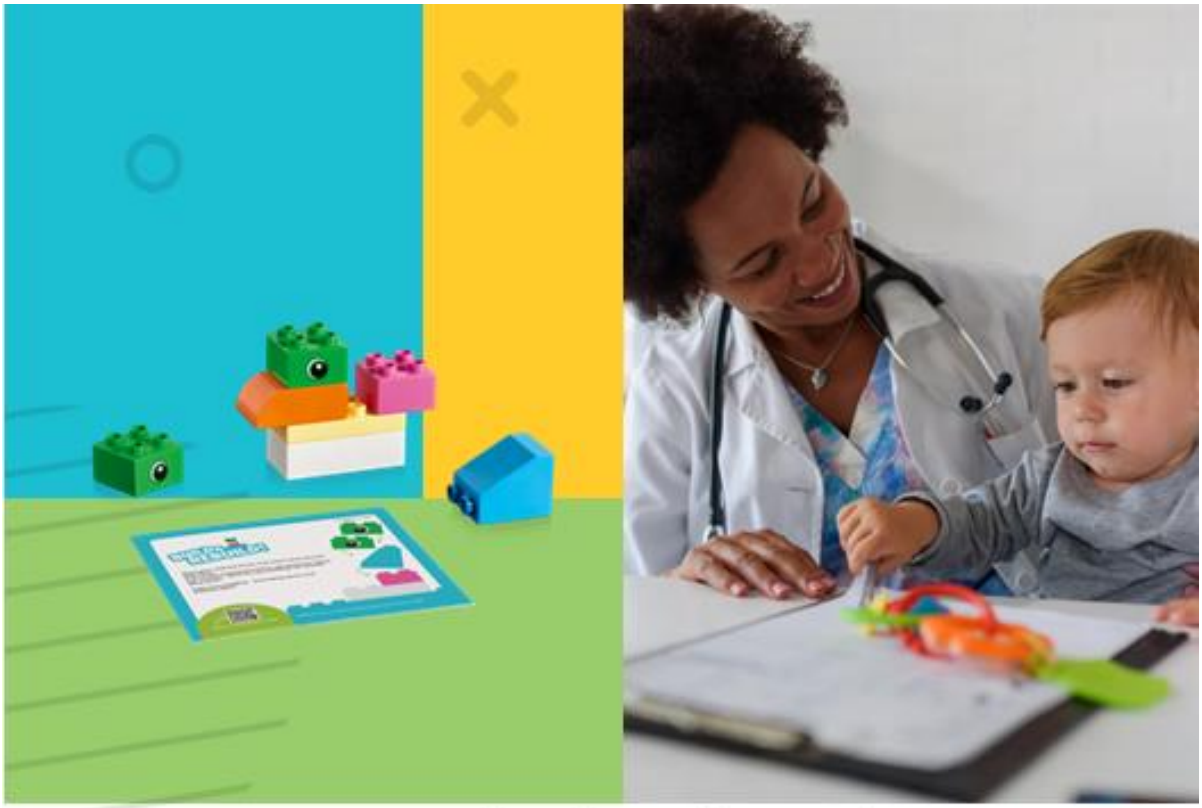

Prescription for Play Research Report:

A multi-site case study of the process and outcome measures of Prescription for Play

Weitzman Institute

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Introduction

The earliest years of a person's life are some of the most influential for later development. Central to these early years is the ability for a child to engage in play. Through play, children foster and develop skills, such as language, self-regulation abilities, and social competencies.[1,2,3] Given the benefits of play in early childhood, the American Academy of Pediatrics (AAP) recommends that pediatricians educate caregivers on the importance of play and encourage them to engage in play with their children, particularly during the first several years of life.[1]

Prescription for Play (P4P) is a social impact program of The LEGO® Group, designed for healthcare providers seeing 18-to-36-month-old patients for well-child checks (WCCs). The program offers free LEGO® DUPLO® bricks for primary care provider teams to distribute to these patients and their caregivers. The play kit provides young children with fun experiences that support learning and development, including shapes and colors, fine motor skills, numbers and counting, imagination and creativity, and language development.[4] Healthcare providers use the bricks and related educational materials as prompts to engage caregivers on the benefits of play for development of emotional, cognitive, creative, social, and physical skills.

Importantly, not all children have equal access to or opportunities for play, with children from lower income families being especially likely to face barriers to play. For example, due to social, emotional, and economic stressors, caregivers with lower incomes may have less time, resources, and energy to play with their children.[5] These obstacles can subsequently impede the development of skills known to be fostered by play.[1,2,3] To promote play in under-resourced families, The LEGO® Group partnered with the Weitzman Institute to bring P4P to primary care practices across the United States, with a particular focus on Federally Qualified Health Centers (FQHCs). FQHCs were seen as particularly important health care settings to target given that they serve medically underserved areas and populations by providing primary care and other health services to patients regardless of their ability to pay. The partnership between The LEGO® Group and the Weitzman Institute has since grown to encompass scaling the P4P program for implementation and conducting research on the process and outcomes of the program regarding the importance of play in early childhood.

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[1] Yogman, Michael, et al. "The Power of Play: A Pediatric Role in Enhancing Development in Young Children." Pediatrics (Evanston), vol. 142, no. 3, 2018, pp. 1.

[2] Barnett, La. "Developmental Benefits of Play for Children." Journal of Leisure Research, vol. 22, no. 2, 1990, pp. 138-153.

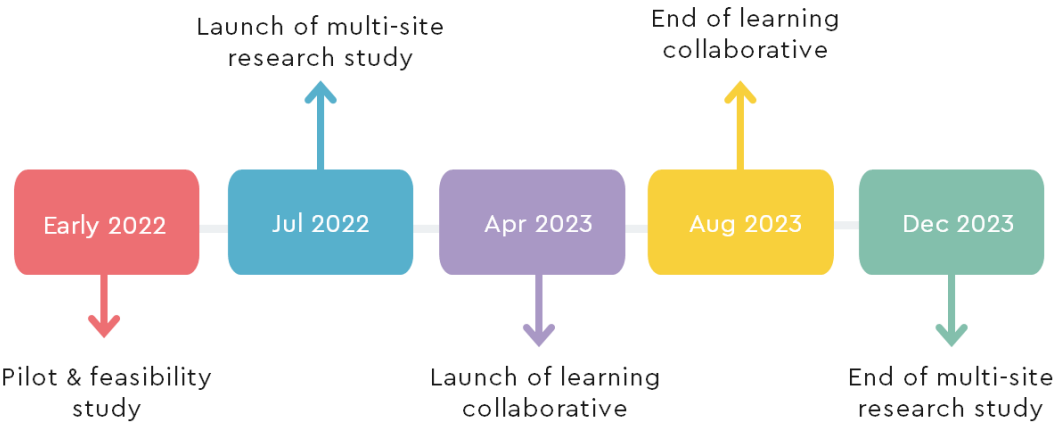
[3] Ginsburg KR, Shifrin DL, Broughton DD, Dreyer BP, Milteer RM, Mulligan DA, et al. The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. Pediatrics. 2007; 119: 182–191. https://doi.org/10.1542/peds.2006-2697 PMID: 17200287

[4] The LEGO Group. Prescription for Play. https://www.lego.com/en-us/campaigns/prescription-for-play. Accessed June 10, 2021.

[5] Milteer RM, Ginsburg KR; Council on Communications and Media; Committee on Psychosocial Aspects of Child and Family Health. The importance of play in promoting healthy child development and maintaining strong parent-child bond: focus on children in poverty. Pediatrics. 2012;129(1):e204e213.

As depicted in the figure below, the initial research phase of this partnership was conducted in 2022 and included a pilot study to evaluate the feasibility of delivering the P4P program during 18-to-36-month WCCs; this pilot study was tested at Community Health Center, Inc., a FQHC based in Connecticut and an affiliate of the Weitzman Institute. Results from this pilot study showed that the P4P program was acceptable to both providers and caregivers and feasible to implement in a FQHC setting, though several barriers were identified, including a need for additional provider training and more structured recommendations on how best to integrate the P4P program into clinic workflows.[6] To further identify program gaps and develop stronger program guidance, a learning collaborative comprised of FQHCs implementing P4P across the country, which was designed using a prior collaborative model,[7] was launched in 2023, the results of which are reported elsewhere. In addition, a larger, multi-site research study was initiated to evaluate the feasibility of implementing the P4P program on a larger scale while also gathering evidence on the impact of P4P on caregiver attitudes, beliefs, and behaviors towards play. The results of this multi-site research study are described herein.

Figure 1. Timeline of P4P



Research Questions

This research had two primary aims: (1) to explore how exposure to the P4P program influences caregiver attitudes and behaviors towards play and (2) to assess implementation fidelity and acceptability of the P4P program among providers and clinic staff. To evaluate these aims, the Weitzman team asked three main research questions:

1. Do caregiver attitudes, behaviors, and perceptions towards play change after participation in the P4P program?

[6] Panjwani S, Anderson-Badbade S, Oo M, Velez I, Beckham J. Play Promotion for Pediatric Patients: A Feasibility and Pilot Study of Embedding 'Prescription for Play' in Well-Child Visits, Phase 1 Evaluation Report. Weitzman Institute, Community Health Center, Inc.; 2022.

[7] The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. (Available on IHI.org)

2. Can the P4P program be implemented as designed across multiple sites, and what helps or hinders implementation?
3. How do providers and clinic staff view the P4P program and does participation in the program change their views on the importance of discussing play during WCCs?

Methods

Research settings

To assess the implementation fidelity of the P4P program, a multi-site research study at FQHCs across the United States was conducted. To be eligible for participation in this research, clinics were required to:

1. Average approximately 83 WCCs for 18-36-month-old patients per month;
2. Have approximately 40% of patient households list Spanish as the preferred language;
3. Demonstrate IT/Electronic Health Record (EHR) staff and a Business Intelligence (BI) team for data processing and transfers; and
4. Have a registered IRB or ability to seek IRB approval with a commercial IRB and proof of Federalwide Assurance (FWA).

In total, 6 FQHCs were recruited for participation. As shown in Table 1, the participating FQHCs were located in different regions of the United States and largely served patients identifying as racial and ethnic minorities.

Table 1. Clinic Demographics

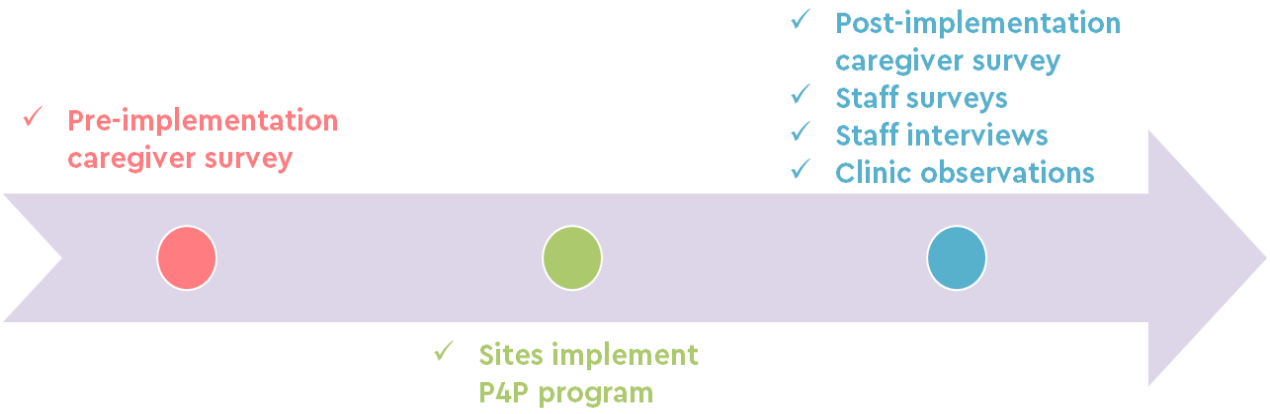
Name	Location	% of population identifying as racial/ethnic minorities	Average monthly number of 18-36-month WCCs
Community Health Center, Inc.	New Britain, CT	78%	50
Eskenazi Health Center	Indianapolis, IN	84%	100
Angeles Community Health Center	Los Angeles, CA	96%	80
Collier Health/Healthcare Network	Immokalee, FL	84%	200
Piedmont Health	Chapel Hill, NC	41-60%	105
NYU Langone	New York, NY	78%	300

Procedures

Because this study was partly focused on understanding whether the P4P program impacted caregiver views on and behaviors towards play, an interrupted time series design was used. Prior to implementing P4P, caregivers were recruited from each site during 18-36-month WCCs to complete a phone survey asking them about their attitudes, behaviors, and perceptions towards play along with basic demographic information. All caregivers were required to (1) be at least 18 years old, (2) be the responsible party for the pediatric patient, and (3) have phone access to complete the survey. Once a minimum number of pre-implementation surveys were completed by caregivers, sites were approved to begin implementing the P4P program. Using the same eligibility criteria, an additional sample of caregivers who received the P4P program during 18-36-month WCCs were recruited to complete an identical phone survey. The sample of caregivers who did *not* receive the P4P program served as a baseline comparison to those who did. Phone surveys occurred within several weeks of completing the WCCs, and caregivers were given a $30 Amazon gift card for compensation. We aimed to recruit 50 caregivers for each survey per site, with a goal of 250 total surveys for both the pre- and post-implementation timeframe.

In addition to collecting caregiver survey data, a mixed methods approach was undertaken to better evaluate program implementation. After each site began implementing the P4P program, providers were evaluated through surveys and qualitative interviews administered by the Weitzman team to gather their insights on the acceptability of the program and the feasibility of its implementation. In addition, observations were performed by members of the Weitzman team at each clinic site to observe P4P delivery during WCCs to assess program fidelity. At least one day before each observation, providers and other appropriate care team members were notified that a member of the research team would be present to observe WCCs the following day. Once at the clinic, the research team member sought permission from care team members and caregivers to observe WCCs. All data for this study were collected between July 2022 and December 2023. Study procedures are outlined in Figure 2.

Figure 2. Study procedures



Outcome Measures

Caregiver Surveys

To understand the attitudes and behavioral intentions caregivers hold towards play with their children, 13 survey items were developed using the Theory of Planned Behavior (TPB)[8], a psychological theory that links an individual's beliefs to their behavior. Three separate constructs were assessed to understand the behavioral intentions of caregivers to play with their children before and after participating in the P4P program, including (1) attitudes, (2) subjective norms, and (3) perceived behavioral control. Each item was rated on a scale of 1 to 4, with 4 indicating more favorable views of play. The overall construct scores were calculated by averaging the items comprising it. The items for these measures are further detailed in Table 4, and the full caregiver survey is included in Appendix A.

Program Evaluation Measures

Measures for the program evaluation were designed according to a previous conceptual framework for implementation fidelity[9,10] and included both quantitative (surveys) and qualitative (interviews and observations) data collection among staff implementing the P4P program.

Staff Surveys

The staff survey consisted of a series of questions assessing staffs' previous knowledge of play as well as their views of the P4P program (e.g., "*I think the Prescription for Play program is valuable to my organization*") along with several items assessing fidelity to the program (e.g., "*I open the blocks and model play with patients at will-child visits*"). Providers and clinic staff implementing P4P at all participating sites were invited to complete the survey via email. The full provider survey is included in Appendix B.

Staff Interviews

Staff interviews consisted of questions to understand their experience with the program and its implementation, motivation to implement the program, and views on the effect of the program on patient visits (e.g., "*What are the key points you try to discuss with caregivers when distributing the kits?*"). Providers and clinic staff implementing P4P at all participating sites were invited to participate in these semi-structured interviews held either in-person or virtually by members of the research team. The complete interview guide is included in Appendix C.

Clinic Observations

An observation protocol was developed for research team members to passively observe the clinic setting (e.g., patient waiting area, check-out processes, and the newly

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[8] Ajzen I. The theory of planned behavior. Organizational behavior and human decision processes. 1991 Dec 1;50(2):179-211.

[9] Carroll C, Patterson M, Wood S, Booth A, Rick J, Balain S. A conceptual framework for implementation fidelity. *Implementation Science*. 2007;2(1):40. doi: 10.1186/1748-5908-2-40.

[10] Hasson H. Systematic evaluation of implementation fidelity of complex interventions in health and social care. *Implementation science : IS*. 2010;5(1):67. doi: 10.1186/1748-5908-5-67.

established clinical workflow for P4P) as well as visit procedures (e.g., the kit distribution process and patient interactions with the kit). The complete observation protocol is included in Appendix D.

Analysis

To evaluate the caregiver surveys, demographic data for both the pre- and post-implementation respondents were first summarized and compared using Fisher's exact tests. Each individual TPB item and their larger constructs were similarly described and compared between the pre- and post-implementation surveys using independent samples t-tests.

To assess the implementation outcomes of the P4P program, data from qualitative interviews were first transcribed and observation texts compiled. Both of these qualitative sources were then reviewed by the research team for initial impressions and were later assigned codes to identify major themes. Items from the staff survey were descriptively summarized. Triangulation across these three data sources was completed to better understand contextual factors and moderators affecting program implementation.

Results: Sample Sizes

An overview of the total sample size for each measure is reported in Table 2. Due to unforeseen delays in data collection, sites began implementing the P4P program earlier than anticipated to ensure timely completion of all post-implementation procedures, which resulted in a smaller number of pre-implementation surveys than intended. Across all 6 sites, 27 providers and clinic staff completed the staff survey and 25 also completed the staff interview. In addition, 44 clinic observations were conducted.

Table 2. Sample sizes

Measure	Sample Size
Caregiver Pre-Implementation Survey	180
Caregiver Post-Implementation Survey	217
Staff Survey	27
Staff Interview	25
Clinic Observations	44

Results: Multi-Site Caregiver Survey

Caregiver Demographics

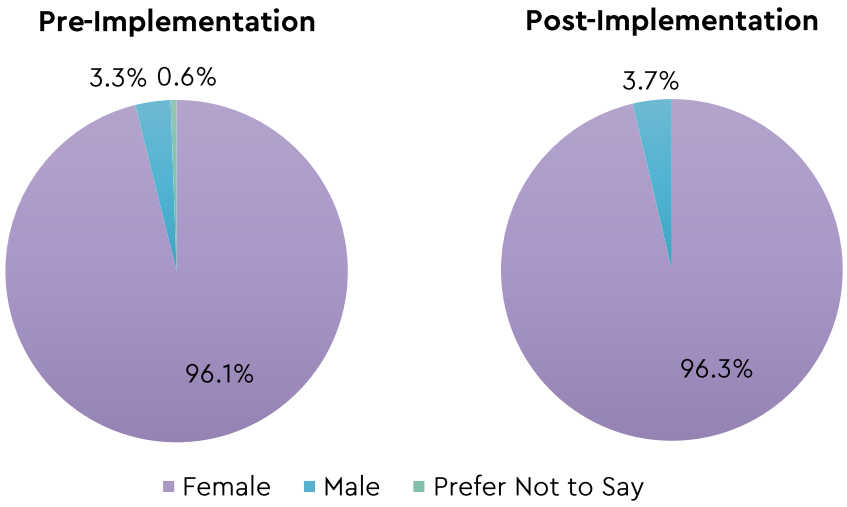
Caregivers who completed the pre-implementation survey were similar to those who completed the post-implementation survey on all demographic factors (ps > .05). As shown in Table 3, over half of caregivers in both samples were between the ages of 25 to 34 years old, and the vast majority (98%) were parents of the pediatric patient. About one-third of caregivers from both samples were part of a single-parent household.

Table 3. Pre- and Post-Implementation Caregiver Demographics

	Pre-Implementation n (%)	**Post-Implementation n (%)**
Caregiver Age		
18-24	23 (13%)	39 (18%)
25-34	92 (51%)	115 (53%)
35-44	56 (31%)	55 (25%)
45+	7 (4%)	5 (2%)
Prefer Not to Say	2 (1%)	3 (1%)
Caregiver Gender		
Female	173 (96%)	209 (96%)
Male	6 (3%)	8 (4%)
Prefer Not to Say	1 (1%)	0 (0%)
Caregiver Race/Ethnicity		
White	15 (8%)	4 (2%)
Black or African American	17 (9%)	20 (9%)
Hispanic or Latino (a)	145 (81%)	186 (86%)
Not Hispanic or Latino(a)	2 (1%)	5 (2%)
Prefer Not to Say	1 (1%)	2 (1%)
Caregiver Relationship to Child		
Parents	177 (98%)	212 (98%)
Grandparents	3 (2%)	3 (1%)
Extended Family Member	0 (0%)	1 (0.5%)
Non-related Caregiver	0 (0%)	1 (0.5%)
Single Parent Household		
Yes	52 (29%)	58 (27%)
No	126 (70%)	156 (72%)
Prefer Not to Say	2 (1%)	2 (1%)
Caregiver Language		
English	53 (29%)	72 (33%)
Spanish	122 (68%)	145 (67%)
Haitian Creole	5 (3%)	0 (0%)

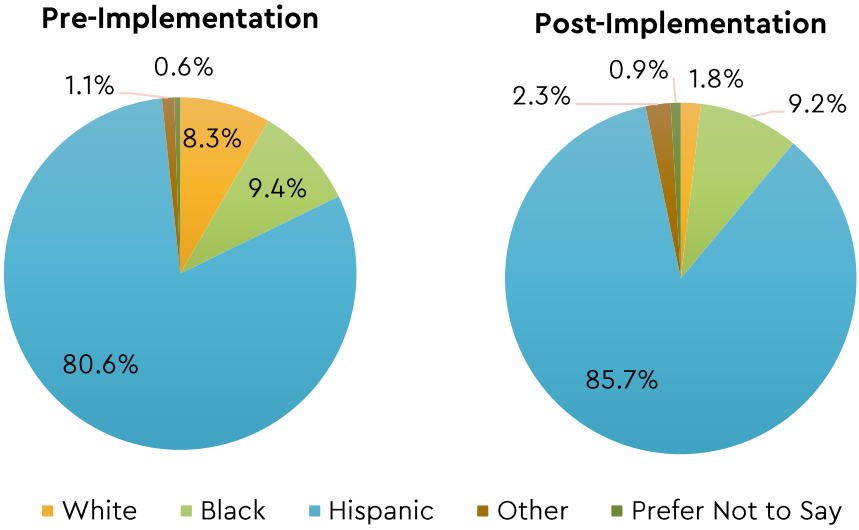
As further illustrated in Figure 3, **nearly all caregivers in both samples identified themselves as female.**

Figure 3. Caregiver Gender



Moreover, given that this study recruited from sites with large populations of patients reporting Spanish to be their preferred language, it was unsurprising that **two-thirds of caregivers were predominantly Spanish-speakers, with most caregivers identifying their race/ethnicity as Hispanic** as shown in Figure 4.

Figure 4. Caregiver Race/Ethnicity



Caregiver Surveys

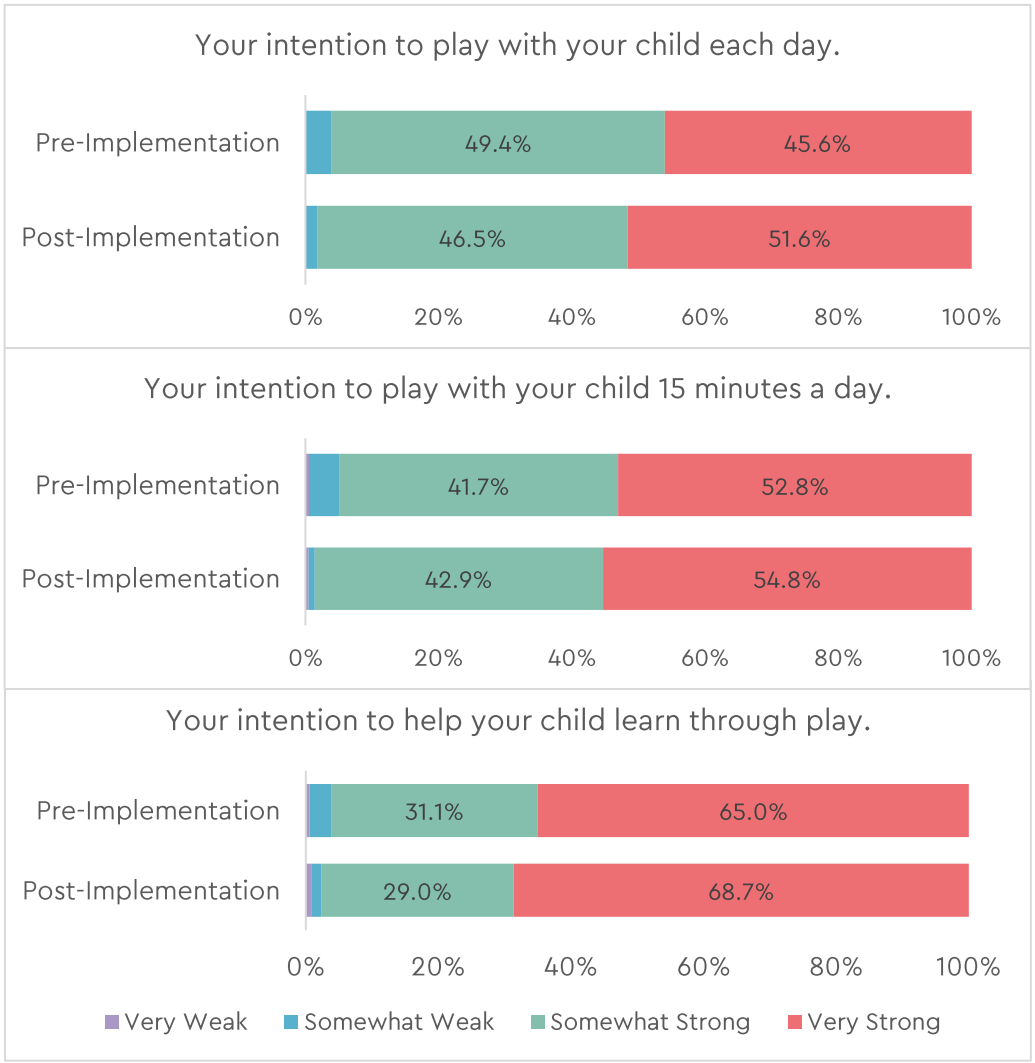
The vast majority of caregivers (70-99%) for both the pre- and post-implementation surveys either agreed or strongly agreed with each of the items detailed in Table 4, indicating strong positive views of and intentions to play with their children both before and after implementation of the P4P program.

Table 4. Pre- and Post-Implementation Caregiver Survey Items

	Pre-Implementation Mean (SD)	Post-Implementation Mean (SD)	p-value
Behavioral Intention			
Your intention to play with your child each day.	3.42 (.57)	3.50 (.54)	.172
Your intention to play with your child 15 minutes a day.	3.47 (.61)	3.53 (.55)	.309
Your intention to help your child learn through play.	3.61 (.58)	3.65 (.56)	.396
Attitudes			
Feeling enjoyable when thinking about helping your child learn through play.	3.60 (.51)	3.66 (.50)	.227
Feeling pleasant when thinking about helping your child learn through play.	3.67 (.51)	3.73 (.46)	.185
Your belief that helping your child learn through play is helpful.	3.59 (.59)	3.68 (.49)	.115
Your belief that helping your child learn through play is valuable.	3.65 (.49)	3.73 (.45)	.099
Subjective Norms			
Your perception that the most important people in your life think you should help your child learn through play.	3.26 (.72)	3.36 (.66)	.121
Your perception that the most important people in your life support you in helping your child learn through play.	3.37 (.58)	3.49 (.55)	**.045**
Your perception that the most important people in your life approve of you helping your child learn through play.	3.38 (.63)	3.50 (.55)	**.048**
Perceived Behavioral Control			
Your belief that helping your child learn through play is within your control.	3.37 (.61)	3.43 (.59)	.308
Your belief that helping your child learn through play is up to you.	3.34 (.66)	3.30 (.70)	.611
Your belief that helping your child learn through play is not prevented by others.	2.96 (.80)	3.02 (.81)	.511

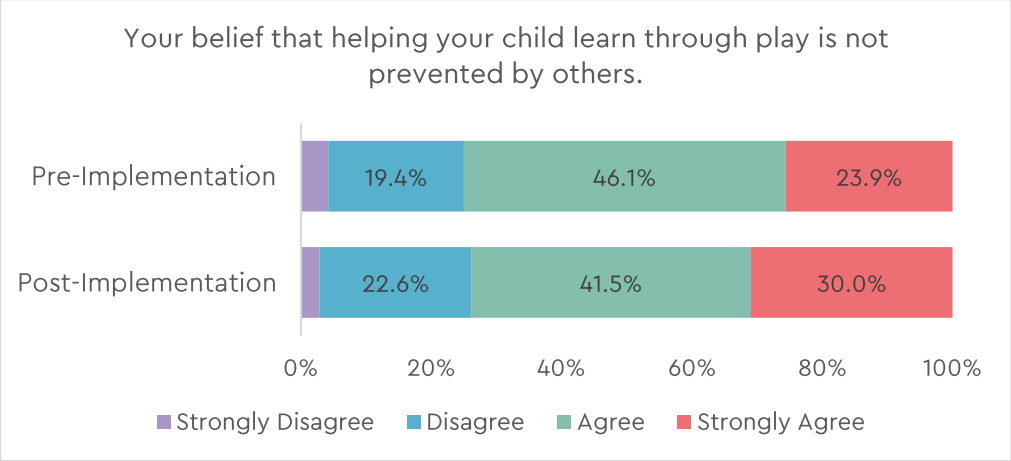
Caregivers consistently reported highest agreement on the items related to behavioral intentions and attitudes towards play on both the pre- and post-implementation surveys. For example, as shown in Figure 5, more than 95% of caregivers reported somewhat to very strong intentions to regularly play with their child both before and after implementation of P4P. Similarly, nearly two-thirds of caregivers in both samples reported strongly agreeing that they find play with their child to be enjoyable, pleasant, helpful, and valuable (see Appendix E).

Figure 5. Caregiver Behavioral Intention Related to Play



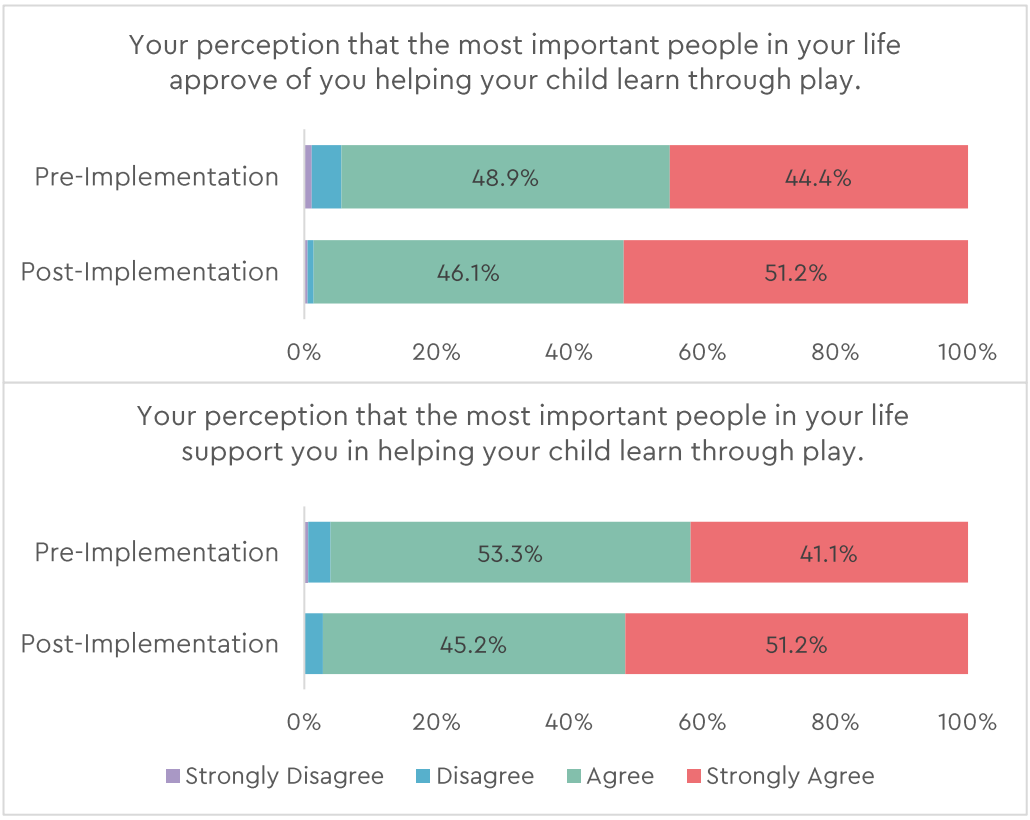
In contrast, with regard to perceived behavioral control, although most caregivers (>90%) agreed that playing with their child is within their control and up to them, more variability was observed when caregivers were asked whether play is *not* prevented by others. As shown in Figure 6, **over 25% of caregivers** in both samples disagreed or strongly disagreed with this statement, indicating that they **perceived others as a barrier to play with their children.**

Figure 6. Caregiver Perceived Behavior Control Related to Play



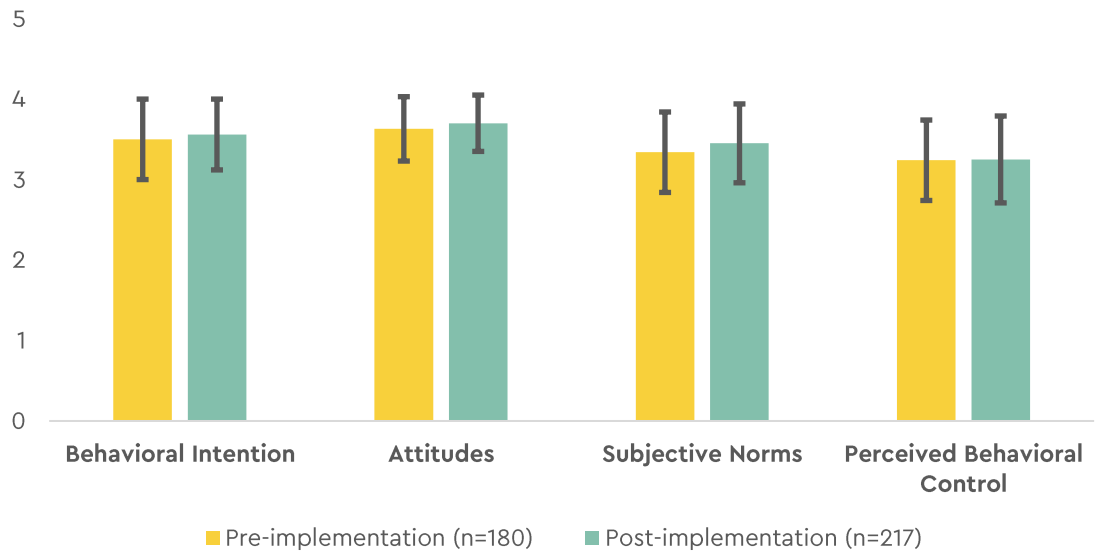
Given the high level of agreement across the items belonging to behavioral intentions, attitudes, and perceived behavioral control, no differences were found between pre- and post-implementation respondents. Meanwhile, small differences were identified in two items related to subjective norms between the pre- and post-implementation respondents (ps < .05). As detailed in Figure 7, **caregivers exposed to the P4P program reported slightly stronger agreement in their perceptions that important people in their life support and approve of helping their child learn through play compared to those who were *not* exposed to P4P.**

Figure 7. Caregiver Subjective Norms Related to Play



Finally, comparison of the overall TPB constructs showed few differences from pre- to post-implementation as shown in Figure 8. However, there was a small positive change in subjective norms ($p = .03$), such that **caregivers who received P4P reported more positive subjective norms towards play compared to those who did not receive the program**, though the magnitude of this effect was small.

Figure 8. Theory of Planned Behavior Constructs



Results: Multi-Site Implementation

Staff Survey Demographics

Most of the 27 surveys were completed by staff at Eskenazi Health Center (37%, n = 10) and Collier Health/Healthcare Network (26%, n = 7), with the remaining surveys (n = 10) spread across staff at the additional 4 research sites. Survey respondents were largely medical assistants (37%, n = 10) and physicians (30%, n = 8), with the remaining 33% (n = 9) reporting a different role. Additional demographic factors, such as age and race, were not collected from staff survey respondents.

Staff Interview Demographics

Among the 25 providers and clinic staff who completed interviews, 32% (n = 8) were pediatricians, 24% (n = 6) were medical assistants, and 20% (n = 5) were in managerial positions, with the remaining 24% (n = 6) reporting a different role. Respondents generally reported being middle-aged and older (44%), female (52%), white (56%), and Hispanic/Latino(a) (36%). Additional details on respondent demographics are reported in Table 5.

Table 5. Staff Interview Demographics							
	Total (N = 25)	Community Health Center, Inc. (n = 3)	Collier Health/ Healthcare Network (n = 4)	Eskenazi Health Center (n = 8)	Piedmont Health (n = 2)	NYU Langone (n = 4)	Angeles Community Health Center (n = 4)
Age (years)							
18-24	**1**	0	0	0	1	0	0
25-34	**5**	0	0	3	0	1	1
35-44	**3**	1	0	1	0	1	0
45-55+	**11**	2	4	3	1	1	0
Missing	**5**	0	0	1	0	1	3
Provider Gender							
Male	**7**	2	3	1	0	1	0
Female	**13**	1	1	6	2	2	1
Missing	**5**	0	0	1	0	1	3
Provider Race							
White	**14**	3	4	4	1	1	1
Black or African American	**1**	0	0	0	0	1	0
Other	**4**	0	0	3	1	0	0
Missing	**6**	0	0	1	0	2	3
Provider Ethnicity							
Hispanic/ Latino(a)	**9**	0	0	6	1	1	1
Not Hispanic/ Latino(a)	**7**	3	4	0	0	0	0
Missing	**9**	0	0	2	1	3	3

Clinic Observation Demographics

Of the 44 clinic observations, half (50%) occurred during 24-month WCCs, with the remaining observations evenly split across 18- and 36-month WCCs. Most visits were conducted in Spanish (59%) and English (34%) followed by Haitian-Creole and French (7%) as shown in Table 6.

Table 6. Observation Demographics

	Total (N = 44)	Community Health Center, Inc. (n = 7)	Collier Health/ Healthcare Network (n = 5)	Eskenazi Health Center (n = 14)	Piedmont Health (n = 3)	NYU Langone (n = 8)	Angeles Community Health Center (n = 7)
Age (months)							
18	**11**	0	4	1	3	1	2
24	**22**	3	1	9	0	6	3
36	**11**	4	0	4	0	1	2
Language							
English	**15**	3	3	5	1	0	3
Spanish	**26**	4	1	7	2	8	4
Creole	**2**	0	1	1	0	0	0
French	**1**	0	0	1	0	0	0

P4P Program Fidelity

The information gathered through the interview, survey, and observational measures revealed that the P4P program was being implemented with fidelity across all 6 research sites, with two major themes emerging:

1. **P4P encourages providers to discuss and model play with families as intended**

   According to survey data, 68% (n = 14) of respondents indicated they occasionally, rarely, or never incorporated discussions about the importance of play into visits before P4P trainings (see Figure 9).

Figure 9. Prior to the online Prescription for Play training, did you discuss the importance of play during well-child visits?

As a result of the P4P program, many participating providers, who were not routinely discussing play during WCCs prior to completing P4P training, were now doing so. Indeed, 58% (n = 14) of providers reported that they now **always** discuss the importance of play in early childhood. One provider stated:

> *"Those things [like P4P] can be very helpful just because it gives parents a chance to ask questions, and it also is a great way to model the behaviors you're asking them. I find myself talking about play in other visits where I'm not giving the packet a lot more, but I think having that and being able to just model some of the behaviors is very helpful."*

Across research sites, the majority of providers demonstrated alliance with the core goals of the P4P program by discussing the importance of learning through play with caregivers and modeling play with families during WCCs. In 98% (n = 43) of observations, providers successfully gave out the P4P kit, during which 60% (n = 26) used the kit to model play with caregivers. Ninety-five percent of providers observed (n = 42) discussed the importance of play to some degree and nearly two-thirds (61%, n = 27) delivered a specific "Prescription for Play" to caregivers, thereby leveraging their expertise as a provider to make recommendations to caregivers to play more frequently with their children.

These clinic observations were consistent with staff interviews, with most respondents describing success in implementing the program as designed. One provider stated:

> *"I would talk about the different kinds of areas that we're looking at for development, fine motor skill, gross motor skills, and problem solving and social skills and how they're learning a lot of those skills as they're playing with toys. And also as [caregivers are] playing with them with the toys. Usually I'm playing with the toys a little bit with the kids back and forth at the same time."*

These findings provide evidence that the P4P training enhances providers' practices by encouraging them to incorporate conversations about play into their regular WCCs and further showcase that the **P4P program can be widely implemented with fidelity in FQHC settings.**

2. Play discussions from providers explored various benefits of play discussed in the P4P training.

Providers across sites tailored their discussions about the benefits of play using the education provided in the P4P training to address caregivers' concerns about child development. One provider discussed the importance of customizing play-related guidance by stating:

> *"You have to know your audience. I think that as far as what goes on in the room that is what dictates what happens in the room discussions."*

From observations, **the most frequently discussed topic by providers included encouragement to use simple toys and/or have screen-free time (n = 28)** followed by play's influence on:

- → language acquisition and speech development (n = 28),
- → brain development (n = 24),
- → social-emotional skills & relationships (n = 23), and
- → emotional regulation (n = 14).

Although providers were predictably found to discuss the importance of play with language acquisition and speech development during WCCs where developmental delays related to speech were present, we also observed that this topic was brought up most frequently during Spanish-speaking WCCs. Indeed, **of the 28 observations that mentioned the benefit of play related to speech and language, 68% (n = 19) were in Spanish-speaking visits.**

Facilitators to P4P Program Fidelity

Staff indicated several facilitators that enabled them and their teams to implement the P4P program with fidelity across four major themes related to the (1) simplicity of the intervention, (2) usefulness of the program, (3) existence of organized systems to support implementation, and (4) positive reception to the program from their patients and caregivers.

1. Ease/Simplicity of the Intervention.

Given the time constraints and demands of WCCs, any addition to these busy visits must be easy and quick to integrate. Observations indicated **it took providers an average of 2.9 minutes to introduce the play kit and discuss the core P4P messaging**, with most of these conversations built into the anticipatory guidance providers were already giving. Similarly, providers indicated that P4P fit nicely into their existing visits, with 89% (n = 16) of survey respondents agreeing that the content of the P4P training is relevant to their practice.

In interviews, staff noted the P4P training was a low-lift that enhanced their knowledge. One provider stated:

> "[I] *thought it was well done. It wasn't too long, wasn't too short. And it was helpful.*"

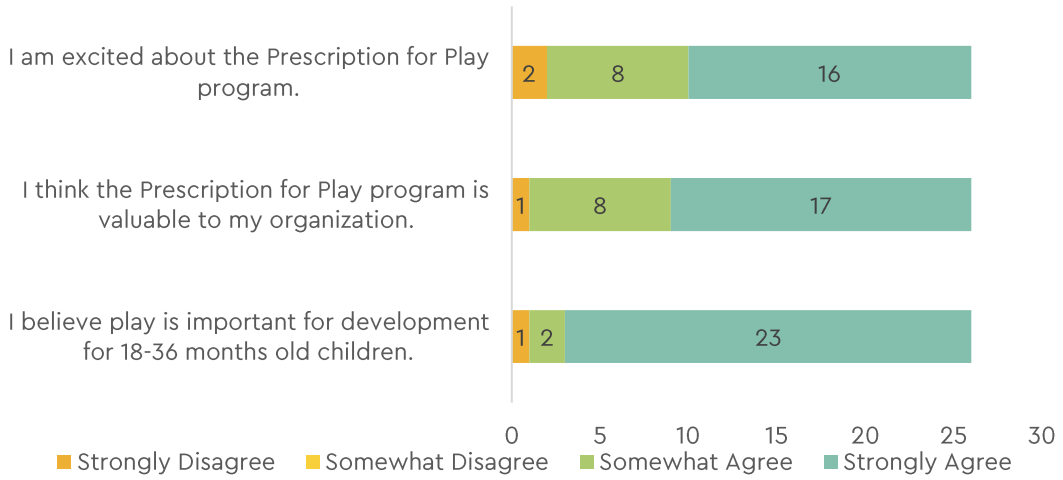
However, a few providers reported challenges with translating the training recommendations into practical play-based recommendations for caregivers.

With regard to the intervention itself, providers expressed that it was not time-consuming and complemented their workflows. One provider stated, *"It was pretty straightforward and easy. It was fun. I guess it wasn't overwhelming,"* while another expressed, *"it's quick and it's easy."*

2. Useful Tool for Developmental Conversations and Concerns.

As shown in Figure 10, nearly all survey respondents somewhat or strongly agreed that they were excited about the P4P program (92%, n = 24), found the program valuable (96%, n = 25), and believe play is important to children's development (96%, n = 25). Notably, the few respondents who disagreed with these statements were from organizations that struggled with implementation fidelity.

Figure 10. To what extent do you agree with the following:



Providers were more willing to carry out the intervention if they recognized the importance of play in development and how the P4P program could be used as a complementary tool to support children's development. Providers in this study

often used the play kit by observing how their patients engage with the bricks to understand their developmental stage. One provider stated:

> *"I also love making comments to the parent about how the kid is playing while we're doing the exam...It's really important that they're just playing with it and you're just making some positive reinforcement about how they're using their hands or what they're doing with it... So I think it can promote discussion that way about developing and what we're looking for."*

Providers further identified P4P as a promising tool that pediatricians can use to help caregivers begin mitigating developmental risks or delays when potential concerns are identified. One provider discussed the empowering message of the P4P program by stating:

> *"This is a very positive message that encourages children and parents to interact, that does all the right things without necessarily making it a don't, don't, don't, don't, sort of activity."*

3. Organized Systems for Implementation

Established processes like EHR tracking, workflows, and storage plans helped providers to implement P4P as designed. Providers reported challenges with implementation when organizational systems were not clear, with one provider stating:

> *"I think the one thing I got concerned about was remembering to [log in EHR] so we can track it. So part of our workflows [is] nurses do it then I check to make sure it's in. So I think that that's been helpful, but other than that, I really have no other concerns about the flow of the day."*

In observations, EHR tracking and established workflows supported implementation. **Those with established implementation systems and strategies were also more likely to model play and discuss multiple benefits to play in visits.**

Among survey responses, staff expressed several challenges they face in delivering P4P kits related to implementation organization like "*Making sure each patient who qualifies for a kit gets identified*" and "*Running out of P4P kits.*"

4. Families Enjoy the Play Kit

A key facilitator to the implementation of P4P was its positive reception by families across sites. The toy was appreciated as a free resource for families, with one provider noting:

> "*Our [pediatrics] population is low income, so I think having different toys and books and things, they really appreciate.*"

It is also not uncommon for children to be uncomfortable during WCCs due to unfamiliarity with the facility and staff or a need for vaccines and bloodwork. In observations, upset children were often eased or comforted by the playfulness the program brings. Providers noted that this helps them better evaluate the development of their patients because children are more likely to display physical evidence of developmental milestones, like stacking blocks, speaking, or interacting socially, when they are comfortable. One provider highlighted this by saying:

> *"The kids get happy…You go in with vaccines and stuff like that. So [the kit] gets them happy. And it makes them open up to you…[the caregivers] get a little bit more trustworthy. Like, oh, they're actually interested in us, you know, what my kid is going through and everything."*

For example, in a WCC for a 30-month-old female patient, the child entered the room playing with a tablet. When the caregiver and provider began discussing developmental milestones, the provider pulled out the kit and opened it. The child, who had not said anything the entire visit and was immersed in her tablet, put the tablet down and played with the blocks. She started naming colors and animating the sound of the toy creature. The parent responded with surprise that the child knew the colors and animal noises, and the child played with the kit for the remainder of the visit. The provider distributing the kit initiated a conversation about development and the importance of play and gave the parent a demonstration of creative play to take home with them.

Suggested Improvements for the P4P Program

Across research sites, the program was widely implemented with fidelity; however, there were a small number of providers and sites that faced challenges to their implementation. Primary challenges included (1) language barriers between provider and patient, (2) caregivers not being properly engaged by clinical discussions, (3) not having a set script to assist in integrating conversations within visits, and (4) limited age groups and play kits for diverse groups of children. Below, we describe these barriers further and propose strategies the P4P program can employ to mitigate implementation barriers.

1. Language Barriers

In observations across sites, visits conducted in Spanish with translation services or non-native Spanish-speaking providers were less likely to have P4P delivered as designed. In general, WCCs with language barriers can take more than double the average time of regular visits when translations are repeated, phone or video conferencing translation services have technical challenges, or mistranslations cause confusion. With a new program like P4P, some providers expressed challenges with the phrasing they or translators used to discuss the intervention.

Observations further showed that translated visits were much more likely to have poor implementation fidelity. Of the 40% (n = 17) of visits that did not have a provider model play with families, 77% (n = 13) were non-English speaking visits. Across observations, only 16% (n = 7) of families did not open the kit at all; however,

of these visits, 86% (n = 6) were non-English speaking, and 71% (n = 5) were using a translation service. Additionally, one provider stated:

> *"Most of our patients are Spanish-speaking, so it's a new script for me to be able to explain and field questions for in Spanish... It was more complicated. I don't know that it would be true if it was all English speaking."*

→ *Future Recommendations.* To address language barriers, future P4P resources should be developed to create guides for providers and resources for caregivers in various languages. In addition, the Weitzman Institute is currently conducting a follow-up research project among caregivers from varied linguistic and cultural backgrounds to identify tangible ways to improve program implementation and acceptability among caregivers who prefer to speak in languages other than English. However, there remains a need for more focused research to optimize P4P specifically for translation visits.

2. Caregiver Engagement

Some providers expressed challenges with engaging caregivers in discussions about play. One provider stated:

> *"Sometimes with parents I feel like sharing and speaking to them about this project, I feel like some give you their attention and some don't... Thinking of ways to kind of make it exciting."*

In observations, caregivers engaged more actively in P4P when providers modeled play. Specifically, in 25% (n = 11) of observations, families did not play with the P4P kit, and of those visits, 82% (n = 9) did not have providers model play.

→ *Future Recommendations.* Future P4P training and communications to providers are being revised to emphasize the importance of modeling play with caregivers in tandem with discussing play. The aforementioned research project currently being overseen by the Weitzman Institute will further explore attitudes and approaches towards play among caregivers from varying linguistic and cultural backgrounds, the findings from which will be used to inform guidance for providers to better engage caregivers from diverse backgrounds in more culturally-informed discussions about play.

3. No Sample Script for Providers

Although the P4P training introduces the importance of play, **some providers did not know what practical recommendations related to play to give caregivers.** Others cited challenges with the more open-ended recommendations for discussing play with caregivers provided in the P4P training. One provider stated:

> *"I think doing one demo of 'this is what we want you to do' or how you'd want us to introduce it to the kids...it's just nice to have a sense of what to say."*

Additionally, some providers desired guidance or sample scripts that related to the importance of learning through play among children with developmental delays, developmental disabilities, and physical disabilities.

→ *Future Recommendations.* In the coming year, the P4P team will develop sample scripts for providers based on data from this project and in consultation with subject-matter experts. The English and Spanish scripts will address concerns discussed during WCCs for 18-36-month-old patients, with an emphasis on how to integrate this script into a provider's existing anticipatory guidance.

4. Sustainability of P4P Resources

Providers widely expressed concerns about restricting P4P resources to a small age-group and only giving the kit during one visit. By having only one encounter with toys, providers did not anticipate having discussions in follow-up visits. One provider stated:

> *"It would be nice to see another toy at some point as a continuum about play. I mean one-and-done is like going someplace and getting a free snack one time and then even though it's a healthy snack that doesn't necessarily mean you are going to be eating healthy for the rest of your life."* Another provider added context, stating, *"I think the next challenge I'll have is because we only give the blocks once, right? So my next challenge is going to be remembering to check previous physicals as we get five to six months into this to make sure that I haven't already given the blocks."*

Additionally, siblings often attend WCCs or have WCCs at the same time, but they may not be in the P4P age-range. Providers expressed challenges with limiting the kit to only one child in the family, with one provider saying"

> *"It's a little bit hard when you have one kid, but then there's three kids in the room or two other little kids in the room, and then the other one's kind of heartbroken when they don't qualify for that."*

→ *Future Recommendations.* Future development of the P4P program should consider researching the effects of varied doses of P4P resources, both with and without play kits. Additionally, the P4P program should conduct a comprehensive review of existing programs that explore the impact of play for various ages outside of 18-36 months to better understand the need for widening the age-range of the program. In the immediate future, P4P resources are being developed that consider recommendations for how to tailor anticipatory guidance with multiple children or siblings present.

Limitations

This research encountered several limitations in the data collection process. First, due to a lower response rate than expected, we launched implementation of the P4P program earlier than anticipated, which led to fewer pre-implementation caregiver surveys than planned.

Second, the regular bi-weekly communication with clinics may have influenced the fidelity to the model, potentially skewing the implementation process to appear more successful than it would be without such frequent contact. Additionally, providers and families may have experienced an observer effect during clinic observations and altered their behaviors to appear more favorable. For example, providers and caregivers may have played more with kits during WCCs because observers were recording information about the P4P program. Future research should consider observing and interviewing caregivers who do not receive kits or doing so more anonymously.

Third, because research sites were recruited to have larger samples of Spanish-speaking patients, a large majority of caregivers identified as Hispanic, which limits generalizability of these findings to caregivers from other racial and ethnic backgrounds. Similarly, nearly all caregivers identified as female, underscoring the need for additional efforts to strategically recruit male caregivers.

Fourth, the findings may not be generalizable to all health settings as this evaluation included only FQHCs. Different settings with different resources and patients may yield distinct implementation and play experiences.

Lastly, although the program aligns with the positive views caregivers hold towards play, this research does not demonstrate a direct line between the program and definitive changes in caregivers' play behaviors. To understand the full impact of P4P, there is a need to further evaluate its effectiveness using more rigorous approaches, such as longitudinal follow-up and additional quasi-experimental designs, in both pediatric and caregiver samples.

Conclusions

Results from this study replicate and extend our previous work[11] by demonstrating that the **P4P program can be implemented as designed within varied FQHC settings.** A majority of providers successfully introduced and modeled play using the play kit and discussed the key role play has in development with caregivers. **Providers found the program to be quick and easy to introduce during WCCs, with the average length of the intervention taking less than 3 minutes to deliver.** Providers and clinic staff found success when they saw the benefits of the program, they were prepared for implementation with workflows,

[11] Panjwani S, Anderson-Badbade S, Oo M, Velez I, Beckham J. Play Promotion for Pediatric Patients: A Feasibility and Pilot Study of Embedding 'Prescription for Play' in Well-Child Visits, Phase 1 Evaluation Report. Weitzman Institute, Community Health Center, Inc.; 2022.

they had knowledge of the program, and when caregivers were receptive to the program. They struggled to implement the P4P program properly when there were challenges with communication with caregivers due to engagement and language barriers, noting that sample scripts would be helpful to address these barriers. Providers also pointed out concerns related to the age restrictions of the program.

Results from our caregiver survey show that, **even before exposure to P4P, caregivers report positive views of and a high investment in playing with their children.** This finding is consistent with prior qualitative research in low-income families with young children showing that parents view play favorably and report a strong desire to encourage their child's developmental skills through play.[12] **The P4P program thus aligns with caregivers' views on play, which likely increases its acceptability among caregivers.** In support of this, we observed that caregivers positively received the program overall, which was further corroborated during staff interviews.

Although our research did not show P4P to significantly alter caregivers' already positive views and behaviors towards play, **there was some evidence that P4P may enhance subjective norms towards play among caregivers.** Specifically, caregivers exposed to P4P reported a slightly stronger belief that important people in their lives support and approve of them playing with their children compared to those not exposed to P4P. Although we cannot be sure without further investigation, it may be that the P4P program encouraged caregivers to reflect on the people in their lives who facilitate play with their children or led them to have conversations with these individuals about the P4P messaging after the WCC, which reaffirmed their support systems around play. Nevertheless, it must be noted that the magnitude of this effect on subjective norms was small and requires future research to replicate and extend it.

Interestingly, **although caregivers generally reported feeling that they have control over playing with their children, more than 25% in both samples reported feeling that there are other people in their lives who serve as barriers to play.** Thus, although the P4P program may help caregivers to reflect on positive influences on play in their lives, it does not appear to address barriers to play in other relationships outside of the caregiver's control.

Future Directions

Taking these findings into account, we recommend several practical changes that can be implemented immediately to improve P4P delivery:

1. Creation of **clinical sample scripts** for providers that focus on practical recommendations for approaching conversations about play with caregivers and modeling play with patients.
2. Development of **guides and resources in multiple languages** to improve program delivery among caregivers who speak diverse languages.

[12] Shah R, Gustafson E, Atkins M. Parental Attitudes and Beliefs Surrounding Play Among Predominantly Low-income Urban Families: A Qualitative Study. J Dev Behav Pediatr. 2019 Oct/Nov;40(8):606-612. doi: 10.1097/DBP.0000000000000708.

In addition to these immediate changes, our work further uncovered a need for more thoughtful research to improve the P4P program in the following domains:

1. Given the barriers associated with translated visits, it will be important for future work to **develop protocols detailing the most effective way to introduce P4P when translators are present**.
2. Because the goal of P4P is to increase the amount of time caregivers spend playing with their children, it is encouraging that caregivers come into conversations about play already caring about and wanting to play with their children. However, to better understand the impact of P4P on caregiver outcomes, **the program would benefit from understanding whether P4P messaging translates to actual changes in caregiver behavior**. The Weitzman team is currently collecting additional information on changes in the home play environment after exposure to P4P to better address this need.
3. Given differences in caregiver engagement with the program and its delivery, particularly among Spanish-speaking caregivers, these findings indicate a need for **future research to uncover the unique views of and approaches to play among different subpopulations of caregivers.** Such research will inform strategies to better engage caregivers from diverse backgrounds. Research to develop a more culturally-informed approach to P4P program delivery is currently being undertaken by the Weitzman team.
4. Beyond assessing implementation feasibility, **future work is necessary to evaluate the impact of the P4P program on child outcomes.** In line with this, the Weitzman team is currently conducting a longitudinal study assessing differences in socioemotional outcomes among children who do and do not receive P4P.

With these enhancements to the P4P program, providers will be better equipped to implement P4P and caregivers more likely to benefit from these discussions to promote play with their children.

Appendix A: Caregiver Survey

Start of Block: Identifiers

Q1 Please confirm that you attended this recent well-child visit:

- ○ Yes (1)
- ○ No (2)
- ○ Do Not Recall (3)

Q2 What is your relationship to the child?

- ○ Parent (1)
- ○ Grandparent (2)
- ○ Extended family member (e.g., aunt, uncle, cousin) (3)
- ○ Non-related caregiver (4)
- ○ Other, please specify (5) _____

Q3 Are you the child's primary caregiver?

- ○ Yes (1)
- ○ No (2)

Display This Question:
If Are you the child's primary caregiver? = No

Q4 Who is the child's primary caregiver?

- ○ Both parents (1)
- ○ One parent (2)
- ○ Grandparent(s) (3)
- ○ Extended family member (4)
- ○ Non-family member (5)
- ○ Other, please specify (6) _____

End of Block: Identifiers

Start of Block: Recall - WCC Visit

Q5 Please respond based on your most recent well-child visit:

Q6 Did a provider give you a 'prescription' for playing with your child?

- ○ Yes (1)
- ○ No (2)
- ○ Do Not Recall (3)

Display This Question:
If Did a provider give you a 'prescription' for playing with your child? = Yes

Q7 For how many minutes per day is your 'play prescription'?

- ○ 5 Minutes (1)
- ○ 10 Minutes (2)
- ○ 15 Minutes (3)
- ○ Do Not Recall (4)

Q8 Did the child receive a bag of toy bricks?

- Yes (1)
- No (2)
- Do Not Recall (3)

Display This Question:
If Did the child receive a bag of toy bricks? = Yes

Q9 How often have you used the toy bricks to play with your child?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)

Q10 Did you receive an educational brochure?

- Yes (1)
- No (2)
- Do Not Recall (3)

Display This Question:
If Did you receive an educational brochure? = Yes

Q11 How often have you used the brochure?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)

Q12 Did the child receive a play card?

- ○ Yes (1)
- ○ No (2)
- ○ Do Not Recall (3)

Display This Question:
If Did the child receive a play card? = Yes

Q13 How often does the child use the card when playing?

- ○ Never (1)
- ○ Rarely (2)
- ○ Sometimes (3)
- ○ Often (4)

End of Block: Recall - WCC Visit

Start of Block: Behaviors

Q14 On average, how many minutes per day do you make sure you engage in play with your child after your child's most recent visit?

- ○ Less than 15 minutes a day (1)
- ○ At least 15 minutes a day (2)

End of Block: Behaviors

Start of Block: Knowledge and Skills to Perform the Behavior

Q15 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My knowledge about the following topics:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
My knowledge about what counts as 'play' (1)	○	○	○	○
My knowledge about how to 'play' with my child (2)	○	○	○	○
My knowledge about why 'play' is important (3)	○	○	○	○

End of Block: Knowledge and Skills to Perform the Behavior

Start of Block: Salience of the Behavior

Q16 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My interest about the following topics:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
My interest in engaging in 'play' with my child (1)	○	○	○	○
My interest in new information about how to 'play' (2)	○	○	○	○
My interest in practicing 'play' habits (3)	○	○	○	○

End of Block: Salience of the Behavior

Start of Block: Environmental Constraints

Q17 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

Barriers I face regarding the following topics:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Having time to play with my child as a barrier (1)	○	○	○	○
Access to play things (or toys) as a barrier to playing with my child (2)	○	○	○	○
Lack of safe space as a barrier to playing with my child (3)	○	○	○	○

End of Block: Environmental Constraints

Start of Block: Habits

Q18 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My own habits regarding the following topics:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Working on puzzles such as crosswords and jigsaws (1)	○	○	○	○
Playing games such as chess and checkers (2)	○	○	○	○
Using phone apps that help improve my memory & attention (e.g., Lumosity) (3)	○	○	○	○

End of Block: Habits

Start of Block: Behavior Intentions

Q19 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My intentions about the following topics:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
My intention to play with my child each day (1)	○	○	○	○
My intention to play with my child 15 minutes a day (2)	○	○	○	○
My intention to help my child learn through play (3)	○	○	○	○

End of Block: Behavior Intentions

Start of Block: Experiential Attitude

Q20 Please respond based on your attitude after your child's most recent visit.

When I think about helping my child learn through play, me feeling:

	Strong Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
Enjoyable (1)	○	○	○	○
Pleasant (2)	○	○	○	○
Boring (3)	○	○	○	○

End of Block: Experiential Attitude

Start of Block: Instrumental Attitude

Q21 Please respond based on your attitude **after** your child's most recent visit.

My belief that helping my child learn through play is:

	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
Helpful (2)	○	○	○	○
Valuable (4)	○	○	○	○
Useless (6)	○	○	○	○

End of Block: Instrumental Attitude

Start of Block: Injunctive Norms

Q22 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My perception that the most important people in my life:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Think I should help my child learn through play (1)	○	○	○	○
Support me in helping my child learn through play (2)	○	○	○	○
Approve of me helping my child learn through play (3)	○	○	○	○

End of Block: Injunctive Norms

Start of Block: Descriptive Norms

Q23 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My perception that the most important people in my life:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Play with their children all or most days (1)	○	○	○	○
Enjoy playing with their children (2)	○	○	○	○
Play with their children at least 15 minutes a day (3)	○	○	○	○

End of Block: Descriptive Norms

Start of Block: Perceived Behavioral Control

Q24 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My belief that helping my child learn through play:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Is within my control (1)	○	○	○	○
Is up to me (2)	○	○	○	○
Is not prevented by others (3)	○	○	○	○

End of Block: Perceived Behavioral Control

Start of Block: Self-Efficacy

Q25 In general what degree of change has taken place since your provider talked to you about the importance of play? Please respond with Much Change, Some Change, Very Little Change, or No Change.

My confidence that I can:

	Much Change (1)	Some Change (2)	Very Little Change (3)	No Change (4)
Play with my child all or most days (1)	○	○	○	○
Play with my child 15 minutes a day (2)	○	○	○	○
Provide different opportunities for my child to play (3)	○	○	○	○

End of Block: Self-Efficacy

Start of Block: Demographics

Q26 Does this child live in a single-parent household?

"One parent with one or more minor children (under the age of 18), regardless of whether adult children also live in the home, and no other relatives or non-relatives."

- ○ Yes (1)
- ○ No (2)
- ○ Prefer not to say (3)

Q27 What is your age group?

- ○ 18-24 Years (1)
- ○ 25-34 Years (2)
- ○ 35-44 Years (3)
- ○ 45-54 Years (4)
- ○ 55 Years Plus (5)
- ○ Prefer not to say (6)

Q28 What is your sex?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

Q29 What is your race?

- ○ White (1)
- ○ Black or African American (2)
- ○ American Indian or Alaska Native (3)
- ○ Asian (4)
- ○ Native Hawaiian or Pacific Islander (5)
- ○ Other (6) _____
- ○ Prefer not to say (7)

Q30 Are you of Hispanic, Latino, or Spanish origin?

- ○ Yes (1)
- ○ No (2)
- ○ Prefer not to say (3)

End of Block: Demographics

Appendix B: Staff Survey

Start of Block: General Information

Q1 **Prescription for Play Healthcare Professional Survey**
We'd love to hear from you about your "Prescription for Play" experience as a healthcare provider or staff member.

This brief survey will help us make improvements to the program for other sites in the future.

The survey should only take 5 minutes, and your responses are confidential. You can only take the survey once, but you can change your answers before you submit the survey.

If you have any questions about the survey, please email us: P4P@chc1.com

We really appreciate your input!

Q2 For which organization and site do you work? (*Example: Eskenazi Health - Pecar*)
_____

Q3 What is your current role within your organization (e.g., medical assistant, nurse, pediatrician, physician's assistant)?
_____

Q4 How many years have you been in your current role with this organization?

- ○ Less than 1 year (1)
- ○ 1-5 years (2)
- ○ 6-10 years (3)
- ○ 11-20 years (4)
- ○ 21-30 years (5)
- ○ 31+ years (6)

Q5 How many years have you been working for this organization?

- ○ Less than 1 year (1)

- ○ 1-5 years (2)
- ○ 6-10 years (3)
- ○ 11-20 years (4)
- ○ 21-30 years (5)
- ○ 31+ years (6)

End of Block: General Information

Start of Block: Adherence

Q6 Have you completed the online Prescription for Play portal training?

- ☐ Yes, as a provider (1)
- ☐ Yes, as a site coordinator (2)
- ☐ No (3)
- ☐ I do not know (4)
- ☐ I did not need to complete the training (not a medical provider or site coordinator) (5)

Display This Question:
If Have you completed the online Prescription for Play portal training? = Yes, as a provider

Q7 Have you completed the online training survey for CE credit?

- ○ Yes (1)
- ○ No (2)
- ○ Not yet, but I plan to soon (3)

Q8 Has your organization established processes to record Prescription for Play LEGO kit distribution in your Electronic Health Record?

- ○ Yes (1)

- ○ No (2)
- ○ I am not aware of a process to record in our EHR (3)
- ○ Not yet, but my organization is planning to (4)

Q9 Has your organization established a site coordinator for the Prescription for Play program?

- ○ Yes (1)
- ○ Yes, but I do not know who they are (2)
- ○ No (3)
- ○ Not yet, but my organization is planning to (4)
- ○ I do not know (5)

Q10 Has your organization established a place to store all Prescription for Play materials?

- ○ Yes (1)
- ○ No (2)
- ○ I am not aware of a storage area specifically for Prescription for Play (3)
- ○ Not yet, but my organization is planning to (4)

Q11 Has your organization established a workflow for incorporating Prescription for Play and/or distributing the block kits to children?

- ○ Yes (1)
- ○ No (2)
- ○ Not yet, but my organization is planning to (3)
- ○ I do not know (4)

Q12 How **often** do you do the following when giving out Prescription for Play LEGO kits during well-child visits:

	Always (1)	Most of the time (2)	About half the time (3)	Sometimes (4)	Never (5)	N/A (6)
I record when I give out Prescription for Play kits in my organization's Electronic Health Record. (1)	○	○	○	○	○	○
I explain the importance of play in early childhood when I give out the Prescription for Play kit. (2)	○	○	○	○	○	○
I open the blocks and model play with patients at well-child visits. (3)	○	○	○	○	○	○

End of Block: Adherence

Start of Block: Responsiveness and Quality of Delivery

Q13 To what extent do you **agree** with the following statements:

	Strongly disagree (1)	Somewhat disagree (2)	Somewhat agree (3)	Strongly agree (4)
I am excited about the Prescription for Play program. (1)	○	○	○	○
I think the Prescription for Play program is valuable to my organization. (2)	○	○	○	○

I believe play is important for development for 18-36 months old children. (3)	○	○	○	○
I learned new things from my online Prescription for Play training. (4)	○	○	○	○

Q14 Prior to the online Prescription for Play training, did you discuss the importance of play during well-child visits?

- ○ Yes, at every visit (1)
- ○ Yes, at most visits (2)
- ○ Occasionally (3)
- ○ Rarely (4)
- ○ I did not discuss play in any well-child visits (5)
- ○ N/A (6)

Q15 To what extent do you **agree** with the following statements:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)	N/A (7)
The content of the online Prescription for Play training is relevant to my practice. (1)	○	○	○	○	○	○	○
I would like to continue with	○	○	○	○	○	○	○

Prescription for Play into the future with my organization. (2)							
I learned new things from the Prescription for Play training. (3)	○	○	○	○	○	○	○
I feel confident in my ability to explain Prescription for Play to caregivers. (4)	○	○	○	○	○	○	○

Q16 What challenges do you face in delivering the Prescription for Play kits to children and caregivers?

_____

Q17 What components of the program supported implementation of the Prescription for Play program?

_____

Q18 What additional resources are needed to implement the Prescription for Play program?

_____

Q19 Have you invited other providers in your network to join Prescription for Play?

- ○ Yes, I have invited providers from my organization. (1)
- ○ Yes, I have invited providers from other organizations. (2)
- ○ No, I have not invited other providers. (3)
- ○ I have not invited other providers, but I may in the future. (4)

Q20 Please rate the overall quality of the following:

	Terrible (1)	Poor (2)	Average (3)	Good (4)	Excellent (5)	N/A (6)
Online training video for Providers (1)	○	○	○	○	○	○
Online training for Site Coordinators (2)	○	○	○	○	○	○
Online Prescription for Play portal (3)	○	○	○	○	○	○
Overall delivery of the program training (4)	○	○	○	○	○	○

Q21 Is there anything else you would like to share about your Prescription for Play experience?
_____

End of Block: Responsiveness and Quality of Delivery

Appendix C: Staff Interview Guide

[Physicians and other identified primary care providers (NPs, PAs), registered nurses, licensed practical nurses, medical assistants]

Thank you for taking the time to meet with me today. As you know, CHC, in agreement with your organization, is in the process of conducting a research study to explore how the promotion of 'play' can be incorporated into well-child care visits for patients 18-to 36 months of age.

Research has shown positive outcomes regarding the importance of 'play' for supporting the healthy cognitive, physical, social, and emotional development of young children. We are specifically interested in your views about the value of the 'Prescription for Play' project you have been involved with and your experience with the logistics of using the play kits in your practice.

Note: Please provide interviewee a copy of the questionnaire. Also ask them to fill out the short questionnaire before concluding the interview (last page of this document).

Interviewee Name: Date:
Interviewer: Location/Organization:

Personal History

1. What's your position/role?

2. How long have you been in that position/role? In this organization?

3. What did you know about play learning programs before P4P was brought to your site?

Barriers and Facilitators

4. Is there anything you find challenging about Prescription for Play in your practice? In your organization?

5. Is there anything you wish would have been done differently by your team? In your training?

6. Are there benefits to Prescription for Play?

    a. If it were up to you would you continue Prescription for Play and why?

Modifications/Adaptations

7. Can you walk me through a typical WCC visit? (*How do they incorporate P4P? How does it fit in with other duties?*)

    a. What aspects of P4P do you think are important? Which are unnecessary, if any?

    b. What are the key points you try to discuss with caregivers when distributing the kits?

Participant Responsiveness & Quality of Delivery

8. Provider/Staff
    a. Do you know was in charge of implementation at your site (e.g., ordering kits, explaining workflow) (*site coordinator*)? What was your personal role?

b. Did you complete the online training? What did you think?

c. What has you team's reaction to the program been?

9. Caregiver
    a. Without divulging any personally identifiable information, can you tell me about the reactions of caregivers/families when they receive the kits? *(Are the kits well-received among families? Do they understand why you are giving it to them?)*

    b. Without divulging any personally identifiable information, can you tell me about the reactions of the children to the P4P kits?

10. Have you had any follow-up visits with patients who have received Prescription for Play (non-wcc visits)? Did you discuss the importance of play in those visits?

11. Is there anything else you would like to say about your experience with the Prescription for Play program?

We also have a few demographic questions. (Allow interviewee to answer on own.)

12. What is your age group?
    ❑18-24 years
    ❑25-34 years
    ❑35-44 years
    ❑45-54 years
    ❑55 years plus
    ❑Prefer not to answer

13. What is your gender?
    ❑Male
    ❑Female
    ❑Non-binary / third gender
    ❑Prefer not to say

14. What is your race/ethnicity?
    ❑White
    ❑Black or African-American
    ❑American Indian or Alaska Native
    ❑Asian
    ❑Native Hawaiian or other Pacific Islander
    ❑Other (please specify): _____
    ❑Prefer not to say

15. Are you of Hispanic, Latino, or Spanish origin?
    ❑Yes
    ❑No
    ❑Prefer not to say

Thank you so much for your time today.

Appendix D: Clinic Observation Guide

1. Before Traveling to **the Partnering Organization Facility**:
   ☐ Research team member contacts designated site representative for upcoming eligible patient visits via e-mail:
   ☐ Provider must be a provider who has completed the Prescription for Play Provider training
   ☐ Patient must be due for 18, 24, 30, or 36 month well-child care visit
   ☐ Patient must not previously have received "Prescription for Play" kit
   ☐ Research team member, *at least 1 business week in advance*, sends email to partnering facility facility's operations lead; copies facility's clinical pediatrics lead; copies study's primary investigator:
   ☐ Name of visiting research team member; estimated duration of visit to area
   ☐ Days of observation; estimated time of arrival each day; point of contact at the site
   ☐ Research team member's email address; contact number

2. When at the Partnering Facility:
   ☐ Research team member sends message (e-mail or Skype Business IM) to facility contact, requesting building entry
   ☐ Research team member is shown where to put belongings, location of office equipment, etc.
   ☐ Research team member prints observation guides to be used that day (*if using paper copies*)
   *Observation guide is to be completed during or immediately after the intervention is observed. Research team member **does not** record information in a way that could be used to identify people being observed. Researcher will use one guide per Well-Child Care visit.*
   ☐ Research team member shadows Medical Assistant, as latter prepares to work up each patient:
   ☐ If Medical Assistant agrees to ask for parental consent, here is sample script:

      "Hi. My name is _____, this is _____. They work for CHC, Inc and are doing a pediatric project to observe well-child visits. Is it okay if they observe today's visit?"

      "Hola, mi nombre es _____, esta es _____. Ella trabaja para CHC y estan hacienda un Proyecto pediatrico para observer visitas de cuidado infantil. Usted esta de acuerdo con que ella observe la visita de hoy?"

   ☐ If research team member must ask for parental consent, *see following pages for sample script*

3. Before Departing Partnering Facility:
   ☐ Research team member scans completed forms and field notes, and they check electronic versions for legibility
   ☐ Research team member puts completed forms in secure shredding bin

Observational Guide

Site Location: Date:
Start Time: Researcher:

Consent
Family Permission:
☐ Received (MA Asked) ☐ Received (Researcher Asked)
☐ Not Received (MA Asked) ☐ Not Received (Researcher Asked)

Hi. My name is <researcher>. I work for CHC, Inc and am doing a pediatric project to observe well-child visits. Is it okay if I observe today's visit?

Hola, mi nombre es <name>. Yo trabajo para CHC y estoy trabajando en un Proyecto pediatrico para observer visitas de cuidado infantil. Esta bien con usted si observo la visita de hoy?
Clinic Room Checklist *(One checklist per WCC)*

Exposure	Did the family receive a kit?	Yes / No
	Who introduced the kit?	MA / Provider
	Did the provider/MA speak about the kit?	Yes / No
	How long did the provider speak about the kit? (estimate)	
Quality of Delivery	*Did the provider/MA talk about the following in relation to the kit:*	
	-A "Prescription for play" like Playing for 15 mins a day OR Playing once a day with the child	Yes / No
	-Brain Development	Yes / No
	-Emotional Regulation	Yes / No
	-Language Acquisition	Yes / No
	-Social-emotional skills & relationships	Yes / No
	-Simple toys/Screen-free time	Yes / No
	Did the provider help them play with the kit?	Yes / No
Participant Responsiveness	Did the family open the kit?	Yes / No
	Did the family play with the kit in the room?	Yes / No

Adapted from James K, Quirk A, Patterson S, Brennan G, Stewart D. Quality of intervention delivery in a cluster randomized controlled trial: a qualitative observational study with lessons for fidelity. Trials. 2017 Nov 17;18(1):548.

P4P Interaction	
Set the scene of the visit. -Where is the room? What is the overall feel- friendly, cold, playful, etc? -Who is in the room? What ages, languages?	
Describe the kit distribution. -Who on the care team introduced the kits and how? -How did the caregiver and child receive the kit – consider attitudes, emotions, movement, and speech? -How did the child and parent engage with the kit throughout the visit? -How did the provider engage with the patient and the kit throughout the visit? -How long did the provider talk about play and how did they talk about it?	
Contextualize the visit. -Was the distribution challenging? If so why? -What other things influenced the distribution of the P4P kit? -Was there anything else in the visit that you would like to note?	
What are 3 major points from your observation that are important to note for P4P program development?	

Clinic Observation	
Describe the pod/work areas. -What kind of playful elements exist in the pod areas? Are there any signs/brochures/playful items that call attention to play? -What is the atmosphere like? Is it busy, crowded, isolated, quiet? -Where are the providers located? Are the providers in the same area as the MAs?	
Describe where the kits are located both in storage and in the pod/work areas.	

-Where are the kits located in the clinic? -How difficult are the kits to find and identify? -How has this site adapted storage strategies to meet the needs of the clinic?	
Describe the workflow of the P4P program at this clinic. -Storage, distribution, and logging in EHR	

Questions guided and informed by implementation fidelity frameworks, P4P implementation strategies, and ethnographic observation protocols.

Appendix E: Caregiver Attitudes Related to Play