth area after receiving intensive mental health services. The level of evidence is considered “preliminary” because there will be no comparison groups.

Preliminary evidence is also being collected about the screening and referral targets. The level of evidence for these targets is appropriately preliminary because there is no intent to attribute these interventions to any changes in children or parents.

¹¹ Corporation for National and Community Service, Social Innovation Fund (undated) *Evaluation Plan Guidance: A Step-by-Step Guide to Designing a Rigorous Evaluation*, p.3.

¹² These criteria are listed as defining “moderate evidence” in *Evaluation Plan Guidance: A Step-by-Step Guide to Designing a Rigorous Evaluation* (CNCS, Social Innovation Fund, Undated).

2. Strengths and Limitations of the Study

There are many strengths of this study:

Fidelity and quality of implementation: The interventions being implemented in this study are continuously being monitored to assure fidelity and high quality. There are monthly supervisory meetings, biannual expert observations, parent assessments and regular feedback of evaluation findings to both program management and on-the-ground staff.

High quality data: This evaluation makes use of a third-party data entry company that has a reputation for providing high quality data entry and database development services. Constant feedback to the program management about documentation/recording errors and missing data ensures that the final database to be analyzed for this study will be as complete and accurate as possible.

Validated measures: Most of the measures used in this evaluation – HOME, DECA, ASQ:SE – are validated instruments with excellent psychometric properties used within a wide range of populations. The RPT measures created for this study have been tested and shown to have adequate Alpha Coefficient reliability. The reliability of the RPT measures is continually assessed and reported as more cases become available.

Use and Validity of Retrospective Pretest (RPT) Design: RPT is particularly suited for situations in which respondents have little prior knowledge or experience with the concepts or skills that they will be exposed to during the intervention, such as with training programs. Only after they have gained some understanding of the concepts can they adequately assess their level of pre-intervention knowledge or skills. The validity of these “now” versus “before” self-ratings in evaluations of training programs has been well documented in the literature.¹³

This year, the validity of the RPT methodology was assessed by comparing now-then results on the RPT measure for “valuing reading” with pre-post results on a literacy scale created from a subset of ECLES items.¹⁴ The premise of this analysis is that the validity of the RPT measure is

¹³ Campbell, D.T. and Stanley, J. (1963) *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally. Deutsch, M. and Collins, M.E. (1951) *Interracial housing: A psychological evaluation of a social experiment*. Minneapolis: University of Minnesota Press. Goedhart, H. and Hoogstraten, J. (1992) The Retrospective Pretest and the Role of Pretest Information in Evaluative Studies *Psychological Reports* Vol. 70, pp. 699-704. Hawkins, S.A. and Hastie, R. (1990) Hindsight: Biased Judgments of Past Events after the Outcomes are Known *Psychological Bulletin*, Vol. 107 #3 pp 311-327. Howard, G.S., Ralph, K.M., Gulanick, N.A., Maxwell, S.E., Nance, D.W. and Gerber, S.K. (1979) Internal Invalidity in Pretest-Posttest Self-Report Evaluations and a Re-evaluation of Retrospective Pretests *Applied Psychological Measurement* Vol. 3 #1 Winter pp 1-23. Pratt, C.C., McGuican, W.M. and Katsev, A.R. (2000) Measuring Program Outcomes: Using Retrospective Pretest Methodology *American Journal of Evaluation* Vol 21 #3, pp 341-394. Toedter, L.J., Lasker, J.N. and Campbell, D.T. (1990) The Comparison Group Problem in Bereavement Studies and the Retrospective Pretest *Evaluation Review* Vol. 14 #1, February pp. 75-90. Drennan, J., & Hyde, A. (2008). Controlling response shift bias: The use of pre-test design in the evaluation of a master’s programme. *Assessment and Evaluation in Higher Education*, 33(6), 699-709.

¹⁴ Partridge, T. (2012). Reliability and Validity of the Early Childhood Literacy Scale. Unpublished Manuscript cited with permission of author.

confirmed if there is a significant correlation between changes on the RPT items and changes on the pre-post items.

Table 6 shows the items that comprise the two scales:

**Table 6:
ECLES vs RPT Survey Items**

ECLES ITEMS	RPT ITEMS
Items were asked on a Pre-Survey and a Post-Survey	Items were asked two ways on the same survey: a) Please tell us how true this is for you now b) Please tell us how true this was for you before you started (home visits/play and learn groups)
How often did you read to your child? <i>On occasion, Several times a month, Weekly, Several times per week, or Daily</i>	I read to my child every day. <i>5-point scale: (1) Not true at all, (5) Completely true</i>
Did you read the same stories again and again? <i>Never, Sometimes, Often, or Very often</i>	I understand the importance of reading the same stories again and again. <i>5-point scale: (1) Not true at all, (5) Completely true</i>
Did your child ask questions about characters or events during story reading? <i>Never, Rarely, Occasionally, A few times per story, or Frequently during a story</i>	When I read stories to my child I ask what s/he thinks will happen next and why s/he thinks that. <i>5-point scale: (1) Not true at all, (5) Completely true</i>
Did your child independently point to or talk about pictures when you read stories? <i>Never, Rarely, Occasionally, A few times per story, or Frequently during a story</i>	We talk about the pictures when we look at a book. <i>5-point scale: (1) Not true at all, (5) Completely true</i>
Did you point out signs and words such as restaurant names or street signs to your child (i.e., McDonald's arches, Pepsi Logo, etc.)? <i>Never, Rarely, Weekly, Several times per week, or Daily.</i>	When I'm outside with my child I point to words on buildings or street signs. <i>5-point scale: (1) Not true at all, (5) Completely true</i>
How many non-children's books did you own? <i>Less than 5, 5-10, 11-15, 16-20, or more than 20.</i>	

Scale scores were created with each set of items. Pearson R and Spearman Rho were calculated correlating the pre-post/RPT difference on the scale scores. There were a total of 16 surveys with both RPT and pre-post data. Table 7 shows the results.

**Table 7:
Correlations between Pre-Post ECLES Items and
RPT Change Scores for Valuing Reading**

	Correlation	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Pearson's R	.764	.095	4.434	.001 ^c
Spearman Correlation	.694	.146	3.609	.003 ^c
N of Valid Cases	16			

As Table 7 shows, using both measure of correlation, the RPT and pre-post change results are significantly correlated. This suggests that the degree of change reported by parents on the pre-post ECLES items is similar to the before-now change reported on the RPT and supports the validity of the RPT methodology as an adequate assessment of change.

Use of propensity scores: The original intent in this evaluation was to use propensity score matching to identify the appropriate comparison group of Play and Learn Group parents who match the home visit parents on the seven literacy risk factors. The use of propensity score matching methods has become increasingly popular in the program evaluation, prevention and applied social research areas. Randomized Control Trials (RCT) are typically not feasible or ethical in many instances and yet high levels of evidence are perhaps most needed when practice and policy decisions are being made based on empirical findings. While not as causally efficient as RTCs, propensity score matching approximates RCT levels of internal validity. Assuming that potential confounds which bias selection into a treatment vs. control group are correlated, then matching based on observed confounds presumably controls for many, if not most, unobserved (unknown) confounds as well. The advantages of propensity score matching over traditional matched case controls is that it provides a statistical estimate of the actual equivalency of the two groups (e.g., is there an 80% chance, 90% chance, etc. that the groups are equivalent).

Study Limitation

One major limitation of this study is non-Equivalence of the Comparison Data: Random selection of parents into program and comparison groups is not possible in this study. While propensity score matching was attempted in order to make the two groups statistically equivalent on the seven risk factors at baseline, parents in the two groups may differ in other ways as well. For example, the comparison group consists of Play and Learn Group parents who are invited but elect not to receive home visits. This self-selection may result in program parents being already higher on the expected outcomes because they understand the importance of programs such as

PAT home visits to the health and well-being of their children. To the extent that this is true, program group parents will report higher RPT “before” scores on the RPT survey than the comparison parents. Alternatively, other-referred parents to PAT home visits may be referred because they are viewed as particularly high risk for literacy problems. To the extent that this is true, program group parents will report lower RPT “before” scores on the RPT survey than the comparison parents. This difference between the groups in the RPT “before” scores was tested this year and will also be tested in the final round of data analysis.

Small Sample Sizes: While every effort is being made to recruit as many parents as possible into both the program and comparison groups, the power of the evaluation analysis may be reduced due to sample size issues. As noted below, the evaluation is striving for a minimum N of 49 completed RPT parent surveys in each of the two groups (total N=98). As shown below, the Play and Learn Group data have already surpassed the N of 49 useable RPT surveys. The final analyses will provide a power analysis of the minimum detectable effect size for the final actual samples sizes.

3. Connection of this Study to Future Research

This study will add to the body of literature about the effectiveness of PAT home visits by providing moderate evidence testing whether PAT home visits result in greater impact on parent outcomes than the less intensive, group intervention offered through Play and Learn Groups. Alternatively, if the results show that Play and Learn Groups yield the same level of outcomes as PAT home visits, it will provide the first evidence of the effectiveness of the less intensive group intervention.

The evaluation will also result in psychometrically valid measures that assess whether parents who participate in the PAT home visits and/or in the Play and Learn Groups perceive themselves to have a better understanding of principles of early childhood development, of the value of reading to their children daily, and of how to access relevant resources. Measures of these constructs do not currently exist in the early childhood research literature. The measures and psychometric data on them will be available to other researchers wanting to use measures of these constructs in their own work. The RPT measure for the Play and Learn Groups has been validly translated into Arabic¹⁵ (i.e. using translation-back translation techniques) thus increasing its appropriateness for use with Arabic-speaking parents in other Play and Learn Group settings.

¹⁵ More information on the creation of the English and Arabic versions of the RPT surveys can be found in the year one (baseline) evaluation report.

II. Study Approach and Methods

A. Implementation Study Design

The implementation evaluation focuses on two aspects of program delivery, fidelity of the PAT home visits and quality of both home visits and Play and Learn Group sessions. Results to date on fidelity and quality of program implementation are described both above and in the year one (baseline) evaluation report. Results to date support the conclusion that both interventions are being implemented with a high degree of quality.

B. Impact Study Design

The research hypothesis guiding the impact evaluation is that parents who participate in PAT home visits will improve more on the expected program outcomes than parents who participate only in Play and Learn Groups. The program outcomes for parents are:

- Better understanding of the principles of early childhood development
- Greater valuing of reading to their children daily
- More knowledge of how to access community resources

The first research hypothesis for children is that after parents participate in PAT home visits, preschoolers will experience:

- Improved literacy stimulation at home
- Improved general support at home

The second research hypothesis for children is that developmental delays in social emotional health will be reduced for children receiving intensive mental health services.

If parents and children achieve these outcomes, more children in the community are expected to be academically ready for Kindergarten. For many of these children Kindergarten will be years away. Therefore, Kindergarten readiness of children is not being measured as part of the evaluation. More appropriately, the following two immediate outcomes for children are being assessed:

- Early detection of developmental delays
- Access to services needed by children with developmental delays

C. Sampling, Measures, and Data Collection

1. Sampling

The entire population of PAT home visit and Play and Learn Group parents who meet the evaluation inclusion criteria and who complete the evaluation instruments will be included in the impact evaluation. Children are selected for the program through agency referrals and families can self-refer. Children are prioritized by risk factors. During a full grant year, this is expected to yield a total of 60 children served through PAT home visits. The number of children who participate in Play and Learn Groups is expected to be around 120. We anticipate that 500 children will participate in the community

events with their parents. A subset of these families are expected to become involved in the Play and Learn Groups.

Preliminary data are collected on all children receiving mental health screening and referrals. Over the five-year period, this number is expected to be 500 children.

2. Measures

The following instruments are being used (see the year one [baseline] evaluation report for a copy of each of the instruments that were developed; copyrighted instruments are not included).

Intake (Enrollment) Form

An Intake Form was created for this evaluation which collects information about:

- The preschool child targeted by the interventions
- Legal parent/guardians
- Literacy risk factors (listed later)
- Consent to participate in the evaluation

PAT Home Visit Program Survey

The Home Visit Program Survey is a short, open-ended survey that staff ask parents to complete at the end of the series of PAT home visits. The survey is used to assess the quality of the PAT home visits from the perspectives of the parents.

Home Observation for Measurement of the Environment (HOME)

The Home Observation for Measurement of the Environment (HOME) is used as a measure of program outcomes for the PAT home visits. The HOME is used as a pre-post assessment of changes in children's family literacy environment after the intervention. The Administration for Children and Families offers the following description of the measure:

“The Home Observation for Measurement of the Environment (HOME) Inventory is designed to measure the quality and extent of stimulation available to a child in the home environment. The Infant/Toddler HOME Inventory (IT-HOME) comprises 45 items that provide information from the child's perspective on stimuli found to affect children's cognitive development. Assessors make observations during home visits when the child is awake and engaged in activities typical for that time of the day and conduct an interview with a parent or guardian. The IT-HOME is organized into six subscales:

- (1) Responsivity: the extent of responsiveness of the parent to the child;
- (2) Acceptance: parental acceptance of suboptimal behavior and avoidance of restriction and punishment;
- (3) Organization: including regularity and predictability of the environment;
- (4) Learning Materials: provision of appropriate play and learning materials;
- (5) Involvement: extent of parental involvement;

(6) Variety in daily stimulation.

For the IT-HOME, 18 items are based on observation, 15 on interview, and 12 on either observation or interview.”¹⁶

There is also an early childhood version of HOME for 3-6 year olds made up of 55 items and eight subscales. The PAT home visit staff use the version of HOME appropriate for the age(s) of child(ren) in the home except in instances where the child ages out of one version of HOME between the pre and posttest. In these cases, the earlier version of HOME is used for the posttest so that the appropriate change analysis can be performed.

The interrater reliability of the HOME assessments was assessed during the first year of this evaluation. Very high interrater reliability was found. Description of the reliability assessment and results can be found in the year one (baseline) evaluation report.

Play and Learn Program Survey

The Play and Learn Program Survey is a short survey administered once every quarter to all parents attending Play and Learn Groups including those who are not participating in the evaluation (because staff want feedback from all parents for continuous quality improvement purposes). The survey contains both open-ended and closed-ended questions to assess quality of program delivery from the parents’ perspectives. The survey also asks parents to report their perceptions of how they used the information and materials from the Play and Learn Groups.

RPT Parent Survey

The RPT parent survey has two versions: Play and Learn Group and PAT home visit. The RPT questions were developed for this evaluation as the key measure of the three parent outcomes:

- Better understanding of the principles of early childhood development
- Greater valuing of reading to their children daily
- More knowledge of how to access community resources

The RPT parent survey also contains counterfactual items. Counterfactual items were placed on the surveys that Home Visitation and Play and Learn Group participants complete in order to control for threats to internal validity. Counterfactual items are survey questions that ask about outcomes that are not expected to change as a result of participation in either of these programs. Since in the RPT design the participant is his/her own comparison, the use of counterfactual items reduces the threat to internal validity due to the use of non-equivalent comparison groups.¹⁷ As these interventions are based on a well-developed logic model and theory of change, the counterfactual, as part of the broader theory based approach to evaluation¹⁸ can be used as an effective additional means of control.

¹⁶ This description of the HOM Observation Tool was taken from:

http://www.acf.hhs.gov/programs/opre/ehs/perf_measures/reports/resources_measuring/res_meas_phio.html.

¹⁷ For a more detailed discussion of this methodology see Trochim, W. (1985) Pattern Matching, Validity, and Conceptualization in Program Evaluation. *Evaluation Review* Vol. 9 No. 5, October pp. 575-604.

¹⁸ See Lipsy, 1993; Weiss, C.H. (1997) Theory-Based Evaluation: Past, Present, and Future *New Directions in Evaluation*, no. 76, Winter, 1997.

The validity of the results is enhanced if participants change in the expected direction on the items measuring program outcomes, but do not change on the counterfactual items. The counterfactual is an outcome that should not occur as a function of the treatment but is reasonably associated with potential confounds and covariates. In this evaluation counterfactual outcomes were measured such as a child learning to use the toilet which is reasonably associated with the natural maturation of a child. If there is a change in both the treatment outcome and the counterfactual outcome then the change in both could be due to some third variable (e.g., maturity, cultural differences) because the intervention could not directly lead to a change in the counterfactual outcome. If the counterfactual outcome does not change and it is linked to potential confounds with treatment, then it can be assumed that the confounds were not acting on the sample and the intervention was producing the change in treatment outcome.

Counterfactual items also estimate the extent of social desirability. If the counterfactual items show the same results as the data on expected outcomes, this could mean that certain participants are wanting to answer the survey questions in a way that show outcomes in order to support the program staff.

Data on the initial psychometric testing of RPT parent surveys are included in the year one (baseline) evaluation report. Psychometric testing using the larger N of RPT data available to date indicate that the measures continue to have adequate convergent reliability (as assessed by Coefficient Alpha). Table 8 shows the results of the reliability testing on this larger sample of Play and Learn Group parents.

**Table 8:
Reliability Test Results for RPT Surveys**

Outcome	Alpha Coefficient for RPT “Before” items		Alpha Coefficient for RPT “Now” items	
	PAT Home Visit Group (N=61)	Play and Learn Group (N=105)	PAT Home Visit Group (N=61)	Play and Learn Group (N=105)
Understanding principles of early childhood development	0.994	0.871	0.850	0.783
Valuing of reading to child daily	0.930	0.877	0.898	0.707
Knowledge of how to access community resources	0.928	0.878	0.805	0.821

Devereux Early Childhood Assessment (DECA)

Devereux Early Childhood Assessment (DECA) and the *DECA-Clinical Form* (DECA-C) are pre-post assessments of resilience in preschoolers ages 2 to 5 with social and emotional problems or significant behavioral concerns. The DECA or DECA-C are administered, as appropriate, by staff for children entering or being assessed for social emotional consultation/intervention services. Use of the DECA allows for a pre-post outcome assessment of changes in resilience of children after participating in mental health services. The DECA is used by staff for assessment and goal planning. Staff use the DECA in instances where the mental health services are provided to individual children and when staff are working in consultation with teachers of an enrolled child. DECA creators report:

“Studies indicate that the DECA-C is a reliable instrument for assessing preschool children's behavioral concerns. The internal reliability estimates for each scale were calculated separately for each rater (parent or teacher). For parents, the alpha coefficients range from a low of .66 on Withdrawal/ Depression to a high of .78 on Emotional Control Problems, with a median of .76. For teachers, the alpha coefficients range from a low of .80 on Withdrawal/Depression to a high of .90 on Attention Problems, with a median of .88. The teacher alpha coefficients all meet or exceed the standard suggested by Bracken.”¹⁹

DECA and DECA-C were used to provide preliminary evidence regarding the effectiveness of the intensive mental health interventions. Only the summative scores on each factor were provided to the evaluator, so it was not possible to test the DECA's psychometric properties for the participants in this evaluation.

Ages and Stages Questionnaire

The Ages and Stages Questionnaire (ASQ) is used to screen children with developmental delays and other risk characteristics at enrollment into the PAT home visits. If the ASQ screen suggests developmental delays, the more in-depth ASQ:SE (Social-Emotional) is used to determine whether the family should be referred for mental health services. The evaluation does not analyze any ASQ data. Rather, the evaluation only records whether children were screened using the ASQ upon enrollment into the PAT home visits. Therefore, the psychometric properties of the ASQ are not being assessed as part of this evaluation.

3. Data Collection Activities

Evaluation data collection began in 2013, after the program had started serving families. All evaluation data are collected by project staff. For the PAT home visits, the Intake Form data are collected at enrollment if the parent did not already participate in Play and Learn Groups. For the Play and Learn Groups, Intake Form data are collected either after the parent completes four sessions or at enrollment (and then parents are assigned to the evaluation after they have completed four sessions).

Baseline and end-of-program HOME data are collected by the PAT home visit staff who also administer the PAT home visit RPT parent survey and program survey to parents after at least five home visits or at

¹⁹ Retrieved from: <http://www.devereux.org/site/DocServer/DECA-C-Booklet.pdf?docID=3262>.

the end of the home visit cycle (typically but not always eight visits). The number of completed PAT home visit RPT parent surveys is lower than the number served due to several factors. Parent dropout before completing at least five visits is one factor. Also, staff found that sometimes parents would cancel the last visit, so the surveys would not be completed. Staff have since started administering the survey prior to the last visit, but after at least five sessions to ensure a higher response on the RPT parent survey.

Play and Learn Group parents who participated in four or more sessions are asked to complete the RPT parent survey at quarterly intervals. Each quarter, one week is designated for surveying Play and Learn Group parents. Play and Learn Group staff collect RPT parent survey data from eligible participants during that week. Processes in place to protect parent privacy are described below, in *Section IV: Study Logistics Updates Part A. Protection of Human Subjects*.

III. Statistical Analysis of Impacts

A. Analysis Approach

Repeated measures ANOVA was originally the major analytic approach to analyze the RPT data, looking for the statistical significance of the group-by-time interaction, with the PAT Home Visit group expected to show greater before-now change than the comparison group on participants' self-assessments on the three outcome measures. Because they may remain in the Play and Learn Groups as long as they like, these parents may complete more than one RPT survey. The last survey completed by parents who only participate in Play and Learn was to be used in the analysis for the comparison group; the survey completed at the end of the home visit series was used in the analysis for the program group. As described above, propensity score matching was to be used to reduce selection bias. As described below, this analytic approach needed to be revised because of the propensity score matching results. Instead, repeated measures Analysis of Covariance (ANCOVA) was used as the major analytic approach with the cumulative score on the seven literacy risk factors used as the covariate.

Prior to testing the impact evaluation questions, descriptive statistics were computed for all variables in the study. Data were screened to assess distributional assumptions and the presence of outliers. Skew and kurtosis values were computed by dividing each parameter by its corresponding standard error to test for significant deviations from normality. Because this ratio yields a t-value, any ratio ≥ 1.96 is considered to be a significant deviation from normality. All variables determined to be significantly skewed were to be transformed using a natural log transformation. Data were also screened for outliers using a standard z-score cut off value of ± 3.29 ($\alpha = .001$). The stem and leaf and box plots were examined using SPSS.

B. Unit of Assignment and Analysis

Data will be analyzed at the parent or child level, depending on the instrument.

C. Formation of Matched Groups

Propensity score matching was attempted to statistically control in the analyses for selection bias of parents who elect to participate in the PAT home visits. The propensity scoring method involves estimating the probabilities that a participant will be exposed to the treatment (home visit) v. control (Play and Learn) groups. The use of propensity scoring methods has been expanding in program evaluation as it provides an alternative to randomized control trials which are often, as is the case in this program, untenable to implement (Guo & Fraser, 2013). Propensity scores are conditional probability estimates of receiving treatment given a set of measured covariates. This can be expressed as a binary logistic regression of the form, $P(T_i | X_i = x)$, where P is the probability of person i receiving treatment T , given that person i has a specific set of values x on the vector of conditioning or covariate variables X . These covariate variables X are potential confounds related to self-selecting into treatment which might be an alternative explanation for mean differences in the outcome for those receiving treatment and those in a control group.

Using this approach an individual propensity score can be calculated in the form of a logit or log odds such that $\log^e(P/1-P)$ yields a log odds or logit estimate of the likelihood of receiving treatment given the values of the covariates for that person. Once these logits are calculated individuals in the treatment

group and the control group are matched based on their propensity scores or individual logit values. Since these values are not usually exactly the same a method is needed to determine how closely a control propensity score needs to be to a treatment propensity score to be considered a match. While this approach in principle simulates randomization, it doesn't control for unmeasured confounds (Stürmer et al., 2006). However, with a strong basis for the selection of variables used to generate the propensity score, selection bias can be substantially reduced (Hansen, 2008; Rosenbaum & Rubin, 1984). For the purposes of this evaluation we will use the nearest neighbor method as we are basing the match on a single propensity score. Nearest neighbor matching involves calculating the smallest absolute difference between any two pairs of individuals' propensity scores among all the treatment and control group pairs. Any difference that falls within the range of that minimum distance is considered a match.

Propensity scores were generated for Play and Learn Group and Home Visitation parents using the following variables collected on the Intake Form that estimate risk of literacy problems:

- Low income
- Diagnosed disability or identified developmental delay
- Severe or challenging child behavior
- Primary home language other than English
- Low parental education attainment
- Abuse/neglect of child or parent
- Environmental risk (e.g., significant loss in family, chronic illness, teen parent, homelessness, etc.)

These seven variables are the same risk factors used throughout Michigan by the Michigan Department of Education's Great Start Readiness Program to rank children and determine eligibility for the state-funded preschool program. The risk factor list was initially much longer (including more than 20 risk factors), but changed in the last five years to create an easier system for enrolling children. It is important to note that many of the more specific risk factors from the larger list were combined to be part of the broader risk factors from the new list.

The propensity score method did not find any matches using a variety of methods without expanding the propensity caliper (i.e., the degree of discrepancy between a case and a potential match) to such a degree as to make the comparison unequal), including making a cumulative risk variable and using the "before" RPT responses. The program and comparison groups were found to be too different. Therefore, the decision was made to use all comparison group parents in the analysis and to use repeated measures ANCOVA rather than ANOVA, controlling for cumulative risk score in all comparative analyses.

D. Treatment of Missing Data

It was anticipated that retention of program participants in the evaluation will parallel their retention in the program. Various methods are being used to address missing data.

To test the self-selection bias resulting from program dropout, PAT home visit parents who dropped out before the post-visit HOME observation were compared with parents who completed the post-visit HOME observation on the same seven risk characteristics noted above. Findings to date indicate that there are significant differences on three of the seven risk factors between PAT home visit parents who dropped out and those who completed the post HOME assessment (see risk factors in blue text in Table 9). Families

with the risk factors of low income, low educational attainment of parent, and primary home language other than English, tend to stay with the program versus those families who are not at risk. That is, those with the greatest need tend to stay with the program.

Table 9:
Risk Factor Comparison: Post-visit HOME observation completions vs drop outs

	Home Visit Post-Assessment Parents (N=54)	Home Visit “Drop outs” Before the Post Assessment (N=30)
	% at risk	% at risk
Low family income	93%	73%*
Parent/s with low educational attainment	67%	23%**
Primary home language other than English	69%	17%***
Environmental risk	37%	43%
Diagnosed disability or identified developmental delay	9%	3%
Severe or challenging behavior	6%	3%
Abuse/neglect of child or parent	4%	0%

* p=0.016.

** p=0.000.

*** p=0.000.

Dropout for the Play and Learn Group is not problematic for the evaluation because the “now” and “before” RPT data are collected at a single point in time, and are collected at quarterly intervals from any parents who attended four or more sessions. Participation log data are used to estimate and report evaluation dropout rate from the Play and Learn Groups, since we will know who was eligible to complete the RPT parent survey each period and who actually completed the survey. Differences between eligible parents who complete the RPT survey and those who do not will be examined in the final report using the same risk items from the Intake Form listed above.

Missing data analyses was conducted on RPT survey data in order to determine whether or not data is Missing Completely at Random (MCAR), Missing at Random (MAR) or Not Missing at Random (NMAR). This included Little and Rubin’s MCAR test (Little and Rubin, 1987) and t-tests comparing baseline data for completers v. those with missing data. If data meet the standard of at least MAR, there may be systematic differences in the reason for missing data, but missingness is not related to the outcome variable of interest. Assuming the data are at least MAR multiple imputation was used to impute the missing values (see Graham and Schaeffer, 2002) on survey items.

Using the data available to date, the missing data analysis revealed that there was very little missing data. The estimated imputed means and variances do not differ from the non-imputed means and variances. The conclusion drawn is that the data can be used without any corrections needed.

E. Analysis Model/Type

1. Tests for Statistical Significance

The major test for statistical significance was the F-test at $p < 0.05$ level for the group-by-time interaction within a repeated measures ANCOVA analysis, controlling for cumulative risk.

2. Adjustment for Multiple Comparisons

In cases where there are multiple sub-hypothesis tests which inform an omnibus hypotheses a Sidak-Bonferonni adjustment will be implemented in the final report in order to control for familywise error and yield a nominal alpha level of .05.

3. Assessment of Effect Sizes

G*Power (v. 3.1.9.2) was used to estimate the minimum sample size required to achieve a power of .8 for a moderate effect size ($f = .25$) at an alpha of .05.

IV. Findings, Lessons Learned, and Next Steps

Below we present findings from the data available to date.

Preliminary Impact Analysis: Confirmatory question

As noted above, G*Power (v. 3.1.9.2) was used to estimate the minimum sample size required to achieve a power of .8 for a moderate effect size ($f=.25$) at an alpha of .05 is 98 families. This analysis resulted in an estimate of approximately 49 surveys needed per group to reach moderate power. To date, RPT surveys have been collected from:

61 from PAT home visit participants
105 from Play and Learn Group participants²⁰

**Table 10:
Quasi-
Experimental
Ns To Date**

		Play and Learn Participant?	
		Yes	No
Home Visit Participant?	Yes	N=20	N=41
	No	N=105	

Below we present the preliminary findings related to the confirmatory question:

- Do parents who participate in Home Visitation show greater outcomes of perceived increase in knowledge and understanding than parents who only participate in Play and Learn Groups of the principles of early childhood development, value of reading daily to their children and how to access community resources?

For each of the three expected outcomes, the report below shows:

- The RPT survey items comprising each scale
- The Coefficient Alpha for the scale using the most recently available data
- The repeated measures ANCOVA looking for statistically significant group by time interaction
- Descriptive statistics with particular interest in standard deviations of before and now scores

²⁰ Because Play and Learn Group participants complete the survey approximately every quarter, there are multiple surveys completed by parents. When there were multiple measures from parents, the last survey parents completed was used in this preliminary analysis. Removing multiple surveys, as well as four surveys where all scale score differences were negative, resulted in this N.

Comparison of Risk Factors: Home Visit vs. Play and Learn Groups

Table 11 shows the percent of families in the two groups which were assessed as having each risk factor. As the table shows, the Home Visit group demonstrates much higher risk on several of the factors: low income, environmental, low educational attainment and primary home language other than English. These differences between the two groups were taken into account in the outcome analyses (described below) by summing the risk factors into a cumulative risk score which was then used as the covariate in the repeated measures ANCOVA.

**Table 11:
Risk Factors By Group**

	Home Visit (N=61)		Play and Learn (N=105)	
	#	%	#	%
Low family income	56	92%	49	47%
Environmental risk	21	34%	5	5%
Parent/s with low educational attainment	41	67%	6	6%
Primary home language other than English	47	77%	18	17%
Diagnosed disability or identified developmental delay	4	7%	10	10%
Severe or challenging behavior	3	5%	2	2%
Abuse/neglect of child or parent	3	5%	0	0%

Stories of PAT Home Visit Success

A Yemeni mother with one child contacted the Parent Educator wanting to receive home visits. The mother did not speak English and had been in the U.S. for three years. The mother expressed concerns because her child, who was two years old at the time, was not speaking. Agency staff completed an ASQ/ASQ SE on the first home visit. Results were such that an immediate referral was made to Early-On where the child was diagnosed as autistic. The child began receiving services through Early-On and the PAT Parent Educator continued home visits with the mother and child for one year. The child is now enrolled in a special preschool program and the mother continues to contact the Parent Educator for support and referrals. The mother also participates in parent workshops at the agency.

A Yemeni mother, who has a 4th grade Yemeni school education and few English skills, and her two children (ages 2 and 9 months) began receiving home visits. The focus was on children's development. Much time was spent focusing on using children's books for learning. The PAT Parent Educator showed the mother how to create stories based on book pictures. This mother and her two children also joined Play and Learn Groups. Through her experiences there, this mother participated in a community of other English language learners while also learning with her children through the group activities. The mother is now speaking a bit of English and her children are thriving. The sense of isolation that she and therefore her children were experiencing has been greatly diminished.

Difference between home visit and Play and Learn parents in perceived change in valuing of reading to child daily

The six items on the RPT survey measuring this outcome are:

1. I read to my child every day.
2. I understand the importance of reading the same stories again and again.
3. When I read stories to my child(ren) I ask what they think will happen next and why they think that.
4. My child sees me read.
5. We talk about the pictures when we look at a book.
6. When I'm outside with my child(ren) I point to words on buildings or street signs.

**Table 12:
Reliability Statistics:
Value of Reading to Child Daily**

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
BEFORE items	.934	.935	6
NOW items	.790	.790	6

Current reliability statistics reveal that this scale continues to have good reliability (see Table 12).

Repeated measures ANCOVA comparing the program and comparison groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 13 and Figure 2 illustrate these findings. Parents in both groups perceived an increase in their valuing of reading to their children daily, providing preliminary evidence of higher ratings of both groups on this outcome. The home visit group changed more than the Play and Learn Group on this outcome, supporting the confirmatory hypothesis of the stronger outcomes achieved by the PAT Home Visit group.

**Table 13:
Tests of Within-Subjects Contrasts
Measure: Valuing of Reading to Child Daily**

	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Main Effect	147.808	1	147.808	15.167	.000	.087	15.167	.972
Group*Time	203.816	1	203.816	20.914	.000	.116	20.914	.995
Risk	343.580	1	343.580	35.255	.000	.181	35.255	1.00
Error	1549.525	159	9.745					

a. Computed using alpha = .05

Figure 2: RPT Program vs. Comparison Group Results:
Parent Reports of Valuing Reading to Child Daily

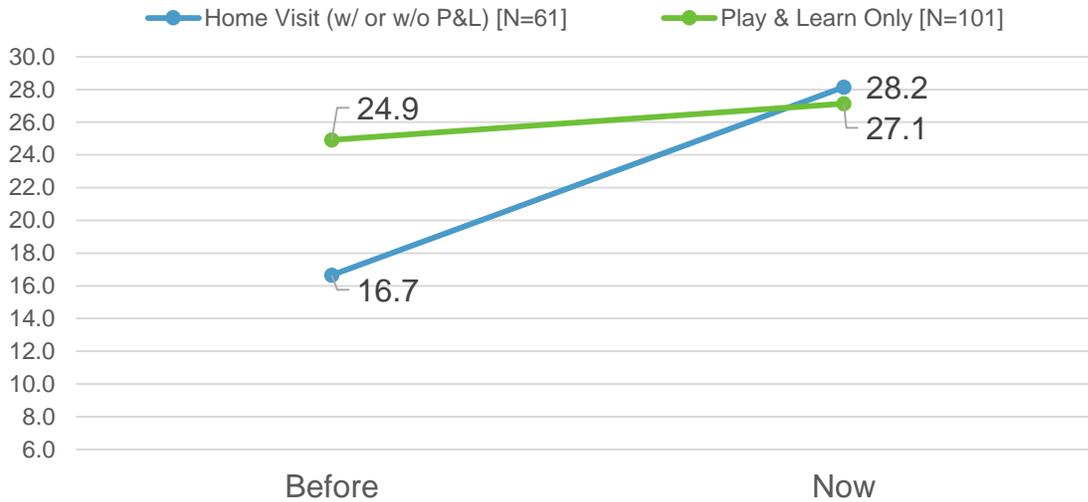


Table 14:
Descriptive Statistics:
Value of Reading to Child Daily Scale Score

	Type	Mean	Std. Deviation	N
BEFORE	Home Visit Survey	16.66	6.527	61
	P&L Survey	24.91	6.242	101
	Total	21.80	7.003	162
NOW	Home Visit Survey	28.15	3.516	61
	P&L Survey	27.14	3.164	101
	Total	27.52	3.256	162

Difference between home visit and Play and Learn parents in perceived knowledge of how to access community resources

The five items on the RPT survey measuring this outcome are:

1. I know how to access information on community events.
2. I know where to go if someone in my family needs educational services [e.g. preschool, speech and language].
3. I know what kinds of help are available in my community.
4. I know where to find information that I need to help my family [e.g. medical care, dental care].
5. I feel comfortable going to talk to someone to make sure my child's educational needs are met.

**Table 15:
Reliability Statistics:
Knowledge of How to Access Community Resources**

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
BEFORE items	.916	.917	5
NOW items	.823	.833	5

Current reliability statistics reveal that this scale continues to have good reliability (see Table 15).

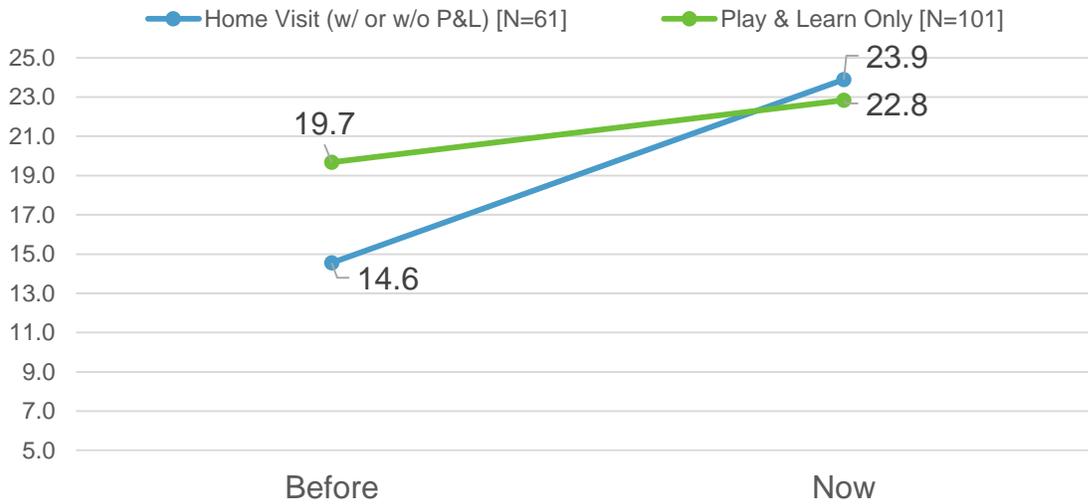
Repeated measures ANCOVA comparing the program and comparison groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 16 and Figure 3 illustrate these findings. Parents in both groups perceived an increase in their knowledge of how to access community resources since participating in the interventions, providing preliminary evidence of higher ratings of both groups on this outcome. The home visit group changed more than the Play and Learn Group on this outcome, supporting the confirmatory hypothesis that PAT Home Visit parents should show stronger outcomes.

**Table 16:
Tests of Within-Subjects Contrasts
Measure: Knowledge of How to Access Community Resources**

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Main Effect	119.913	1	119.913	13.980	.000	.081	13.980	.960
Group*Time	37.828	1	37.828	4.410	.037	.027	4.410	.551
Risk	289.741	1	289.741	33.778	.000	.175	33.778	1.00
Error	1363.860	159	8.578					

a. Computed using alpha = .05

**Figure 3:
RPT Program vs. Comparison Group Results:
Parent Reports of Knowledge of How to Access Community Resources**



**Table 17:
Descriptive Statistics:
Knowledge of How to Access Community Resources Scale Score**

	Type	Mean	Std. Deviation	N
BEFORE	Home Visit Survey	14.55	5.608	61
	P&L Survey	19.67	4.811	101
	Total	17.74	5.684	162
NOW	Home Visit Survey	23.89	2.058	61
	P&L Survey	22.83	2.755	101
	Total	23.23	2.56	162

Difference between home visit and Play and Learn parents in perceived understanding of principles of early childhood development

The six items on the RPT survey measuring this outcome are:

1. I am aware of activities I can do to help my child learn and develop.
2. I believe that things I do every day will influence the kind of adult my child will become.
3. I feel confident in my role as my child's first teacher.
4. I feel confident in my ability to redirect my child's behavior.
5. I know how to guide my child in making friends.
6. I know what my child should be able to do for his age.

**Table 18:
Reliability Statistics:
Understanding of the Principles of Early Child Development**

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
BEFORE items	.945	.946	6
NOW items	.808	.811	6

Current reliability statistics reveal that this scale continues to have good reliability (see Table 18).

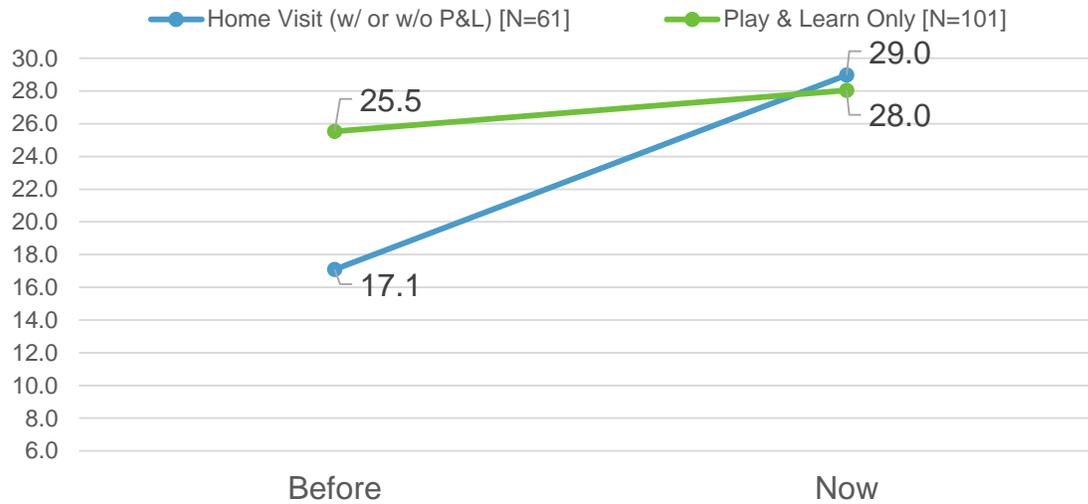
Repeated measures ANCOVA comparing the program and comparison groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 19 and Figure 4 illustrate these findings. Parents in both groups perceived an increase in their understanding of the principles of early childhood development since participating in the interventions, providing preliminary evidence of higher ratings of both groups on this outcome. The home visit group changed more than the Play and Learn Group on this outcome, supporting the confirmatory hypothesis that PAT Home Visit parents should show stronger outcomes.

**Table 19:
Tests of Within-Subjects Contrasts
Measure: Understanding of the Principles of Early Child Development**

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Main Effect	215.097	1	215.097	21.004	.000	.117	21.004	.995
Group*Time	242.238	1	242.238	23.655	.000	.130	23.655	.998
Risk	296.115	1	296.115	28.916	.000	.154	28.916	1.000
Error	1628.265	159	10.241					

a. Computed using alpha = .05

**Figure 4:
RPT Program vs. Comparison Group Results: Parent Reports of
Understanding the Principles of Early Childhood Development**



**Table 20:
Descriptive Statistics:
Understanding of the Principles of Early Child Development Scale Score**

	Type	Mean	Std. Deviation	N
BEFORE	Home Visit Survey	17.10	6.911	61
	P&L Survey	25.54	4.343	101
	Total	22.36	6.807	162
NOW	Home Visit Survey	28.97	2.168	61
	P&L Survey	28.04	2.525	101
	Total	28.39	2.432	162

RPT results on counterfactual items

Counterfactual items were included on the RPT survey in order to control for threats to internal validity, such as social desirability.

The three counterfactual items on the RPT survey are:

1. I know that it's important to teach my child to not talk to strangers.
2. I know that it's important to teach my child to not run into the street.
3. I know to teach my child to use and flush the toilet.

**Table 21:
Reliability Statistics:
Counterfactual**

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
BEFORE items	.941	.941	3
NOW items	.648	.715	3

Because the three items were not intended to measure a single construct, high reliabilities on the scale of counterfactual items were not expected. As Table 21 reveals, in fact, the Cronbach's Alpha was reasonably high for both the "now" and the "before" items. A possible reason for this is that even though the items reflect different concepts, parents were expected to answer in the same way (agreement) on each of the three items.

Repeated measures ANCOVA comparing the program and comparison groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 22 and Figure 5 illustrate these findings. As Figure 5 also illustrates, parents in the Play and Learn Groups showed almost no change in the counterfactual items. This is what was expected.

On the other hand, parents in the home visit group showed a large change on these items. We explored one explanation provided by program staff; staff indicated that the PAT home visit group included a large number of non-English speaking families who emigrated from other countries. It is possible that these parents did, in fact, learn some of the constructs embedded in the counterfactual items due to cultural differences in what their children are allowed to do, and attributed these learnings to participation in the home visits. For example, staff report that many of the PAT home visit parents come from countries where their markets and socializing is done on the street, so the concept of "I know that it's important to teach my child to not run into the street" may be an item that could change for these families. Similarly, children often are translators for their parents, and, in that process, may speak with strangers. To explore this rationale, the ANCOVA on the counterfactual items was re-computed

comparing PAT home visit families with the risk factor “primary home language is other than English” with those who did not have that risk factor. Figure 6 shows that those in homes where the primary language is not English (noted by “ESL” – English as a Second Language) had much lower “before” scores (mean score of 8.2), compared with PAT home visit families whose primary language is English (mean score of 13.4). This result supports the contention that the unexpectedly large difference in pre-post counterfactual ratings is due to the scores from the non-English speaking home visit participants.

Another explanation for this pre-post difference among PAT home visit parents is that parents in the home visit group received the RPT parent survey during one of the last home visits and from the PAT home visit staff. Even though the staff followed the instructions of asking parents to place the completed survey in a sealed envelope, there may still have been psychological factors involved such as parents bonding more to the PAT home staff than to the Play and Learn staff and, therefore, wanting their survey results to demonstrate positive impact of the program.

**Table 22:
Tests of Within-Subjects Contrasts
Measure: Counterfactual**

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Main Effect	21.481	1	21.481	6.601	.011	.040	6.601	.724
Group*Time	57.166	1	57.166	17.568	.000	.099	17.568	.986
Risk	80.899	1	80.899	24.862	.000	.135	24.862	.999
Error(LS)	517.374	159	3.254					

a. Computed using alpha = .05

Figure 5:
RPT Program vs. Comparison Group Results:
Parent Reports on Counterfactual Scale

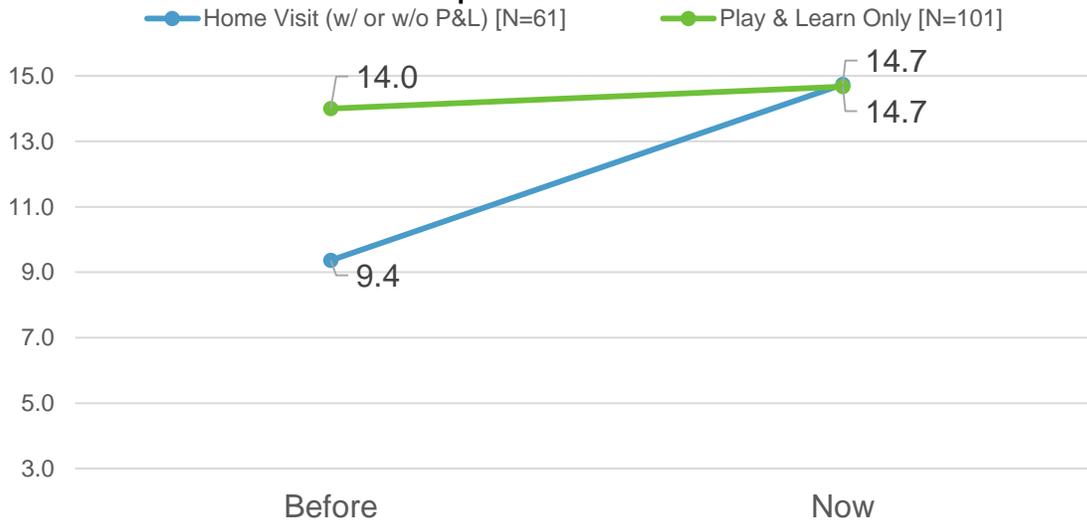
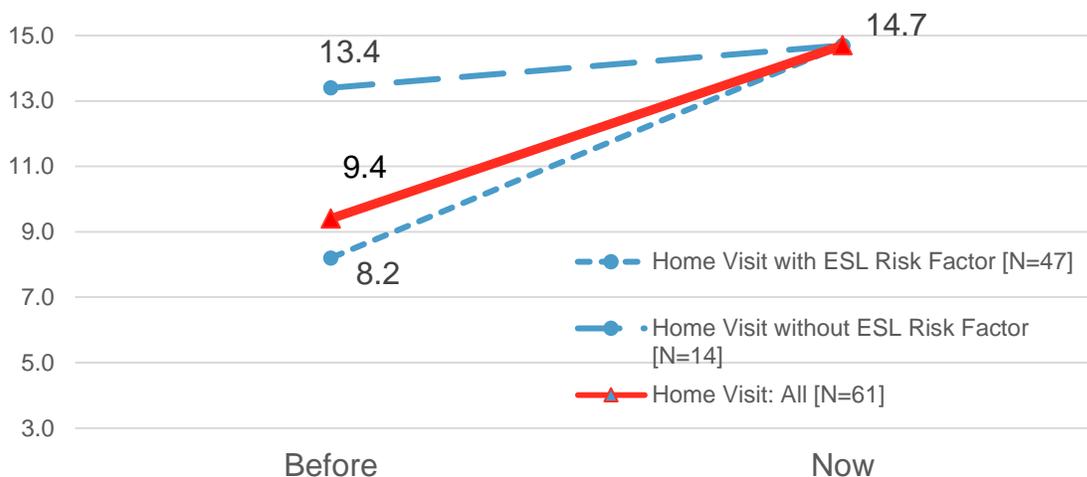


Table 23:
Descriptive Statistics:
Counterfactual Scale Score

	Type	Mean	Std. Deviation	N
BEFORE	Home Visit Survey	9.36	3.933	61
	P&L Survey	14.00	2.195	101
	Total	12.25	3.721	162
NOW	Home Visit Survey	14.74	.681	61
	P&L Survey	14.67	1.03	101
	Total	14.70	.913	162

**Figure 6:
RPT Home Visit Results by ESL Risk Factor
Parent Reports on Counterfactual Scale**



**Table 24:
Descriptive Statistics:
Counterfactual Scale Score**

	Type	Mean	N	Std. Deviation
BEFORE	Home Visit Group with ESL Risk Factor	8.17	47	3.31
	Home Visit Group without the ESL Risk Factor	13.36	14	3.23
	Total	9.36	61	3.93
NOW	Home Visit Group with ESL Risk Factor	14.74	47	0.64
	Home Visit Group without the ESL Risk Factor	14.71	14	0.83
	Total	14.74	61	0.68

Exploratory Questions #1 and 2

Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:

- o Understanding of the principles of early childhood development?*
- o Valuing of reading to their children daily?*
- o Knowledge of how to access community resources?*

Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:

- o Understanding of the principles of early childhood development?*
- o Valuing of reading to their children daily?*
- o Knowledge of how to access community resources?*

As noted above, the repeated measures ANCOVA revealed a significant main effect of time, showing that in both groups taken together, the parents reported significant improvements on these outcomes from “before” to “now.”

Table 25 shows the T-test results for each group. The pre-post change is statistically significant for each of the three scales, for both groups.

**Table 25:
Home Visit and Play and Learn Pre-Post Differences: T-test**

Home Visit								
	BEFORE Mean	AFTER Mean	DIFFERENCE Mean	Std. Dev.	Std. Error Mean	t	df	Sig. (2-tailed)
Understanding of Principles of Early Childhood Development	17.10	28.97	-11.86885	6.91731	.88567	-13.401	60	.000
Value of Reading to Children Daily	16.66	28.15	-11.49180	6.65238	.85175	-13.492	60	.000
Knowledge of Community Resources	14.55	23.89	-9.34016	5.58869	.71556	-13.053	60	.000
Play and Learn								
	BEFORE Mean	AFTER Mean	DIFFERENCE Mean	Std. Dev.	Std. Error Mean	t	df	Sig. (2-tailed)
Understanding of Principles of Early Childhood Development	25.54	28.04	-2.50297	3.12699	.31115	-8.044	100	.000
Value of Reading to Children Daily	24.91	27.14	-2.23366	3.36298	.33463	-6.675	100	.000
Knowledge of Community Resources	19.67	22.83	-3.16089	3.78576	.37670	-8.391	100	.000

Exploratory Question #3

Is there a significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the PAT home visits?

The pre-post HOME subscale scores were analyzed for the six to eight sub-scales in the two age-versions of the HOME assessment. The HOME is comprised of two versions: Infant Toddler and Early Childhood. Results reveal that there was statistically significant improvement on all six Infant Toddler subscales, and on five of the eight Early Childhood subscales. Overall, for the statistically significant subscales, 93% of the home visitation children had improvement on one or more of these subscales.

For the Infant Toddler HOME, pre-post matches on 33 participants reveal statistically significant change for each of the six scales: responsiveness, acceptance, organization, learning materials, involvement, and variety (see Table 26). Table 27 shows that 61% to 88% of children improved on each scale.

**Table 26:
Infant Toddler HOME Results: T-Test**

Scale (Possible score)	PRE Mean	POST Mean	DIFFER- ENCE in Mean	Std. Deviation	Std. Error Mean	t	df	p<
Responsivity (11)	7.6667	10.0303	-2.36364	1.61667	.28143	-8.399	32	.000
Acceptance (8)	5.3636	6.2121	-.84848	.66714	.11613	-7.306	32	.000
Organization (6)	4.1212	5.0909	-.96970	.88335	.15377	-6.306	32	.000
Learning Materials (9)	4.9697	8.3636	-3.39394	2.44872	.42627	-7.962	32	.000
Involvement (6)	3.7273	5.697	-1.96970	1.26206	.21970	-8.966	32	.000
Variety (5)	2.6667	4.1212	-1.45455	.86930	.15133	-9.612	32	.000

**Table 27:
Infant Toddler HOME Results: % Improved by Scale**

	Improved (N=33)	
	#	%
Responsivity	28	85%
Acceptance	23	70%
Organization	20	61%
Learning Materials	28	85%
Involvement	28	85%
Variety	29	88%

For the Early Childhood HOME, pre-post matches reveal statistically significant change for five of the eight scales: learning materials, responsivity, academic stimulation, modeling, and variety (See Table 28). Table 29 shows that 38% to 67% of children improved on each of those five scales. For the non-significant scales (language stimulation, physical environment, and acceptance), between 10% and 33% of children improved.

**Table 28:
Early Childhood HOME Results: T-Test**

Scale (Possible score)	PRE Mean	POST Mean	DIFFER- ENCE in Mean	Std. Deviation	Std. Error Mean	t	df	p<
Learning Materials (11)	6.6667	8.8571	-2.19048	2.61952	.57163	-3.832	20	.001
Language Stimulation (7)	5.8571	6.3333	-.47619	1.12335	.24513	-1.943	20	.066
Physical Environment (7)	6.3333	6.5714	-.23810	.62488	.13636	-1.746	20	.096
Responsivity (7)	5.5714	6.5238	-.95238	1.32198	.28848	-3.301	20	.004
Academic Stimulation (5)	3.8095	4.6190	-.80952	1.32737	.28966	-2.795	20	.011
Modeling (5)	3.8571	4.5238	-.66667	.73030	.15936	-4.183	20	.000
Variety (9)	5.4762	6.7143	-1.23810	1.09109	.23810	-5.200	20	.000
Acceptance (4)	3.3333	3.5238	-.19048	.92839	.20259	-.940	20	.358

Table 29:
Early Childhood HOME Results: % improved by scale

	Improved	
	#	%
Learning Materials	12	57%
Language Stimulation	7	33%*
Physical Environment	3	14%*
Responsivity	11	52%
Academic Stimulation	8	38%
Modeling	11	52%
Variety	14	67%
Acceptance	2	10%*

* These items did not reach statistical significance.

Stories of Early Intervention Success with Children having Social, Emotional or Behavior Problems

Story #1: Macomb Family Services' Social Emotional Consultant worked with a 4-year-old child in a classroom in which the teacher suspected the child of having autism. The agency completed an assessment and developed a goal plan to help the child with self-regulation. Preparing a calming space for the child and having visual cards to help him to express feelings were included in the goal plan. In addition to this, strategies were prepared for working with the rest of the class so children could learn to respect and interact with this special needs child while at the same time learning to respond if he became aggressive. This was used as an opportunity to work with diversity and being inclusive of others. The child's teacher received support in facilitating a meeting with the child's mother. At this meeting, the mother and grandmother were informed about the results of the socio-emotional assessment as well as the autism screening. The Social Emotional Consultant listened to the family's concerns about the child and shared strategies towards helping him to succeed. The family received the contact information for the Macomb County Community Mental Health Access Center and the school district to pursue further evaluation. The child's family expressed their appreciation for being listened to and supported at this meeting. They said they were hopeful about being able to help their child since according to his grandmother, nobody before helped them and nobody knew where to refer them.

Story #2: A Social Emotional Consultant was asked to assess a two year old who had already been identified as qualifying for speech services. However, the school district said he was too dangerous to attend a classroom setting due to his aggression. It was reported that the child frequently hit, pinched, screamed, and spit, including hitting his parents. His parents said they were afraid to take the child places, including the necessary trip to the grocery store, because they were unable to control him during his frequent tantrums. They also expressed frustration that he slept in their bed nightly, and they were unable to put him to bed at an appropriate time without his screaming, kicking, and hitting. The Social Emotional Consultant explored the child's frustration over not being able to verbalize his needs, how the parent's acquiescence to his behaviors continued the cycle of behavior, and healthy child development. Through supporting the parents in setting healthy expectations and using positive discipline, the family has seen a significant improvement in behavior and reached their goals. The child, now three, sleeps in his own bed nightly and goes to bed easily, he is potty trained, hitting and tantrums have decreased from several times a day to once every few months, and the family is able to enjoy time together. He started with a minimum amount of time in the classroom and then progressed to a full (3 hour) day and even rode the school bus.

Story #3: The Social Emotional Consultant worked in one class that did not show the improvement expected on the DECA. In fact some DECA scores were worse in the post assessment. Three of the children in this classroom were identified as having challenges that needed more intensive intervention, including sensory processing disorder, trauma, and developmental delays. These challenges were the cause of the behavior difficulties. The Social Emotional Consultant was able to identify these children and connect them with further evaluation and then treatment. Getting diagnosed and getting on track for needed supports and treatment was a big success for these children. However, it did not reflect improvement on the DECA because they were beginning treatment at the time services ended.

Exploratory Question #4

Sufficient data were available this year to examine the results from the exploratory question:

Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on behavioral concerns?

DECA results to date show a resounding “yes” answer. Analysis of the pre-post differences across the four factors (initiative, self-control, attachment and behavioral concerns) revealed that 84% of the children either improved on at least one protective factor or decreased on behavioral concerns (shown in Figure 7).

Closer examination of the pre-post changes on DECA was made by computing the paired t-tests on the standardized scores (T-scores) for the four factors. Table 30 shows the results.

Figure 7:
% of children who met the mental health services goal

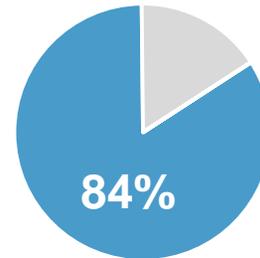


Table 30:
DECA Results

DECA FACTOR	N	Pre-Test Mean	Post-Test Mean	Direction of Change	Pre-Test SD	Post-Test SD	Paired T	p≤ (2-tailed)
Initiative	80	53.91	55.15	Improved	11.315	12.247	1.133	.261
Self-Control	80	54.61	55.64	Improved	11.041	11.260	1.232	.222
Attachment	80	55.64	58.06	Improved	11.260	11.310	2.566	.012
Behavioral Concerns	79	48.23	47.52	Improved ²¹	8.904	9.333	1.003	.319

These results reveal that there was slight improvement on all four factors, with one factor (attachment) showing a significant improvement for this group of families. Attachment items on DECA are the child’s ability to:

- Show affection for familiar adults
- Seem happy or excited to see his/her parent or guardian
- Ask adults to play with or read to him/her
- Act in a way that makes adults smile or show interest in him/her
- Look forward to activities at home or school
- Trust familiar adults and believe what they say
- Appear happy when playing with others
- Show a preference for a certain adult
- Seek help from children/adults when necessary

²¹ A high score on behavioral concerns indicated higher need; so the decrease in mean scores is an improvement, meaning fewer behavioral concerns.

For each of the four factors, between 43% to 53% of children improved on the factor. For 21% of the children, all four factors improved.

Other Lessons Learned

Ongoing discussions with program management and on-the-ground staff occurred regularly as part of the evaluation. Through these discussions, other evidence was found related to the expected outcomes of PAT home visits and Play and Learn Groups. Evidence was also found of unexpected outcomes occurring within the participating agencies and at the early childhood education systems level.

Other Evidence of Expected Outcomes

As noted first in the year two evaluation report, front line staff see evidence of parents accessing community resources through interactions with each other during the Play and Learn Groups. Staff noted that during the group meetings, parents seem to be making friends, they do activities together, and share experiences with each other about referrals they received. One parent created a Facebook page to help parents support each other. Parents were also seen encouraging each other to follow through with referrals they were given to community resources.

As noted in the stories on page 45, the Social-Emotional (SE) Consultants see evidence of their work helping both teachers and the children in the classroom. Poor self-regulation and adaptive behaviors are exacerbated by teachers that are often overwhelmed and have little time for planning outside of classroom hours. Teachers often have many children in the room making it difficult to explore deeper reasons for challenging behavior when it occurs. The high demands on teachers to create structured environments in their classroom may hinder their ability to meet the various needs of children. The Social Emotional Consultants have helped by identifying and connecting children for further evaluation and treatment (that have resulted in improvements in the classroom) as well as by coaching teachers on how to best work with the needs of individual children.

Evidence of Other Outcomes

Discussions with front line staff and management, as well as evaluator observations, revealed that participation in SIF and, in particular this evaluation, resulted in outcomes at the agency level.

Agency-level impact of participating in this evaluation is evidenced by the following:

- SIF evaluation tools and the database are being used to monitor progress beyond the SIF program and used to support other funding efforts. The development of the data collection structures and positive attitudes toward them means that the evaluations within the agencies are likely to be sustained beyond the life of the SIF grant.
- Participating in the evaluation is causing agencies to look closer at quality when making program decisions. PAT staff reported appreciating the ability to see evaluation findings and appreciating being asked for their opinions of what the findings mean. This has resulted in the evaluation data having an impact on their own, individual, work.
- Participation in the evaluation resulted in uncovering an article on gatekeeper value in recruitment which lead to a redesign of recruitment strategies for PAT home visits, as described above.

There is also evidence that the programs originally started with SIF funding are expanding their reach, such as the following:

- Home visits expanded into the non-SIF community of Hamtramck, Michigan.
 - One agency is expanding its reach into other early childhood programs. In Hamtramck's Arabic community, an elementary school now reserves a parent resource room, providing a continuum of services like access to group and Home Visit workshops. Increased enrollment in these SIF services required the school to open up another Kindergarten classroom for the program.
 - In Detroit's African American community, a community center now dedicates a parent resource room, provides monthly parenting workshops, and now hosts Early Childhood Mondays.
 - In other communities in Southwest Detroit, parents had access via a six-week Parent Workshop to support and education about their children's social emotional development needs. This workshop was a new collaboration with the Guidance Center, Grace in Action and All Saints Church.
- *Ready Children, Ready Communities* persistently worked to reach underserved communities even when doors were initially closed to untrusted outsiders. In Hamtramck's Arabic community, the PAT home visit staff successfully engaged the community after trial and error showed that traditional recruiting methods of flyers and events didn't work.
- The collaborative efforts jump started through SIF resulted in faster recruitment opportunities within schools. Having MISD as the lead agency has enabled recruitment meetings to occur with social workers within Macomb County schools, has enabled sharing of funding, and a bird's eye view of how the program benefits the District as a whole.
- There has been a growth of the Kindergarten camps originally started through SIF. It grew from 7 classrooms in the SIF area to 10 SIF classrooms. Overall, throughout the county there are now 25 classrooms.
- Socio-emotional mental health services have expanded through the State School Aid Act, Section 32p block grant.
- A PAT program regional affiliate was created in July 2015. The affiliate includes the three SIF agencies as well as other Michigan agencies. One benefit has been the use of PAT resources for a much more reasonable fee than if the agencies had to purchase membership individually.
- One *Ready Children Ready Communities* agency began facilitating parent workshops to increase parental education experiences beyond what happens within Play and Learn groups and home visits. Workshop sessions include topics such as play materials and everyday home items, word play and kitchen art fun.
- One *Ready Children Ready Communities* agency expanded its outreach to private schools in the Spanish community and provided more Spanish services. One of the staff made connections within the community and was able to advertise agency services on a Spanish-speaking radio show.

As noted earlier, there were 37 classes of about 16 children each who participated in the four-week Kindergarten literacy camps. Results from a separate evaluation of the camp children reveal that on the five scales measured, children increased 16 to 28 percentage points in each area. The scales were on items relating to letter sound knowledge, phonological awareness, print awareness, and oral language. See Appendix B for further information.

V. Study Logistics Updates

A. Protection of Human Subjects

Survey administration followed IRB-approved human subject protection procedures. The IRB approval was through Argus Independent Review Board (website: www.argusirb.com).

In order to protect participant confidentiality and simultaneously distribute the right survey to the right parent, each RPT Play and Learn Group survey is labeled with a unique identification number (without parent name), and is placed inside an envelope with a label that has the matching ID and “Parent/Guardian of (CHILD’S NAME INSERTED).” Only parents eligible to receive the parent survey are included (i.e., they had attended at least four Play and Learn Groups and they consented to participate in the evaluation on the Intake form). This procedure retains the original intent of not giving the evaluator access to identifying information about the parents or their children while simultaneously assures that data are not collected from parents who are not eligible to be surveyed.

Staff read a script (described above) that provides instructions for parents completing the RPT survey. Each copy of the survey is attached to a blank envelope. Staff have a large envelope for collecting the consent forms and completed surveys. The script and written instructions tell parents that their answers are confidential, and instruct them to tear off the consent form after signing it and place it in the large envelope that the staff have. Parents are instructed to place the completed survey into the small blank envelope and seal the envelope before giving it to the staff. The sealed envelopes are provided to the data entry company who enters all survey data with 100% blind key verification, and creates the program databases.

A parallel script is used by PAT home visit staff to administer the RPT survey to program participants. The same RPT data collection procedures are used for the home visit parents as are described above for the RPT parent surveys. Parents are not asked to complete another RPT parent survey if they remain in the PAT home visit program another year.

B. Budget and Timeline

There are no budget or timeline update items for the evaluation. Data collection will continue, and a full analysis will be included in the next annual evaluation report.

C. Evaluation and Program Staff Involvement

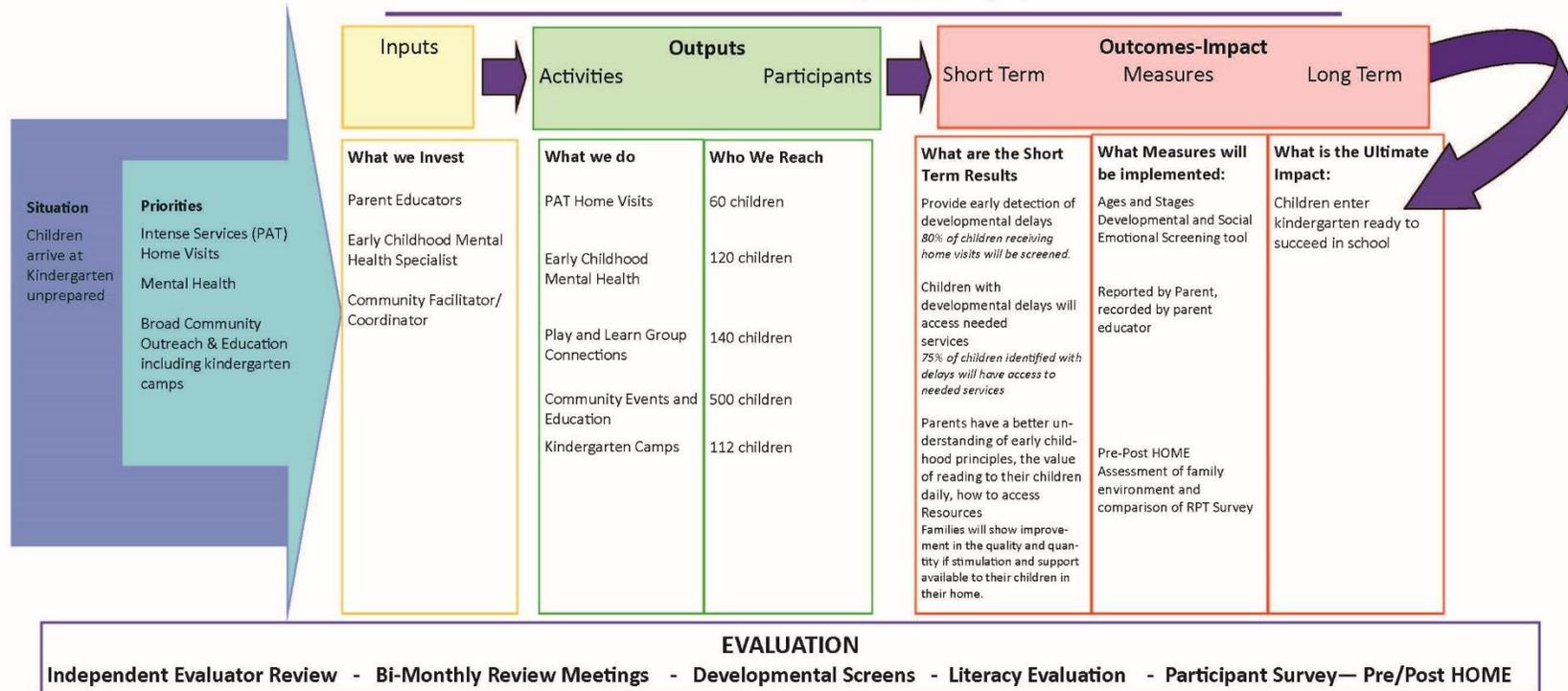
There are no updates regarding evaluation and program staff involvement.

Appendices

Appendix A: Logic Model

Appendix B: 2015 Kinder Connect Camps Evaluation Results

**Appendix A: Ready Schools—Ready Communities
Program Action—Logic Model**



Program Description:

Kinder Connect
Kinder Connect – camp for students entering Kindergarten. The goal of the camp is to transition prekindergarten students seamlessly into Kindergarten. Children received engaging instructional strategies focusing on letter/sound knowledge, print concepts, phonological awareness, narrative skills, and language development.

Children were given the opportunity to practice literacy skills including rhyming, handling a book (concepts of print), identifying upper and lowercase letters, naming sounds, writing first and last name, understanding position words, and speaking in complete sentences. Children also received daily support with gross and fine motor development.

Kinder Connect camps take place over the summer. Transportation, breakfast, and lunch was provided for all children participating in the camps.

Participation and Attendance

In the summer of 2015, there were approximately 140 children who participated in Kinder Connect camps from SIF districts. Overall, the attendance rate in 2015 was 82%. In 2016, the same number of students participated in the camps from SIF districts.

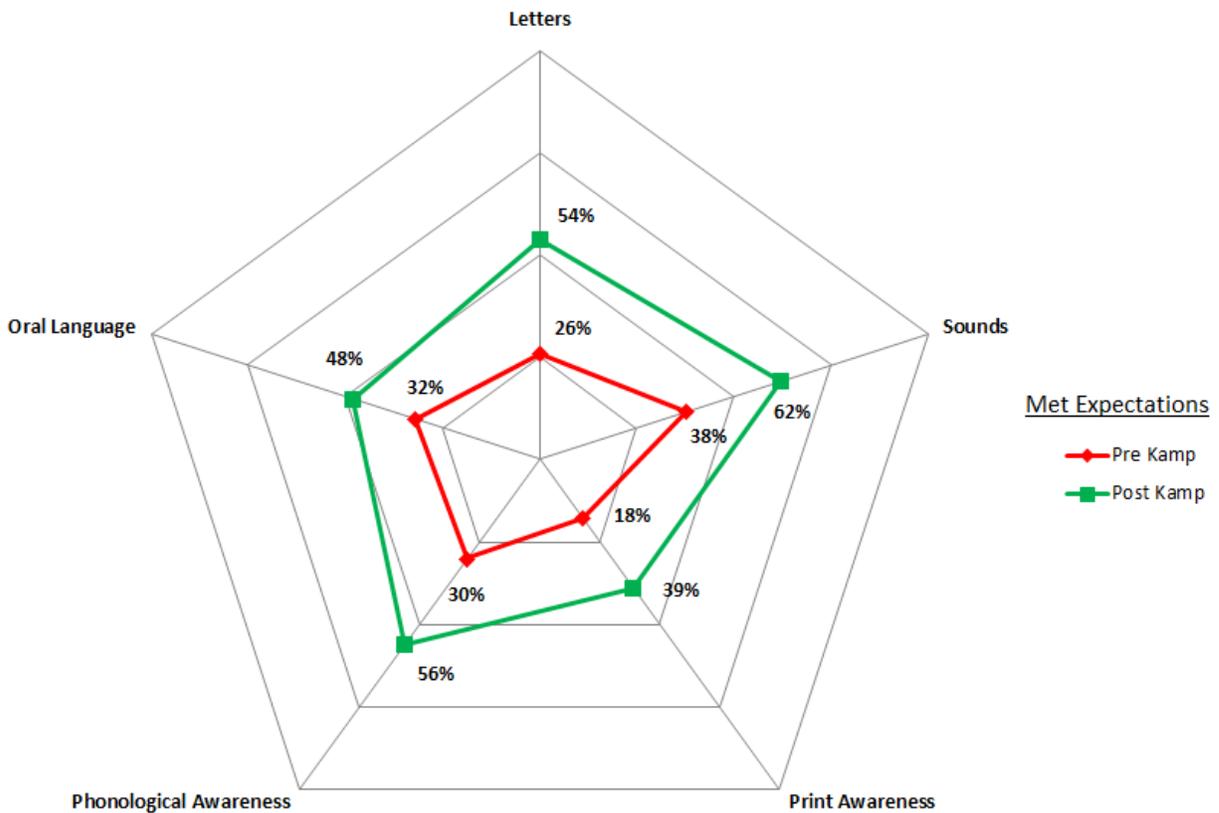
Evaluation Methods and Results

Students participating in Kinder Connect 2015 were evaluated by the teaching staff with an initial assessment prior to camp or during the first week of camp. A final evaluation was then administered during the last week of camp. The assessment used by the teaching staff was the Michigan Literacy Progress Profile (MLPP). The MLPP is a diagnostic tool for teachers to document and explain what they

know about a child's literacy learning and performance levels. The assessments go beyond a universal screener to provide a context of what student's literacy strengths and weaknesses are. The assessments allow teachers to document student growth in the areas of literacy development for the purpose of improving and planning appropriate learning opportunities for all students. The MLPP "digging deeper" assessments used by the teaching staff included letter sound knowledge, phonological awareness, print awareness, and oral language.

The chart below shows the 2015 results for Macomb County's Kinder Connect Camps. On the five scales, children started with scores in the range of 18-38%. By post camp, scores increased 16 to 28 percentage points in each of the five areas. The largest increase, from a 26% pre-score to a 54% post score, was in the area of letters.

Macomb County - KinderConnect Camps 2015: East Detroit, Fitzgerald, Van Dyke



MISD - jde - 11/3/2015