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**Interagency Training to Promote Culturally Responsive, Family-Centered Home Visiting
and Pediatric Service Integration**

by

Christina N. Wood

Presented to the Graduate Research Committee

of Lehigh University

in Candidacy for the Degree of

Doctor of Philosophy

In

School Psychology

Lehigh University

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Certificate of Approval

Approved and recommended for acceptance as a dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Date

Patricia H. Manz, Ph.D.
Dissertation Chair
Professor of School Psychology
Lehigh University

Accepted Date

Committee Members:

George DuPaul, Ph.D.
Professor of School Psychology
Lehigh University

L. Brook Sawyer, Ph.D.
Professor of Teaching, Learning, and Technology
Lehigh University

Fathima Wakeel, Ph.D., MPH
Associate Professor of Population Health
Lehigh University

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Abstract

Early childhood is a critical period of rapid cognitive, language, and social-emotional development, which influences long-term health and educational outcomes (Shonkoff et al., 2009). However, poverty can hinder development during these formative years (Morris et al., 2017), making it essential for agencies serving infants and toddlers to promote positive outcomes for at-risk populations. Two key service systems—home visiting and pediatric primary care—share the goal of providing culturally responsive, family-centered care. Despite this shared goal, coordinated care between these systems is lacking. One potential solution for achieving coordination is interagency training, where professionals from both systems engage in joint training to improve communication and understanding of each other's roles. The current study followed the Participatory Intervention Model (Nastasi et al., 2000) to design and pilot *Linking for Little Ones* (LLO), an interactive interagency training for Early Head Start (EHS) home visitors and pediatric primary care residents. The training aimed to enhance mutual understanding of service systems and promote sustained collaboration between systems. LLO included four components: Interactive Instruction, Collaborative Case Study, Dual Discussion of Families, and a Reflective Debriefing session. A total of 10 EHS home visitors and 41 pediatric primary care residents participated. Results indicated that home visitors reported small gains in comfort and competence in guiding families on health topics and engaging in interprofessional collaborations with pediatricians. Effect sizes ranged from small to large across timepoints. Pediatric residents showed improvements in knowledge of EHS, family-centered care, and ideas for continued collaboration with home visitors. These results suggest that LLO offers meaningful benefits and warrants further exploration through a full-scale study. Limitations and future research directions are discussed.

Chapter 1: Introduction and Literature Review

The first five years of life are marked by rapid cognitive, language, and social-emotional development, which are vital for later health and educational outcomes (Shonkoff, 2010; Shonkoff et al., 2009). Extensive research has highlighted the significance of this early development for school readiness, which is strongly linked to higher graduation rates, reduced risky behaviors, and improved adult health (Peterson et al., 2018). For instance, stronger working memory (Fitzpatrick & Pagani, 2012), vocabularies (Tamis-LeMonda et al., 2014), and emotion regulation skills (Brophy-Herb et al., 2013) during infancy and toddlerhood are each associated with greater school readiness at kindergarten entry. Given the critical role of school readiness in long-term success, these findings emphasize the importance of supporting early development during infancy and toddlerhood, when the brain is most adaptable and capable of forming new neuronal connections (Shonkoff & Phillips, 2000).

Influence of Poverty on Development

Though early healthy development is imperative, it is not equally attainable for all infants and toddlers. The experience of poverty can considerably limit young children from accessing necessary resources to promote their development. This is especially problematic in the United States, where infants and toddlers make up the largest percentage of economically disadvantaged individuals, with recent estimates showing that about one in every five infants and toddlers belongs to a family living in poverty (Child Trends, 2022).

Poverty can adversely affect early development due to the effects of chaotic environments, high levels of familial stress and mental health concerns, and the lack of control that is common to economically disadvantaged households (Duncan & Magnuson, 2013; Morris et al., 2017). Neurobiological research has demonstrated that these stressful early experiences

can have detrimental impacts on children's neurological, metabolic, and immunologic systems (Miller et al., 2011). In addition, poverty conditions limit parents' abilities to interact with their children and foster learning environments that are crucial for development. Overall, a substantial body of literature suggests that poverty conditions during early childhood have negative implications for school readiness, academic achievement, health, and employment across the lifespan (Brooks-Gunn & Duncan, 1997; Duncan & Magnuson, 2013; Linver et al., 2002).

Service Systems for Infants and Toddlers

Decades of research support the positive outcomes of early prevention and intervention for young children with or at risk for developmental delays and health conditions due to low socioeconomic status (Blair & Raver, 2016). Two prominent health and developmental service systems for infants and toddlers include home visiting programs and pediatric primary care. Both service systems focus on promoting optimal outcomes for children through prevention and intervention practices. Although pediatric primary care serves the general population of children, which includes low-income infants and toddlers, home visiting programs intentionally serve low-income infants and toddlers with or at-risk for developmental delays and health concerns.

Child Development-Focused Home Visiting

The Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program is administered by the Health Resources and Services Administration as a means to identify and support implementation of evidence-based home visiting programs (Health Resources and Services Administration, 2022). MIECHV supports expectant and new parents and their infant and toddler children who are at-risk for poor maternal and child health outcomes due to low socioeconomic status. Home visiting programs promote health equity by supporting positive parenting, child health and development, and school readiness skills. Home visitors address these

topics in a variety of ways, such as promoting healthy pregnancy practices, providing education on safety needs (e.g., safe sleeping positions), encouraging early language development and learning at home, teaching positive parenting behaviors (e.g., praise), supporting families' access to healthcare, promoting attendance at well-child visits as well as visits for illnesses and injuries, and connecting families with additional beneficial resources (U. S. Department of Health and Human Services [USDHHS], 2016).

There are a variety of evidence-based home visiting models focused on child development. The Home Visiting Evidence for Effectiveness (HomeVee) review, conducted by the USDHHS, is an ongoing assessment of the effectiveness of home visiting models under the MIECHV program. Of the 24 evidence-based models identified, 15 currently measure child development outcomes (USDHHS, n.d.). These programs are evaluated based on improvements in child and family outcomes across one or more of eight total domains: 1) maternal health, 2) child health, 3) positive parenting practices, 4) child development and school readiness, 5) reductions in child maltreatment, 6) family economic self-sufficiency, 7) linkages and referrals to community resources and supports, and 8) reductions in juvenile delinquency, family violence, and crime.

While these program models share core characteristics, they may take different approaches and follow distinct structures (USDHHS, 2022). A central shared characteristic is the foundational evidence that parenting practices are closely linked to positive child outcomes (Shonkoff & Phillips, 2000). As a result, all home visiting programs focus on parents and parenting, with some prioritizing child development as their primary goal, like the 15 mentioned above, while others target parent outcomes as their main focus. Ultimately, the goal of home visiting is to promote positive child outcomes through parent-mediated interventions and family-

centered practices. This emphasis on parenting is central to the theory of change described by Raikes and colleagues (2014), which posits that home visiting programs for infants and toddlers can have the greatest impact on children's development by influencing parenting skills.

Home visiting program models vary in terms of the age ranges they serve (e.g., birth to two years old versus birth to three years old) and the frequency of home visits (e.g., weekly versus biweekly). These differences are also reflected in the structural components of the programs. For example, Early Head Start (EHS) and Parents as Teachers (PAT) are two well-known child development-focused home visiting models. EHS typically includes weekly home visits along with monthly family group socialization opportunities, while PAT provides one to two home visits per month and family group connections that focus on parenting and child development concerns.

Pediatric Primary Care

Pediatric primary care (PPC) is another service system that provides developmental and health services for infants and toddlers. PPC providers (e.g., pediatricians, nurse practitioners) are involved in a wide range of services to promote children's health and development, such as the provision of preventative care (e.g., well-child visits), illness treatment, various screenings (e.g., vision, hearing, developmental), and monitoring for appropriate nutrition and growth (Williams & Okamoto, 2016). For infants and toddlers specifically, PPC providers are heavily involved in administering early developmental screening, providing appropriate referrals to early intervention and education services, and encouraging positive parenting practices and strategies to promote school readiness. The American Academy of Pediatrics (AAP) recommends the following schedule for well-child visits during infancy and toddlerhood: one week, one month, two months, four months, six months, nine months, 12 months, 15 months, 18 months, 24

months, 30 months, and 36 months (AAP, 2023). Attendance at these visits is especially important for infants and toddlers from low socioeconomic backgrounds who are at greater risk for developmental delays and health conditions. However, recent data suggested that only about 65% of low-income infants and toddlers attended six or more well-child visits in the first 15 months of life, when a total of nine visits are recommended (Centers for Medicare and Medicaid Services, 2021).

Within healthcare systems, a medical home is considered the goal standard of care for both children and adults (Turchi et al., 2014). Specific to children, the AAP first described the medical home in 1967 as “a central location for children’s medical records” (Sia et al., 2004) and has expanded this definition over time to be “an approach to providing comprehensive and high quality primary care,” demonstrating the conceptualization change from a place to a process. The medical home is further defined as accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally effective (AAP, 2004). The establishment of medical homes for all children has been highlighted as a national priority since the passage of the Patient Protection and Affordable Care Act in 2010. Medical home evaluations have shown that this model is associated with reductions in emergency department utilization and outpatient care (Saynisch et al., 2021), increased patient satisfaction (Rosenthal, 2008) and health-related quality of life (John et al., 2020), improved access and quality of care, and reduced healthcare costs (Christensen et al., 2013).

Guiding Practices for Home Visiting and PPC

Two key guiding practices for effective care within home visiting programs and the medical home model are culturally responsive, family-centered care and coordinated care. By integrating care across services and tailoring it to each family’s unique needs, these practices

help improve outcomes for infants, toddlers, and their families, ensuring a more holistic and supportive approach to care.

Culturally Responsive Family-Centered Care

Both home visiting programs and PPC are informed by family-centered practices. Family-centered care has been defined as a standard of practice that promotes the health and wellbeing of children and their families by building family-professional partnerships that demonstrate respect for families' strengths, perspectives, and contributions (Dunst, 1997; Wells et al., 2015). It encourages building on family strengths, valuing the expertise each partner brings to the table, promoting shared decision-making, and cultivating trust. Additionally, family-centered care facilitates open communication and honors the cultural diversity that each family brings, ensuring that care is not only effective but also culturally sensitive and inclusive (Bishop et al., 1993; Wells et al., 2015).

Family-centered care principles are at the heart of home visiting programs' theory of change (Raikes et al., 2014). Central to child-development-focused home visiting is a two-generational approach in which home visitors' primary role and responsibility is to educate and foster parents' promotion of their children's development and health (Manz, 2012). Home visitors set collaborative goals and make decisions with parents and connect family members to additional necessary resources, all with the primary intent to formulate a parenting and home environment that optimizes child development and health. Using data from a national evaluation of EHS home visiting, Raikes and colleagues (2014) empirically demonstrated that child language outcomes are mediated by parenting enhancements. Likewise, family-centered care principles are demonstrated by PPC providers when they recognize families as the experts on their children's care, support families in making decisions, and consistently communicate clear

and unbiased information (AAP, 2004). Implementing family-centered care practices in the pediatric setting has led to increased patient/family and staff satisfaction, quality of family-provider communication, and cost-effectiveness, illustrating positive effects at the individual- and systems-levels (Eichner & Johnson, 2012; Wells et al., 2015).

Though both home visiting and pediatric service provision is rooted in family-centered practices, there is a recognition that these practices can be improved upon with training. Peterson and colleagues (2021) found that interactive learning methods, such as role-playing activities, were linked to enhanced knowledge of family-centered care practices, particularly in relation to communication strategies within pediatric healthcare teams. Similarly, Miller and colleagues (2016) found that when training pediatric resident physicians about patient-centered care using didactic materials and interactive training components (e.g., case vignettes), the residents reported that the training helped them think differently about the cases and increased their motivation to become more patient-centered. In addition, training an interprofessional team on family-centered practices has yielded positive effects for provider knowledge and self-efficacy (Laird-Fick et al., 2011).

Given that family-centered care honors families' cultures, traditions, and values (Bishop et al., 1993), the provision of such care requires that professionals acquire cultural competence and humility to serve children and families from various cultural backgrounds. According to Cazalda and Suarez-Balcazar (2014), cultural competence is defined as “an ongoing, contextual, dynamic, experiential and developmental process that impacts one’s ability to understand, communicate with, serve, and meet the needs of individuals who look, think, and/or behave differently from oneself” (p. 3). Cazalda and Suarez-Balcazar integrated three key dimensions of cultural competence development in their model: a) critical awareness of one’s biases and

knowledge of specific cultural groups, b) skills development focused on effective communication with diverse children and families, and c) the organizational support necessary to implement culturally competent practices. Similarly, cultural humility incorporates self-reflection of personal biases and assumptions, active listening to others' cultural narratives, and partnership-building with others from diverse backgrounds. Development of cultural humility requires that professionals continuously engage in conversations with the individuals they serve to learn from them and develop shared goals (Tervalon & Murray-Garcia, 1998). Professionals who develop cultural competence and humility are well prepared to implement family-centered practices with families from a variety of cultural backgrounds.

The development of cultural competence has been highlighted as a need for both early childhood development professionals (e.g., home visitors; Banerjee & Luckner, 2014) and PPC providers (Like, 2011), as both types of professionals serve diverse populations. In a survey examination of 574 early childhood development professionals (e.g., home visitors, early childhood education teachers, early intervention providers), Banerjee and Luckner (2014) found that participants identified the following as some of their top training needs related to working with culturally diverse families: strategies to collaborate, methods for sharing assessment results, methods for collaborating with other professionals serving the child, and creating supportive environments that communicate value for children's and families' cultural heritage, traditions, and values. Likewise in pediatrics, cultural competence has been identified as a training need at both the individual and systems levels. At the individual level, Macdonald and colleagues (2009) conducted focus groups with both pediatric resident and attending physicians; findings revealed that these providers expressed a need for training on 1) specific knowledge on different cultural groups, 2) skills and strategies for engaging in interactions with patients of different cultures, and

3) individual differences within cultures. At the systems level, a variety of federal and state regulations promote culturally competent healthcare service provision in the United States, indicating that the need for medical providers to partake in cultural competence training is widely acknowledged (Truong et al., 2014).

Coordinated Care

In addition to family-centered practices, coordinated care is a goal of both home visiting and medical home models. The AAP (2004) described coordinated care as having 1) a plan of care that is shared among a child's providers, 2) an accessible central database that contains all medical information, 3) a physician's explanation for any referrals to other providers, 4) physician assistance with communicating clinical issues to referred providers, 5) linkages to family support groups and other resources, 6) consistent implementation of recommendations among providers, and 7) collaboration with educational and other community organizations to ensure consistency across systems. Effectively coordinated care within a medical home has significant implications for child outcomes, including increased accessibility to satisfaction of necessary services, improved overall health, and greater quality of life (McAllister et al., 2007; Turchi et al., 2009). It has also been shown to reduce the frequency of patient hospitalizations (Cooley et al., 2009), school absences, and out-of-pocket healthcare expenses (Turchi et al., 2009).

The empirical support for the benefits of care coordination within pediatric medical homes is compelling, though limited research has focused on the infant and toddler population specifically (Manz et al., 2019; Paradis et al., 2013). However, this population is in need of effective care coordination given that approximately one quarter of United States children experience developmental delays (U.S. Census Bureau, 2019). Developmental delays often affect

multiple areas (e.g., expressive language, fine motor skills) indicating a potential need for multiple service providers across systems. Further, the rate of developmental delay increases with poverty level, with recent estimates showing that young children experiencing deep poverty (i.e., below 50% of the federal poverty line) are almost three times as likely to have a developmental delay. Children who experience poverty (i.e., 50% to 99% of the federal poverty line) or low-income conditions (i.e., 100% to 199% of the federal poverty line) have about a 50% increased chance of having a developmental delay (Nguyen et al., 2020). In addition, approximately 80% of children with a developmental delay have co-existing medical conditions and needs (Child and Adolescent Health Measurement Initiative, 2010), with the same pattern across income groups. However, those experiencing deep poverty have an even greater rate of having a physical medical condition, at about four times the rate of non-poor children (Nguyen et al., 2020). With high rates of both developmental delay and co-occurring medical conditions in this population facing disproportionate rates of poverty, it is critical that effective care coordination practices are empirically identified to promote optimal development and health outcomes.

In addition to the medical home model, home visiting program models frequently aim to promote coordinated care with community agencies, although empirical guidance for effectively doing so is lacking (Manz et al., 2020). Head Start (HS)/EHS performance standards (OHS, 2016) reflect an emphasis on building mesosystem relationships (Bronfenbrenner, 1977) to support child development. Specifically, the performance standards emphasize the establishment and maintenance of collaborative partnerships between HS/EHS and community organizations such as healthcare systems, school districts, and cultural institutions (USDHSS, 2016). These performance standards are rooted in evidence that service integration and collaboration across

agencies promotes efficient, non-duplicative, and effective service delivery (Roberts et al., 1996). Such positive mesosystem influences show promise in mitigating the damaging effects of poverty on early childhood development.

Although both the medical home model and home visiting models seek to achieve coordinated care, evidence suggests that such coordination is not regularly occurring. In a national survey evaluation of 80 home visitors, Paradis and colleagues (2018) found that only 38% of home visitors reported having frequent contact with children's PPC provider, and most (80%) of this contact was via phone as compared to in-person (17%). The lack of consistent care coordination between home visiting and PPC is likely due to the lack of empirical guidance for effectively doing so (Manz et al., 2020; Paradis et al., 2018).

There is preliminary evidence to suggest that the goal of coordinated care between home visiting and PPC can be achieved by promoting aligned practices in a colocated setting. Sides and Baggett (2015) reported anecdotal results of a case study that involved the integration and co-location of home visiting within a primary health care setting. As part of the co-location agreement, all PPC patients' medical teams included a home visitor, and home visitors and PPC providers engaged in a variety of aligned responsibilities including 1) using the same standardized measurement and developmental screening tools, and 2) using shared electronic health records. The researchers anecdotally reported that this care coordination yielded several benefits, including reduced patient risk factors for health conditions, reduced costs related to emergency department visits, and reduced duplication of efforts and services. Similarly, Linton and colleagues (2018) effectively coordinated care between home visiting and PPC through co-located services that included referrals from PPC providers to on-site home visitors who provided parenting, behavior, and development support for PPC patients and families. In

addition, patients with more intense needs were referred for in-home home visiting support. The researchers anecdotally reported that this model of coordinated care led to increased home visiting referral rates and PPC provider familiarization with positive parenting techniques.

Altogether, these studies show preliminary promise for effective care coordination between home visiting programs and PPC that exist in a colocated setting. However, a variety of methodological weaknesses exist. Researchers collectively did not detail their methods to promote replication or use strong and varied evaluation methods, highlighting the continued need for empirical guidance in effectively coordinating care between home visiting programs and PPC. In addition, while these researchers underscored the potential of improved coordination when agencies are colocated, additional opportunities for direct interprofessional collaborations remained unexplored. As such, there is a continued need to focus on providing concrete strategies for fostering these direct collaborations, as they are likely to be crucial for enhancing care coordination and optimizing outcomes for families (Cooper et al., 2016).

Interagency Training

Interagency training has been identified as a promising solution for achieving culturally responsive, family-centered coordinated care between home visiting programs and PPC. Formally defined as providing “structured opportunities for personal, professional and organizational development for groups of multi-agency professionals... to gain a greater understanding of roles and constraints and to promote and develop effective working relationships” (Horwath & Morrison, 1999), interagency training fosters collaboration by enhancing communication, aligning goals, and addressing barriers that may hinder the integration of services across agencies. This shared learning environment allows professionals to better understand each other’s perspectives, improve problem-solving capabilities, and ultimately

create a more cohesive, coordinated approach to care that benefits families and ensures that services are comprehensive and culturally responsive.

Interagency training designed for home visitors and PPC providers could be a viable solution for achieving culturally responsive, family-centered care coordination for infants and toddlers who experience socioeconomic disadvantage. Paradis and colleagues (2013) first introduced interagency training as a component of coordinated care between home visiting and PPC. Researchers integrated a home visiting program and PPC, without co-location, by implementing 1) weekly interagency meetings to discuss families' goals and treatment plans, 2) team building activities, and 3) inclusive staff training for both medical and home visiting professionals. A home visiting program pediatric social worker was responsible for uploading comprehensive family assessment and service plans into children's electronic medical records for the purposes of sharing information across agencies. Home visiting professionals were also able to monitor families' adherence to well-baby visit recommendations through access to these records. Furthermore, pediatric residents at the PPC site participated in community health rotations by accompanying home visitors on their visits. The randomized controlled trial conducted as part of this intervention revealed that children in the coordinated care model had significantly higher attendance at well-baby visits compared to those in a control group. This finding underscores the effectiveness of interagency collaboration in improving healthcare access and outcomes for vulnerable populations, demonstrating that coordinated care can promote better engagement in preventive health services.

A more recent study conducted by Grant and colleagues (2019) showed additional promise for interagency training between health and development service systems. Specifically, researchers sought to build a community partnership between HS/EHS and medical homes for

young children from low-income households. Their processes included creating a screening protocol and tracking system for the identification of children who met eligibility criteria for HS/EHS programs, developing a specific referral process from medical homes to HS/EHS, and providing a one hour training session led by the primary researcher and an EHS program manager to medical providers focused on the importance of early childhood education programs and HS/EHS eligibility requirements and referral procedures. Following the intervention, HS/EHS eligibility screening rates rose from 7.6% to 46.4% of children seen during pediatrician visits, and HS/EHS referral rates rose from 1.3% to 20% within one year. Thus, this study is a demonstration of how interagency training can improve young children's accessibility to services aimed at promoting healthy development and school readiness.

To date, the Paradis et al. (2013) and Grant et al. (2019) studies are the only two to examine interagency training between home visiting programs and PPC. However, these studies fell short in describing the specific methods for integrating agencies and creating a seamless collaboration. Paradis et al. (2013) did not provide details about their training content or procedures, leaving a gap in the literature regarding how to effectively conduct interagency training. Similarly, Grant et al. (2019) focused their training primarily on improving the use of a newly developed referral system, which targeted increasing referral rates between PPC providers and HS/EHS programs. While this approach likely proved effective, given the evidence that PPC providers and families have limited knowledge of the resources offered by HS/EHS programs (Saoud et al., 2022), the broader process of integrating these agencies and ensuring long-term collaboration remains underexplored. What is missing from current research is a detailed procedure for how to bring together different agencies, align their practices, and foster the sustained partnerships necessary for effective care coordination. Thus, additional studies are

needed to describe the practical steps involved in agency integration and to provide actionable guidance on the process of collaboration across sectors.

While increasing PPC referral to EHS is valuable, interagency training presents a context for training in additional crucial areas of knowledge and competencies expected for providers in both service systems. Notably, in a qualitative study conducted by Saoud and colleagues (2022), which involved HS/EHS coordinators, medical providers, and parents, the researchers found that both HS/EHS staff and medical providers reported that they struggled with communication. Medical providers specifically reported having a limited understanding of HS/EHS, which contributed to fewer referrals. Additionally, parents in the study indicated that they were more likely to consider enrolling their child in HS/EHS if their pediatrician discussed the program. This highlights the need to increase PPC providers' knowledge of HS/EHS. Interagency training could be a potential solution to such a problem, as the training could focus on interdisciplinary communication and knowledge-sharing between providers. For home visiting and PPC specifically, an interagency training could focus on promoting communication between home visitors and PPC providers during well-baby visits, agency-specific case conferences, or in shared records. By bringing together PPC and HS/EHS professionals in a structured training environment, both groups could gain a deeper understanding of each other's roles, services, and the specific needs of families. This collaborative approach would not only improve communication but also enhance the referral process, ensuring that families receive timely and appropriate services. Moreover, such a training could promote home visitors' and pediatricians' learning to communicate with one another, while also equipping home visitors with skills to facilitate parent-PPC provider communication. Given the agencies' shared goal of providing culturally responsive, family-centered services, interagency training could focus on social

determinants of health and strategies for engaging diverse families. This focus on cultural competence is particularly important, as training in this area has been identified as a need for both pediatric primary care providers (Like, 2011) and early childhood professionals, including home visiting staff (Banerjee & Luckner, 2014).

Facilitators and Barriers. A variety of facilitators and barriers to interagency collaboration between child service systems have been identified in the literature. In regard to facilitators, Cooper and colleagues (2016) conducted a systematic review and found the following were effective in promoting success in interagency collaboration among child service systems serving children and adolescents with emotional, behavioral, and mental health difficulties: an accurate understanding of the other agency's professionals' services and roles, an emphasis on family-centered care, staff willingness to work together, trust and mutual respect across agencies, transparent and frequent communication between agencies, joint training, and adequate funding, time, and space to support interagency collaboration. Identified barriers were simply the opposite of the facilitators (e.g., lack of communication) as well as a lack of management support. Though this systematic review did not include study of the interagency collaboration between home visiting and PPC specifically, it can be inferred that many of the same facilitators and barriers exist for these two systems. Similarly, through a subset of interviews with individuals from a variety of health and social care professions (e.g., medicine, occupational therapy, social work), Baker and colleagues (2011) found that the perception and experiences of power imbalances pose barriers to successful interprofessional education contexts with physicians. Specifically, non-physician participants of the study shared frustrations about physicians assuming a leadership position, determining the culture of a group working together, and avoiding situations that threaten their prestige (e.g., engaging in shared decision making with

other professionals). Further emphasizing this point, physicians in the study shared that their years of training and extent of monetary investment into their careers justified their position of power in interprofessional education contexts. Despite these challenges, non-physician participants reported that engaging in interprofessional education with physicians helped them feel more valued and respected, as it allowed them to showcase their own expertise and skills. Although home visitors were not specifically included in this study, a similar power imbalance is likely to exist between physicians and home visitors, given the comparable disparity in training levels (Baker et al., 2011).

With these findings in consideration, an effective interagency training between these two agencies should integrate emphases on 1) family-centered care practices and their application to services in both agencies, 2) clearly defining the roles and responsibilities of each agency, 3) garnering staff and administrator willingness to collaborate by incorporating individual agency needs and goals within the training, and 4) promoting opportunities for ongoing communication and collaboration in natural environments that do not require extensive resources. This should be approached in a way that ensures professionals from both home visiting and PPC agencies have equal opportunities to contribute, share their expertise, and learn from each other. Thoughtful consideration of leadership roles is crucial to minimizing power imbalances that may naturally emerge.

Linking for Little Ones Interagency Training Program

Although interagency training has shown success with a variety of populations, research on this type of training with agencies serving infants and toddlers is extremely limited. As such, additional research on the 1) processes and procedures that facilitate successful creation and implementation of interagency training between home visiting and PPC serving low-income

infants and toddlers and 2) the outcomes of interagency training for professionals from both agencies is necessary. To fill these gaps, *Linking for Little Ones (LLO; USDHHS 90YR0170)* was developed as a usable interagency training for home visiting programs and PPC. The goal of the training was to enhance collaboration and foster sustained partnerships between home visitors and pediatricians by creating a space for mutual engagement that addresses their shared needs as service providers for the same population. Specifically, LLO aimed to improve home visitors' and pediatricians' mutual understanding of each other's service systems and their professional roles, and responsibilities. This enhanced understanding could lead to more effective service delivery across both agencies. For example, home visitors' increased knowledge of pediatric primary care systems and pediatricians' roles could help them better facilitate communication between the parents they serve and their children's pediatricians. Similarly, pediatricians' greater awareness of home visiting programs and home visitors' roles could lead to higher rates of identification and referral for eligible infants and toddlers. An additional goal of LLO was to create a collaborative training environment where both home visitors and pediatricians engage in reciprocal learning around culturally responsive, family-centered care—principles that are vital to the service provision in both agencies. A secondary purpose of the current study was to evaluate the outcomes of a pilot implementation of LLO, specifically focusing on home visitors' reported usability of the program, their comfort level in guiding families on health topics, and their competencies in engaging in interprofessional collaborations with pediatricians. Additionally, the study assessed PPC residents' gains in knowledge related to home visiting, family-centered care, and partnering effectively with home visitors.

The primary author led the development of the LLO interagency training in collaboration with representatives from four community agencies, two EHS programs and two pediatric residency programs, to develop and pilot LLO (USDHHS 90YR0170). Each EHS program had an established partnership with one of the pediatric residency programs, focused on regularly scheduled training sessions that introduced first-year pediatric residents to EHS. Although the training models at each site differed, they shared a common goal of providing training specifically designed for the pediatric residents' learning.

A key framework appropriate for guiding the development and implementation of LLO was the Participatory Intervention Model (PIM; Nastasi et al., 2000). The PIM emphasizes active collaboration between researchers and community stakeholders throughout the entire research process, comprising three distinct phases: participatory generation, natural adaptation, and essential changes (Table 1). By emphasizing adaptability and continuous collaboration, the PIM ensures that the intervention remains responsive to the needs of the community and that it evolves based on feedback. In this model, community partners “come to view the intervention as their own creation and take responsibility and control over the intervention process,” leading to enhanced sustainability and institutionalization of the intervention (Nastasi et al., 2000, p. 209). In each of the following PIM phases, the lead researcher sought to introduce the interagency model of training and collaborate with each agency administrative representative to transform the existing training models into LLO.

Participatory Generation Phase. The goal of the participatory generation phase is for partners to collaborate in defining the intervention’s goals and ensuring the structure and content of the intervention align with those goals. During this phase of LLO development, the lead researcher initially facilitated meetings with administrative representatives from the agency

partners to learn more about the existing goals and structure for training, as well as the program administrators' perceptions of the strengths and weaknesses of their current training models. In these meetings, the lead researcher learned that the existing training models were primarily didactic and observational. They included a lecture-style introduction to EHS and observations of staff meetings focused on families, home visits, and center-based care. At one of the EHS sites, the training lasted three hours and was repeated several times throughout the training year to ensure all residents participated. At the other EHS site, the training lasted one and a half days, with additional opportunities to learn about Head Start and center-based care embedded throughout the experience.

Given the existing training models were already in place for the participating agencies, the discussion during the meeting centered on transitioning to an interagency training model in which both EHS home visitors and pediatric residents would engage in reciprocal learning. The EHS administrative representatives expressed interest in providing home visitors the opportunity to share their expertise, while the pediatric residency program representatives shared excitement about adding more hands-on, interactive learning. All representatives agreed to collaborate in developing the LLO interagency training program with three primary goals: 1) to enhance mutual understanding of each other's service systems, roles, and responsibilities, 2) to improve competencies for interprofessional collaboration, and 3) to increase knowledge of family-centered care approaches in both home visiting and pediatric primary care settings.

After these initial meetings, the lead researcher attended several training sessions at both EHS sites to observe the existing models and procedures. This provided an opportunity to identify areas where the training could be adapted to align with an interagency approach. Additionally, the lead researcher participated in a community dialogue during a series of staff

meetings with approximately 75 EHS employees across both sites to gather their perspectives on collaborating with pediatricians and residents, facilitating parent-pediatrician interactions, addressing parents' health and development concerns, and identifying key topics they believed should be taught to pediatric residents. The responses were summarized and shared with administrative representatives to inform the development of LLO (Table 2).

LLO materials were developed by adapting existing resources to create more opportunities for bidirectional discussion, enabling home visitors and pediatric residents to share insights into their roles and responsibilities within pediatric primary care. The lead researcher presented initial ideas for these adaptations and received feedback from the EHS administrative representatives before moving forward with implementation. The final LLO components included: 1) Interactive Instruction, 2) a Collaborative Case Study discussion, 3) a Dual Discussion of Families, and 4) a Reflective Debriefing session (Table 3).

The first component, an Interactive Instruction presentation on home visiting, involved home visitors as trainers. In addition to covering basic EHS information, the presentation (Appendix A) highlighted the shared goals between home visiting programs and pediatric primary care, EHS's efforts to support family engagement in pediatric services, and the pathways for collaboration between the two systems (e.g., referral procedures and communication options with home visitors). The training was designed for both EHS home visitors and pediatric residents to attend together. While both pre-existing training models included a didactic educational component led by EHS administrators, the interactive instruction enriched the learning experience by involving home visitors in teaching parts of the content and sharing personal experiences from their work with families. Pediatric residents were encouraged to ask questions throughout the session and contribute information on topics such as family-centered

care and health systems, relating them to the training content. Notably, this component helped pediatric residents, who often reported being unaware of home visiting programs before their involvement in LLO, better understand the context for the subsequent training components.

The second component of LLO was the Collaborative Case Study discussion, a new addition to the training that was not part of either pre-existing model. One of the EHS administrative representatives provided a de-identified case of a family previously served by EHS, which became the focal point of this component. The case study included a genogram and several key details about the family. Participants—home visitors and pediatric residents—were divided into small groups, each including at least one home visitor and one pediatric resident, to discuss the case and address four key questions: 1) How would you approach a home visit or well-child visit with this family? 2) What additional information would you want to gather? 3) What might be your first recommendation for this family? and 4) How would you incorporate the family's strengths, culture, and values into your visit? These questions were designed collaboratively to highlight the three primary training goals.

Through the small-group discussions, both home visitors and pediatric residents engaged in interprofessional teaching, sharing insights about their day-to-day work with families. This exchange allowed participants to better understand the structure of each other's visits (i.e., home visits vs. well-child visits) and explore how family-centered care principles are applied in each context. After the small-group discussions, a member of the research team and the EHS administrative representative facilitated a larger group discussion with the following prompts: 1) What was different about your proposed approaches for this family? and 2) Did your partner or group make you think about something new that you had not considered before? These questions were designed to encourage reflection on how the roles and responsibilities of home visitors and

pediatric primary care providers might align or differ, despite their shared goal of promoting the health and development of infants and toddlers. The second question, in particular, was meant to spark the sharing of new knowledge and ideas for integrating family-centered care practices into service delivery.

The third component of LLO was a 60-minute Dual Discussion of Families, in which a home visitor presenter, along with additional administrators from the EHS program, reviewed updates on current families served by the presenter and developed individualized action plans for each family. This was a pre-existing routine practice at EHS, whereby home visitors rotate through presenting about their families at regular intervals throughout the year. At one pair of partnering agencies, pediatric residents had previously been invited to attend these discussions as part of their EHS training, although they primarily served in an observational role. The newly developed instructions for pediatric residents were as follows: "You will hear about several families currently being served by Early Head Start. As you listen, 1) consider what additional questions you might have about the family, and 2) think about what you might recommend for the child/family if the child were your patient. Please share your expertise." To facilitate pediatric resident engagement, home visitor presenters were instructed to pause frequently after sharing information and invite questions or recommendations from the residents. This component of LLO enabled further joint sharing of knowledge between home visiting program professionals and pediatric residents. Home visitor presenters provided detailed insights into their work with real-life families, while pediatric residents shared their expertise on health and development (e.g., when to seek care for vision concerns) and the structure of pediatric service systems (e.g., how to request to see the same pediatric provider across multiple well-child visits).

The final component of LLO was a 30-minute reflective debriefing session with pediatric residents, led by a member of the research team. Due to a conflict between the time allotted for training and home visitors' responsibilities at the time of the debrief, home visitors did not attend the debrief as part of their participation in this study. The training was scheduled to fit within the pre-existing time frame as requested by the administrative partners, and although home visitors were present for all other LLO components, they had other responsibilities, such as home visits, that took precedence at the time of the debrief. During the session, pediatric residents reflected on what they learned through their involvement in LLO. The debriefing was structured around three main questions designed to gather insights on the residents' takeaways and how they might apply their new knowledge: 1) What are three things you learned in today's training? 2) How might you apply a therapeutic stance or family-centered care in your work with families? and 3) After today's training, how has your perspective on partnering with home visitors changed? The debriefing session aimed to consolidate learning, enhance understanding of the collaboration between pediatric residents and home visitors, and allow for final reflections on how the training might impact their future practice.

Natural Adaptation Phase. During the natural adaptation phase of LLO development (Nastasi et al., 2000), LLO was implemented and modified to meet the specific needs of the participating agencies. One of the most significant needs expressed by the partners was to maintain the time commitment established by the existing training model. As a result, LLO was designed to fit within the designated time frame, aligning with the natural context of training between EHS and the pediatric residency program. Additionally, the residency program chose to maintain a consistent workload for pediatric residents, which did not allow them to complete research questionnaires as part of their participation in the current evaluation of LLO. To address

this, the lead researcher developed a structured set of three predetermined questions for the Reflective Debriefing session. These questions were designed to guide the discussion and elicit insights into the residents' knowledge gains after participating in LLO.

Initially, LLO was conceptualized to include direct teaching from both home visitors and pediatric residents. However, after engaging in community dialogue with home visitors to identify areas of interest for learning from pediatric residents, it was repeatedly reported that home visitors felt confident in their knowledge of health and development, and they were most eager to take on teaching roles within the LLO framework. Given this feedback, along with the time limitations of the training, the decision was made to remove the pediatric residents' direct teaching component. Instead, multiple opportunities were integrated throughout the training for pediatric residents to share their expertise, insights, and experiences related to their professional practice.

After three implementations of LLO, the lead researcher shared preliminary summarized data from the reflective debriefing session with agency partners. During this meeting, the partners agreed that it would be valuable to assess pediatric residents' knowledge before the training, as well as after, to better understand their specific gains. As a result, they collaborated to develop a prebriefing, which served to set the stage for the educational content of LLO. The main objectives of prebriefing focus on preparation, whereby learners are introduced to the educational content of the training experience. Prebriefing has also been identified as critical for promoting a productive debriefing session (International Nursing Association for Clinical Simulation and Learning [INACSL] et al., 2021). Sharing the importance of prebriefing with the EHS administrative partners helped further justify its inclusion. The final prebriefing experience was centered around asking pediatric residents to respond to three questions, which included: 1)

What do you know about Early Head Start? 2) How do you incorporate family-centered care practices in your work with families? and 3) How do you, or how would you, partner with a community service provider working with your patient? These questions were intentionally aligned with the reflective debriefing questions to provide a clear comparison of knowledge before and after the training.

Essential Changes Phase. The final phase of Nastasi and colleagues' (2000) PIM focuses on evaluating the effectiveness of the intervention, including assessing effectiveness, implementation, and acceptability. This is achieved through measuring targeted outcomes for participants, fidelity, and participant feedback on usability. A key aspect of this phase is empowering community partners to take ownership of the intervention, which is essential for ensuring its sustainability and institutionalization. To achieve the objectives of this phase, the lead researcher worked closely with partnering administrative representatives to identify the outcomes of interest for participants and to develop and adapt measurement tools for these outcomes, as well as for fidelity and usability.

Purpose of the Current Study

The purpose of the current study was to conduct an initial evaluation of LLO effectiveness and acceptability (Nastasi et al., 2000) which took at one site, involving one EHS and one pediatric residency program. This site's readiness for implementation and the scope of pediatric residency program allowed for a larger sample size of participants, yielding the most robust preliminary evaluation of LLO.

Research Questions and Hypotheses

To gain a deeper insight into the outcomes of participation in LLO, the study addressed the following research questions.

Research Question 1 (RQ1). Do home visitors demonstrate increased self-reported comfort in guiding families about infant/toddler health topics immediately following the completion of LLO and at a one-month follow-up assessment?

Hypothesized Results for RQ1. It is expected that home visitors will report increased comfort levels in guiding families about health topics, as illustrated by medium to large effect sizes (Cohen's $d = 0.5$ to 0.8) when comparing scores pre- and post-LLO. However, no change is expected between post-LLO and the one-month follow-up, as scores should be maintained between these timepoints.

Research Question 2 (RQ2). Do home visitors demonstrate increased self-reported competencies to engage in interprofessional collaborations with pediatricians immediately following the completion of LLO and at a one-month follow-up assessment?

Hypothesized Results for RQ2. It is expected that home visitors will report increased competencies to engage in interprofessional collaborations with pediatricians, as illustrated by medium to large effect sizes (Cohen's $d = 0.5$ to 0.8) when comparing scores pre- and post-LLO. However, no change is expected between post-LLO and the one-month follow-up, as scores should be maintained between these timepoints.

Research Question 3 (RQ3). Do home visitors perceive LLO as usable, as indicated by endorsing the program as acceptable, readily understood, feasible, appropriate for independent engagement, and as aligning with EHS climate and collaborative practices?

Hypothesized Results for RQ3. LLO will be developed in partnership with representatives from home visiting programs and PPC, who will ensure that each agency's needs, values, and goals in addition to preferred methods of training (e.g., time, duration, modality) are

incorporated. As such, it is expected that EHS home visitors will rate usability dimensions favorably.

Research Question 4 (RQ4). What gains in knowledge are reported by pediatric residents immediately following the completion of LLO?

Hypothesized Results for RQ4. It is expected that pediatric residents will report gains in knowledge of home visiting services, opportunities for coordinating with home visiting programs, and application of family-centered care principles to healthcare service provision. Gains will be illustrated by pediatric residents' responses to questions prompted during the prebriefing and debriefing sessions.

Chapter 2: Methods

Participants

This evaluation of LLO included EHS home visitors and pediatric residents from a single site as study participants. In addition to these participants, the original intention was to recruit parents of children enrolled in EHS to elicit their perspectives on LLO development. However, challenges at the systems level prevented this process, and as a result, parents were not included.

Home Visitors

A total of 10 child development-focused home visitors from an EHS program participated in the current study. The majority of professionals identified their current role as a home visitor ($n = 7$; 70%), with smaller subsamples indicating their current role was lead home visitor ($n = 1$; 10%) and health educator ($n = 2$; 20%). Health educators were home visitors whose primary roles were to support pregnant mothers through the birth of their children as opposed to supporting parents after the birth. All (100%) professionals identified as female. Most

professionals identified as Black (60%). The remaining professionals identified as White (20%) and Asian (20%). Additional demographic information is available in Table 4.

Pediatric Residents

A total of 41 first-year pediatric residents participated in the current study. All pediatric residents were graduates of a U.S. or Canadian medical school or they must have completed one year of post-medical school clinical training in a U.S. hospital. Additional demographic information for pediatric resident participants was not available.

Setting and Recruitment

The EHS and pediatric residency program were both located in an urban area of the northeastern region of the United States and were integrated within the same children's hospital system.

Aligned with Head Start Performance Standard 1302.12 (USDHHS, 2016), the participating EHS program served pregnant women and families with children aged birth to three-years-old. Most of the families served were eligible due to income at the federal poverty line or below. The program employed 10 home visitors who provided a variety of services including 90 minute weekly home visits, parent-child socialization groups, prenatal education, and health and nutrition education. The focus of all services was on supporting parents to promote their children's development.

The participating pediatric residency program provided a comprehensive three-year, full-time general pediatrics training, with focused experiences in primary care, hospital medicine, subspecialty care (e.g., pulmonary, endocrinology), and acute care. Annually, the program admitted approximately 55 new residents. During the first year, residents participated in a Developmental Behavioral Pediatrics rotation, which included learning experiences with various

community resource programs, such as EHS. Each year, groups of five residents rotated through EHS training on an approximately monthly basis.

Following the adaptation of the preexisting training into LLO, all home visitors were invited to attend LLO by administration at EHS for professional development. Participation in the evaluation of LLO was invited by members of the research team. When EHS home visitors attended LLO, a member of the research team reviewed the study purpose, invited them to participate, and obtained informed consent. Once consent was obtained, the lead researcher confirmed the date and time for training with the home visitor.

Pediatric residents were recruited to participate in the current study upon their arrival at EHS for their participation in LLO as part of their residency program requirements. When they arrived at their scheduled training, a member of the research team recruited them to participate in the evaluation of the training and reviewed the study's purpose and obtained informed consent. Of note, all recruited pediatric residents participated in the current study. The remaining 14 residents from the current training cohort will be invited to participate in future pre-scheduled LLO implementations.

Measures

Home Visitor Measures

Health Topic Comfort Level Questionnaire. The lead researcher developed a questionnaire to measure participating home visitors' comfort level in guiding families about different health topics. The first six items were chosen based on the AAP's (2018) Schedule of Well-Child Care Visits which includes "check-up checklists" designed to prepare parents for each of the recommended well-child care visits from the first week visit to the final visit at 21-years-old. The check-up checklists for infants and toddlers emphasize the immunizations,

screenings, feeding, toileting, development, and safety topics that parents should prepare to answer and ask about at the visits. As such, the six items on the Health Topic Comfort Level Questionnaire addressed these topics as well. For each item, home visitors were asked to rate their agreement with the following statement: “I am comfortable guiding families about...” The six items included 1) getting their children vaccinated, 2) crib and sleep safety, 3) feeding routines and nutrition, 4) dental care for their children, 5) potty training, and 6) assessing their children’s hearing and vision. Home visitors rated their agreement with each item using a 6-point Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *agree*, 6 = *strongly agree*).

One additional question was added to the end of the questionnaire to assess home visiting program professionals’ comfort level in guiding families to interact with their children’s pediatrician. Participants rated their comfort level on a 6-point Likert scale (1 = *very uncomfortable*, 2 = *uncomfortable*, 3 = *slightly uncomfortable*, 4 = *slightly comfortable*, 5 = *comfortable*, 6 = *very comfortable*). See Appendix B for the full measure.

This measure was administered at three timepoints: pre-LLO, post-LLO (i.e., immediately after participation), and at a one-month follow-up. Internal consistency was determined by calculating Cronbach’s alpha (1951), with values ranging from 0.74 to 0.91, indicating acceptable internal consistency (Table 5). For all items, means and standard deviations were calculated. Mean rating scores were used for analyses.

Interprofessional Collaboration Competencies Attainment Survey (ICCAS). The ICCAS-LLO was adapted from the ICCAS (Archibald et al., 2014; see Appendix C) to assess home visitors’ self-reported competencies to guide interactions between families and pediatricians. For the ICCAS-LLO, ICCAS items were adapted to reflect applications to home

visitors program professionals' reports on competencies in guiding interactions between parents and pediatricians, as this is more applicable to their role. For example, item seven was originally, "Work closely with interprofessional team members to enhance care." This item was adapted to "Work effectively with pediatricians and families to enhance infant and toddler care." Additionally, a few items were removed due to repetitiveness or irrelevance to interagency collaboration between pediatric and home visiting. The final measure, now referred to as ICCAS-LLO, included 10 items (See Appendix D for the full adapted measure).

The original ICCAS assesses interprofessional collaboration competencies which were developed through a Delphi study of previously identified competencies in the literature. Experts on interprofessional collaboration rated the validity of the identified competencies and their associated performance criteria and behavioral indicators (Curran et al., 2009). The original version of the ICCAS included 20 items that align with the six core interprofessional collaboration competencies (i.e., communication, collaboration, roles and responsibilities, collaborative patient/family-centered approach, conflict management/resolution, and team functioning). This original version asked respondents to rate their competencies to engage in interprofessional collaboration before and after completion of an intervention; ratings took place only following completion of the intervention using a retrospective pre-test/post-test design (e.g., Before/after participating in the learning activities, I was/am able to promote effective communication among members of an interprofessional team). Participants rated their agreement with each item using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Archibald and colleagues (2014) examined the factor structure and internal consistency of the measure pre- and post-intervention in a diverse sample of 584 participants that represented 15 different professions who were enrolled in interprofessional education or professional development

programs in New Zealand. Researchers found evidence for a two-factor structure at pre-test and a one-factor structure at post-test. The difference in factor-structure for pre- and post-assessment was attributed to the intervention leading to a more concise understanding of how interprofessional competencies are related. Nonetheless, internal consistency was high for items on each factor (i.e., pre-program factor 1 $\alpha = .96$, pre-program factor 2 $\alpha = .94$, post-program $\alpha = .98$).

In a subsequent study, Schmitz and colleagues (2017) found evidence for the reliability of the ICCAS after making two adaptations to the measure. First, they changed the Likert scale to a 5-point scale that reflected quality of ability (1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*) as opposed to agreement. The researchers felt that this scale was more appropriate for the measurement of participants' ability to engage in different interprofessional collaboration tasks. The researchers added an item to measure the participants' assessment of their change in overall ability from pre- and post-intervention. In their study with 1,023 university students, researchers found evidence for the one-factor structure found by Archibald and colleagues. This factor presented with high internal consistency ($\alpha = .96$).

For the current study, the 5-point Likert scale used by Schmitz and colleagues was utilized. This measure was administered at three timepoints: pre-LLO, post-LLO, and at the one-month follow-up. Mean rating scores were used for analyses. Internal consistency was determined by calculating Cronbach's alpha (1951). Cronbach's alpha was first used to assess the internal consistency of the 10-item scale. Across the three timepoints, alpha values ranged from 0.97 to 0.98, indicating high internal consistency (Cronbach, 1951; Table 5).

Usage Rating Profile - Intervention Revised (URP-IR). The URP-IR (Chafouleas et al., 2011; see Appendix E) was developed to measure several factors of intervention adoption and usage over time. The measure consists of 29 items. Participants rate their agreement with each of them using a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). Briesch and colleagues (2013) conducted an exploratory factor analysis and found evidence for a 6-factor structure with acceptable reliability for each subscale: acceptability ($\alpha = .95$), understanding ($\alpha = .79$), feasibility ($\alpha = .88$), home-school collaboration ($\alpha = .78$), system climate ($\alpha = .91$), and system support ($\alpha = .67$). A confirmatory factor analysis demonstrated that the 6-factor structure had acceptable fit (CFI = .96).

As the URP-IR was created to assess usability of child intervention, in this study, item content was slightly adapted to reflect the context of the LLO training without changing the measure's conceptualization of intervention usability. For example, item three was originally, "I would be able to allocate my time to implement this intervention." This item was adapted to be "Home visitors have the time to participate in Linking for Little Ones." See Appendix F for the full adapted measure, now referred to as the URP-LLO.

Factor scores for the URP-LLO were determined according to the procedures specified for the UPR-IR. The URP-LLO was administered at the post-LLO timepoint only. Mean ratings, standard deviations, and internal consistency was determined for each factor. Internal consistency varied across the factors, with Cronbach alpha values ranging from 0.51 to 0.95 (Table 5).

Demographic Survey. Home visitors reported on the following demographic variables: gender, race and ethnicity, highest level of education, current role at the home visiting program,

number of years serving in their current role, and the average number of children on their caseload that have had a disability or health condition over the past three years.

Pediatric Resident Measures

Qualitative Data. Pediatric residents did not complete the same quantitative measures as home visitors, per the residency program's request, given their already substantial workload of evaluation requirements throughout the residency training program. Instead, their knowledge gains were assessed using three open-ended prebriefing and debriefing questions developed in collaboration with EHS. The prebriefing questions were, 1) What do you know about Early Head Start?, 2) How do you incorporate family-centered care practices in your work with families, and 3) How do you, or would you, partner with a community service provider who is working with your patient? The reflective debriefing questions were, 1) What are three things you learned in today's training?, 2) How might you apply therapeutic stance/family centered-care in your work with families?, and 3) After today's training, how has your perspective on partnering with home visitors changed?

Fidelity

Fidelity measurement is the evaluation of adherence to an established intervention protocol (Mowbray et al., 2003). For the current study, fidelity was measured in terms of quantity (i.e., home visitor and pediatric resident attendance at the four training components) and content (i.e., checklist of essential LLO features; Raikes et al., 2006). Attendance across training sessions was calculated for both groups of professionals. The percentage of essential LLO features completed across training sessions was also calculated (see Appendix G for the full fidelity measure). Fidelity was assessed in person at all LLO sessions by a member of the

research team. To assess for interrater reliability, 30% of all LLO sessions were independently double-coded by a second member of the research team using video recordings of the session.

Procedures

Data Collection

Once informed consent was obtained from the home visitors, a member of the research team sent the pre-LLO study questionnaires via email, requesting that the participating home visitors complete them before taking part in LLO. All questionnaire and demographic data were collected using Qualtrics which collected and stored the data as participants completed the measures. Questionnaires took home visitors approximately 10 to 20 minutes to complete.

Once informed consent was obtained from pediatric residents, a member of the research team provided them with the prebriefing questions on paper and asked them to answer the questions.

At the start of LLO, a member of the research team reminded all consented participants that the training session would be video recorded. The researcher then began the video recording, which was paused before the Dual Discussion of Families which involved identifiable information about current children and families served by EHS. The video recording was resumed during the Reflective Debriefing session.

Following each LLO implementation, a research team member emailed the link to the post-LLO study questionnaires to each participating home visitor. The researcher then emailed the final one month follow-up study questionnaires to each participating home visitor one month from their date of participation. Of note, given the smaller number of home visitors at the participating EHS program compared to the size of the pediatric residency program, home visitors were invited to participate in LLO more than once. However, home visitors who

participated in LLO multiple times only completed the three sets of questionnaires (i.e., pre-LLO, post-LLO, one-month follow-up) for their first participation.

LLO Implementation

LLO was conducted in a room with a large conference table, where a projector displayed the visual presentation on a screen visible to all participants. The session began with each participant introducing themselves, including their name and role. After introductions, a member of the research team began to video record using Zoom. The first component, Interactive Instruction, was delivered via a PowerPoint slideshow (Appendix A) projected on the screen. The presentation was led by the EHS administrative representative, along with home visitors, who had discussed beforehand and selected which parts of the presentation they would present. During the Interactive Instruction, the EHS presenters regularly paused to ask pediatric resident participants questions and address any questions they had. Altogether, this component lasted for one hour.

Following the first component, the Collaborative Case Study discussion lasted for 30 minutes. To set up for this component, the lead researcher and EHS administrative representative split participants into small groups of home visitors and pediatric residents to discuss the case study. On the PowerPoint slides, groups were shown a genogram and provided some background information on the case study family (see Slide 22). Groups were then asked the following questions which were presented to guide their discussions amongst each other: 1) How would you approach a home visit or well-child visit with this family? 2) What additional information would you want to gather? 3) What might be your first recommendation for this family? and 4) How would you incorporate the family's strengths, culture, and values into your visit? As the groups discussed among themselves, a member of the research team joined each group to listen

to their perspectives and identify connections between what each participant shared. The researcher highlighted similarities and differences between the two roles and how they approach care, fostering a deeper understanding of each perspective.

Before the Dual Discussion of Families component began, a member of the research team paused the video recording to ensure no confidential patient information was captured. In addition, pediatric residents were provided the following instructions on the screen: "You will hear about several families currently being served by Early Head Start. As you listen, 1) consider what additional questions you might have about the family, and 2) think about what you might recommend for the child/family if the child were your patient. Please share your expertise." During this component, additional EHS staff members (e.g., managers, home visitors) joined the room. The assigned home visitor presenter started by sharing basic information about the families on their caseload, including the child's name, family composition, any unique health or developmental needs, and relevant contextual factors such as homelessness. The presenter then provided updates on the children and families, detailing the resources already provided, plans for future support or referrals, updates on doctor and dentist visits, and progress with developmental milestones. The additional EHS staff members were present to offer further insights on potential resources or activities that could benefit the child or family. This allowed pediatric residents to observe the collaborative process in action. To foster interaction, the home visitors prepared specific questions related to infant and toddler health to engage the pediatric residents during this component. They also paused throughout the presentation to naturally ask questions about infant and toddler health and to respond to any questions from the pediatric residents.

The final component, the debriefing session, took place in a separate room with only the pediatric residents and a member of the research team. At the beginning of the session, a member

of the research team resumed the video recording to document the discussion. Pediatric residents were first asked to respond to three debriefing questions: 1) What are three things you learned in today's training? 2) How might you apply therapeutic stance/family-centered care in your work with families? 3) After today's training, how has your perspective on partnering with home visitors changed? The residents first wrote down their responses to these questions individually. Once completed, the group shared their written responses aloud, taking turns to ensure everyone's voice was heard. A member of the research team facilitated the discussion, encouraging residents to elaborate on their thoughts and explore any differences in their responses. The researcher highlighted common themes and insights that emerged, fostering a deeper dialogue about the training experience. Additionally, the researcher answered any final questions the pediatric residents had, ensuring that any uncertainties were clarified and encouraging further reflection.

Evaluation Design

The current study utilized a one-group repeated measures pretest-posttest design to compare Health Topic Comfort Levels Questionnaire and ICCAS-LLO scores prior to, immediately following engagement in LLO and at one-month post-intervention. Additionally, a one-group pretest-posttest qualitative design was used to analyze pediatric residents' responses to the prebrief and debrief questions, comparing their knowledge before and immediately after engaging in LLO. Finally, a one-group posttest-only design was applied to assess home visitors' perceptions of LLO's usability, as measured by the URP-LLO.

Data Analyses

Preliminary Analyses. Descriptive statistics (means, standard deviations) were calculated for the Health Topic Comfort Levels Questionnaire and ICCAS-LLO. The reliability

of the Health Topic Comfort Levels Questionnaire, ICCAS-LLO, and URP-LLO was evaluated by determining internal consistency (Cronbach, 1951). Alpha levels equal to or above .70 were considered acceptable.

RQ1 & RQ2: Do home visitors demonstrate increased self-reported comfort in guiding families about infant/toddler health topics immediately following the completion of LLO and at a one-month follow-up assessment? Do home visitors demonstrate increased self-reported competencies to engage in interprofessional collaborations with pediatricians immediately following the completion of LLO and at a one-month follow-up assessment?

RQ1 and RQ2 were answered by conducting paired samples *t*-tests. Prior to these analyses, the following assumptions were assessed: the dependent variables were continuous, the independent variable involved matched pairs, the distribution of scores was normal, and the data did not contain outliers (Verma & Abdel-Salam, 2019, p. 88). Normality was evaluated by examining histograms of the scores, with a bell-shaped distribution indicating normality. Outliers were identified by creating boxplots of the paired differences.

Four paired samples *t*-tests were conducted to examine the effect of participation in LLO on home visitors' self-reported comfort levels with health topics and their competencies to engage in interprofessional collaborations with pediatricians. Analyses were conducted to compare pre-LLO and post-LLO scores, as well as post-LLO and one-month follow-up scores. Significant effects were illustrated by a *t*-statistic with a *p*-value less than .05. Estimates of effect sizes will be determined by analyzing Cohen's *d*, which will be calculated by dividing the means of the differences in scores between timepoints by the standard deviation of the differences (Cohen, 1992). These estimates will be descriptively compared, with an estimate of effect size of

0.2 indicating a small effect, 0.5 indicating a medium effect, and 0.8 indicating a large effect. In addition, descriptive statistics for both measures were computed and analyzed.

A power analysis was conducted to determine the required sample size for sufficient statistical power. With an alpha level of 0.05, a desired power of 0.80, and a medium effect size of 0.5, the required sample size was 34 participants. Given that the total number of home visitors at the participating EHS program was 10, it was unlikely that this study alone could achieve sufficient power to detect a significant effect without a substantial increase in potential participants (i.e., EHS employees) during the study period. A subsequent power analysis indicated that with 10 participants, an alpha level of 0.05, and a large effect size of 0.85, the achievable statistical power was 0.65.

RQ3: Do home visitors perceive LLO as usable, as indicated by endorsing the program as acceptable, readily understood, feasible, appropriate for independent engagement, and as aligning with EHS climate and collaborative practices?

Descriptive statistics (means, standard deviations) were calculated for each of the URP-LLO subscales. Mean item ratings for the total scale and per factor were calculated. Mean item scores of four (i.e., Slightly Agree) and above indicated favorable review of the usability domain.

RQ4: What gains in knowledge are reported by pediatric residents immediately following the completion of Linking for Little Ones?

Pediatric residents' responses to prebriefing and debriefing questions were structurally and deductively coded to identify key themes (Saldaña, 2016, pp. 183-187). A team of four researchers collaboratively developed two structured codebooks, using each of the prebriefing and debriefing questions as a framework for code development. Two researchers independently reviewed the prebriefing responses, while another pair of researchers reviewed the debriefing

responses, identifying codes by grouping similar answers. Each pair then convened to review the initially identified codes and finalize the codebooks, with a third team member present to offer an additional perspective in case any difficulties arose. During this process, the team focused on identifying similarities across responses, systematically formulating primary codes and corresponding subcodes to capture the nuances of the data. They carefully reviewed and refined these codes by ensuring they were mutually exclusive and exhaustive, meaning that each response could be categorized without overlap and all relevant content was included. Once the codebooks were established, the researchers independently coded the prebriefing and debriefing responses for each question. For the prebriefing responses, coders were each assigned to code a total of 19 of the 28 total responses for each question, with 10 of those responses being double-coded to meet a minimum of 30% checked for consensus. This double-coding approach ensured that discrepancies between coders could be identified and addressed, fostering consensus coding where disagreements occurred (Saldaña, 2016, p. 83). Coding took place in a stepwise process, with coders meeting after coding seven to eight responses at a time to review and discuss their assignments. At each meeting, the 30% overlap was used to facilitate consensus coding to refine and adjust the codebook as needed based on any discrepancies or new insights that arose during discussion. The same process was followed for the debriefing codebook, with the exception that more responses were available, as the debriefing process had been included in the LLO since the first LLO implementation. There were 41 total responses, so each coder was assigned to code 27 responses, with 13 of those responses being double-coded to meet a minimum of 30% checked for consensus. Discrepancies in coding were resolved through consensus, where raters collaboratively reconciled differences and determined the most appropriate codes. When changes were made to code definitions during consensus coding, all pediatric resident responses were

recoded to ensure consistency with the updated definitions (Cascio et al., 2019). The final two codebooks (Appendices H and I, respectively) included codes, subcodes, and examples as necessary, to capture the key concepts and patterns that emerged from the data. Importantly, during the consensus coding process of the first prebriefing question, "What do you know about Early Head Start?", coders noted a high frequency of inaccurate knowledge being reported by the pediatric residents. In response to this observation, the team decided to introduce a new "accuracy" code to the codebooks for the first prebriefing and debriefing questions. This code enabled the researchers to specifically track and quantify the frequency of inaccurate knowledge shared by the participants. By adding this code, the final codebooks allowed for a more nuanced analysis, capturing not only the content of the responses but also the accuracy of the information being conveyed.

After identifying and applying codes to all prebriefing and debriefing responses, a code frequency report was conducted to identify the responses which were most common for each question on each measure (Namey et al., 2008). The frequency of each code was calculated by dividing the number of responses associated with a particular code by the total number of responses for each prebriefing and debriefing question. For instance, changes in how pediatric residents reported their understanding of EHS in response to the first prebriefing and debriefing questions reflected the knowledge they gained about EHS during the intervention. Similarly, shifts in pediatric residents' responses about utilizing family-centered care in the second prebriefing and debriefing indicated their learning regarding the importance and application of this approach in practice. Furthermore, changes in their ideas about partnership, particularly in relation to partnering with home visitors in the third questions, revealed the insights they gained into effective collaboration. These shifts in responses demonstrated how residents' knowledge

evolved from prebriefing to debriefing, providing a clear measure of the educational gains they made throughout the study. The frequency of codes across the prebriefing and debriefing responses further indicated the extent of change in these areas, with a higher frequency of certain codes in the debriefing phase signaling more significant learning and shifts in understanding among the pediatric residents.

Chapter 3: Results

RQ1 & RQ2: Do home visitors demonstrate increased self-reported comfort in guiding families about infant/toddler health topics immediately following the completion of LLO and at a one-month follow-up assessment? Do home visitors demonstrate increased self-reported competencies to engage in interprofessional collaborations with pediatricians immediately following the completion of LLO and at a one-month follow-up assessment?

Prior to conducting analyses, all statistical assumptions (i.e., continuous dependent variables, matched pairs, normal distribution of scores, no significant outliers) were evaluated and met (Verma & Abdel-Salam, 2019, p. 88). The dependent variables were measured continuously using Likert scales. Data were collected from the same participants across three timepoints, ensuring matched pairs. A histogram of the scores revealed bell-shaped distributions, indicating normality, and boxplots of paired differences showed no outliers. There were no missing data at the item level, but some entire measures were missing from participants. For the Health Topic Comfort Level Questionnaire, the response rate was 70% at the pre-LLO timepoint, 60% at the post-LLO, and 60% at the one-month follow-up. For the ICCAS-LLO, the response rate was 60% at all timepoints.

Due to the small sample size across analyses, statistical power was limited. For the health topic comfort levels analyses, the achieved statistical power was 0.08 for both the pre-post

analysis and the post-LLO to one-month follow-up analysis. For the ICCAS-LLO analyses, the achieved statistical power was 0.15 for the pre-post analysis and 0.36 for the post-LLO to one-month follow-up analysis.

Health Topic Comfort Levels

A paired samples *t*-test using total scores with the first six items (total possible score = 36) was performed to evaluate whether there was a difference between home visitors' reported comfort levels regarding health topics between timepoints (see Table 6). The results indicated that there was no change in comfort levels between pre-LLO ($M = 33.00$, $SD = 2.98$) and post-LLO ($M = 33.00$, $SD = 2.78$; $t[7] = 0.00$, $p = 1.00$), resulting in no statistically significant difference between the means. Likewise, there was no statistically significant difference in comfort levels between post-LLO ($M = 32.57$, $SD = 2.70$) and the one-month follow-up timepoint ($M = 31.71$, $SD = 4.99$; $t[6] = -0.74$, $p = 0.49$). Descriptively, there was a small decrease in the mean between post-LLO and the one-month follow-up, indicating a decline in comfort levels over time.

To assess the practical significance of these findings, effect sizes were calculated. The effect sizes indicated no effect (Cohen's $d = 0.0$) between pre-LLO and post-LLO, followed by a small negative effect (Cohen's $d = -0.24$) between post-LLO and the one-month follow-up (Cohen, 1992; Table 6).

Follow-up descriptive statistics revealed that initial ratings of comfort levels were high, with an average of 5.45 out of 6 on the Likert scale, indicating mean ratings between "Agree" and "Strongly Agree." In addition, examination at the item level indicated that the most notable changes between pre-LLO and post-LLO were associated with comfort in guiding families about crib and sleep safety (mean difference = 0.31). Notably, there was a fairly consistent small

decrease in comfort levels between the post-LLO and one-month follow-up timepoints with the exception of comfort levels regarding guidance on feeding and potty training. See Table 7 for descriptive statistics reported at the item level by timepoint.

The seventh item, which asked home visitors to rate their comfort level in guiding parents to interact with pediatricians, was examined separately. A paired samples *t*-test indicated that there was no statistically significant change in comfort levels between pre-LLO ($M = 5.56$, $SD = 0.53$) and post-LLO ($M = 5.75$, $SD = 0.46$; $t[7] = 0.55$, $p = 0.60$), or between post-LLO ($M = 5.71$, $SD = 0.49$) and the one-month follow-up ($M = 5.29$, $SD = 0.76$; $t[6] = -1.44$, $p = 0.20$). There was a small positive effect between pre-LLO and post-LLO (Cohen's $d = 0.20$), followed by a medium negative effect between post-LLO and the one-month follow-up (Cohen's $d = -0.55$). Altogether, these results suggest a slight improvement in comfort levels immediately after LLO, followed by a slight decline over time in comfort with guiding parents to interact with pediatricians.

Interprofessional Collaboration Competencies

A paired samples *t*-test using total scores (total possible score = 50) was performed to evaluate whether there was a difference between home visitors' reported competency to engage in interprofessional collaborations with pediatricians between timepoints (Table 8). The results indicated that there was no significant difference in competencies between pre-LLO ($M = 40.00$, $SD = 12.28$) and post-LLO ($M = 43.83$, $SD = 7.86$; $t[5] = 1.10$, $p = 0.32$). Likewise, there was no significant difference in comfort levels between post-LLO ($M = 44.00$, $SD = 8.00$) and the one-month follow-up timepoint ($M = 41.33$, $SD = 8.71$; $t[5] = -1.96$, $p = 0.11$). Descriptively, there was an increase in the mean between pre-LLO and post-LLO, followed by a decrease in the

mean between post-LLO and the one-month follow-up timepoint. However, the mean at the one-month follow-up remained greater than at the pre-LLO timepoint.

Again, practical significance was evaluated by calculating effect sizes. The effect size for the comparison between pre-LLO and post-LLO was medium and positive (Cohen's $d = 0.45$), while the effect size for the comparison between post-LLO and the one-month follow-up was large and negative (Cohen's $d = -0.80$).

Examination of changes in means at the item level revealed additional information about gains made between timepoints. Notable increases were observed in competencies related to learning with, from, and about pediatricians to enhance EHS service delivery (mean difference = 0.71), understanding their role in facilitating parent-pediatrician interactions for child health (mean difference = 0.75), and informing parents about the various ways pediatricians promote child health and development (mean difference = 0.96). However, a small but consistent decrease in competency levels was observed between the post-LLO and one-month follow-up timepoints across all items. Descriptive statistics by timepoint are provided in Table 9.

RQ3: Do home visitors perceive LLO as usable, as indicated by endorsing the program as acceptable, readily understood, feasible, appropriate for independent engagement, and as aligning with EHS climate and collaborative practices?

The response rate for the URP-LLO was 80% with no missing data at the item level. LLO's usability was rated positively, with an overall mean total score of 145.50 out of 174. At the item level, the overall mean score was 4.95 out of 6. Among the factors, the EHS-pediatrics collaboration yielded the highest mean score ($M = 5.42$, $SD = 0.43$). Conversely, the system support factor received the lowest score ($M = 3.83$, $SD = 1.17$). Of note, lower scores on this

factor suggest greater ability to independently engage in LLO and thus lower scores were expected. Detailed descriptive statistics for the URP-LLO factors are provided in Table 10.

RQ4: What gains in knowledge are reported by pediatric residents immediately following the completion of LLO?

All code frequency reports are available in Tables 11 to 16.

Prebriefing Measure

During the prebriefing, pediatric residents were first asked, "What do you know about Early Head Start?" Among the 28 responses, the most frequent code was the population served by EHS (75.00%; Code 2). Of the 21 residents who addressed this in their responses, 12 correctly identified that the program serves young children (Code 2a), with three residents (10.71%) specifying that it targets children from birth to age three (Code 2ai). Two residents (7.14%) incorrectly stated that EHS serves preschool-aged children (Code 2aii). Additionally, five residents (17.86%) recognized that EHS serves families with low-income status (Code 2b), while others mentioned that the program supports children with developmental delays (7.14%; Code 2c) or pregnant mothers (7.14%; Code 2d). An example response is, "I think [EHS] helps provide resources for families of young children with low-income... it may have developmental resources and therapists but I am not sure" (Resident 14).

The second most common idea was that EHS is an early childhood program, with the majority of residents (53.57%; Code 1) describing it as such. Eight residents (28.57%) further classified it as a preschool program (Code 1b; e.g., "It is a preschool program for families with low socioeconomic status," Resident 28), while 21.43% described it as focusing on child development (Code 1a; e.g., "It is a program which uses integrative practices to foster child

development and facilitate family involvement,” Resident 19). Resident 19 was the only one (3.57%) that noted that EHS emphasizes family involvement (Code 1c).

Some residents (39.29%) mentioned specific resources provided by EHS, including early childhood education (17.86%; Code 3a), therapy services such as speech therapy (10.71%; Code 3c), and referrals to other services (3.57%; Code 3b). A small percentage (7.14%) noted that EHS provides home visits (Code 3d). One resident reported that EHS, “can provide occupational and physical therapy and other supports to facilitate development and growth. There are some Head Start facilities, but supports can also include home visits,” (Resident 23).

In terms of the accuracy of the information reported, 11 residents (39.29%) provided accurate descriptions of EHS (Code 4b), while 13 residents (46.43%) included inaccurate details, such as describing it as a preschool program or stating that it provides speech therapy (Code 4c). Additionally, 4% of residents reported having no prior knowledge of EHS (Code 4a), such as the response “Absolutely nothing” (Resident 37). See Table 11 for the full code frequency report.

The second prebriefing question posed to pediatric residents was, "How do you incorporate family-centered care practices into your work?" In response, most residents (75.00%) emphasized elevating family voices (Code 2), including practices such as shared decision-making (35.71%; Code 2c), actively listening to families (32.14%; Code 2a), which sometimes involved engaging children (7.14%; Code 2ai). Pediatric residents also mentioned encouraging families to ask questions (7.14%; Code 2b). Example responses to this question is, “I involve children as much as possible given their age, encourage families to ask questions, and elicit family values for shared decision making,” (Resident 18) and “We engage in shared decision making frequently when talking to families about starting medications, managing behavior, and getting vaccines,” (Resident 14).

Additionally, about a third of pediatric residents (35.71%) highlighted their use of an individualized approach to care (Code 3), which they described as a strengths-based approach (10.71%; Code 3a), meeting families where they are (10.71%; Code 3b), and considering family characteristics (14.29%; Code 3c), such as socioeconomic status (7.14%; Code 3civ), cultural background (3.57%; Code 3ci), values (7.14%; Code 3ciii), and contextual factors (7.14%; Code 3cii). This was exemplified in the responses, “Identifying strengths of family system during primary care visits” (Resident 22), “Meet patients where they are at by adapting protocols to work for families’ schedules” (Resident 21), and “Take into account the family’s culture, socioeconomics, and values when providing and recommending care that will work for them” (Resident 41).

Fewer residents specified the settings in which they implement family-centered care, with some mentioning family-centered rounds (14.29%; Code 1a) and direct patient appointments (10.71%; Code 1b). Others indicated that they incorporate these principles by providing resources, such as involving other providers (10.71%; Code 5a), using interpreters (7.14%; Code 5b), and offering educational materials like books (3.57%; Code 5c).

Finally, a small number of residents (17.86%) discussed ensuring equitable access to information by conveying it in an understandable way (14.29%; Code 4b; e.g., “Using as simple language as possible to ensure understanding,” Resident 27) and ensuring families have access to health records (3.57%; Code 4a). The full code frequency report is available in Table 12.

The third and final prebriefing question posed to pediatric residents was, “How do you, or would you, partner with a community service provider who is working with your patient?” The majority of pediatric residents (75.00%) emphasized communication as a key element in partnering with community service providers (Code 1). They described various aspects of

communication, including the content (46.43%; Code 1c), timeline (25.00%; Code 1e), frequency (14.29%; Code 1d), and methods (7.14%; Code 1b) of communication. Pulling some of these ideas together, Resident 32 reported that they would “understand the resources they offer, how to complement them, and how to collaborate on pediatric visit timing and resource delivery.” Similarly, Resident 36 reported they would “understand the best communication practices with the organization and then touch base with the provider about goals.”

Regarding the content of communication, pediatric residents noted they would seek to understand the provider’s service plan and goals (14.29%; Code 1ci), share patient information (Code 1cii) such as notes and documentation (Code 1cii2), and progress toward goals (18.57%; Code 1cii1), collaborate to identify necessary resources (10.71%; Code 1ciii), understand the provider’s perspective on the patient’s care (10.71%; Code 1civ), and develop a joint plan for the patient moving forward (3.57%; Code 1cv).

On the timeline for communication, residents reported that they would engage during patient visits (14.29%; 1eii), before patient contact (7.14%; Code 1ci), or after patient contact (3.57%; Code 1ciii). Among the four residents who commented on the frequency of communication, all indicated that communication should be regular or ongoing. As for communication methods, pediatric residents mentioned phone calls (7.14%; Code 1bi), video conferencing (3.57%; Code 1bii), and in-person meetings (3.57%; Code 1biii). One resident shared that although they have not yet engaged in partnership with others, they would like to communicate regularly in addition to prior to well visits:

“I have not had this opportunity yet, but I would definitely be interested in hearing the perspectives of community service providers who are working with my patients. This could be through regular check-ins (phone, video, or in person), or just prior to well visits

to better inform my understanding of their progress and my clinical care decision and recommendations for the visit.” (Resident 13)

Finally, a smaller group of residents (17.86%) indicated that they would partner with community service providers primarily by making referrals for patients (Code 2), notably missing direct interaction with other providers. One resident shared that partnership is not a common practice: “I am honestly not sure, we do not typically partner with community service providers beyond making referrals” (Resident 41). See Table 13 for the full code frequency report.

Debriefing Measure

After completing the core LLO training components, the first debriefing question asked was, "What are three new things you learned in today's training?" The majority of residents (78.05%; Code 1) responded with logistical and factual details about EHS, including the eligibility criteria (70.73%; Code 1a), the content of home visits (29.29%; Code 1c), the role of a home visitor (24.39%; Code 1d), and the frequency of home visits (19.51%; Code 1b). Additionally, some residents highlighted that EHS is a free program for families (2.44%; Code 1e). These codes were captured in the following responses:

“EHS is for kids birth to three years and pregnant moms... EHS helps with school readiness and focuses on general well-being from nutrition, mental health, education, and overall development... [in contrast,] Head Start is for kids three years and above... kids can be enrolled in Early Intervention for development concerns and also be in EHS.” (Resident 21)

“EHS starts at birth through age three... EHS has a community component where they can go to the homes, observe, and provide resources... EHS workers can accompany

family members to [pediatric] visits and be a strong advocate for their care.” (Resident 38)

“EHS provides 90 minutes of home services each week. EHS also assists families in scheduling medical visits and supporting health and development through encouraging routine medical care for infants and toddlers. EHS helps families with wellness and nutrition and food insecurity.” (Resident 13)

Beyond logistical details, many pediatric residents also reported learning about the range of resources available to EHS families (31.71%; Code 3; e.g., “EHS offers resources and services to families living at/below poverty line, foster care, or receiving public assistance who are pregnant or have a child <36 months of age. EHS offers home-based and center-based services,” Resident 14). They also mentioned gaining insight into the program's goals (24.39%; Code 2), which include providing support to families (9.76%; Code 2c), coordinating necessary services for children (9.76%; Code 2b), and promoting school readiness (4.88%; Code 2a). Notably, all pediatric residents provided accurate responses (Code 5b), with no reports of misinformation (Code 5c). See Table 14 for the full code frequency report.

The second debriefing question was, "After today’s training, how might you incorporate family-centered care principles or a therapeutic stance in your work with children and families?" Pediatric residents’ responses were largely consistent with the second prebriefing question, but a higher percentage of residents noted they would adopt a more individualized approach to patient care (78.05%; Code 2) and take into account each family’s unique context when making care decisions or recommendations (31.71%; Code 1).

Regarding individualizing care, 31.71% of residents mentioned they would use a strengths-based approach (Code 2a), while 19.51% emphasized the importance of listening to

families' goals (Code 2c). Other common responses included meeting families where they are (14.63%; Code 2d) and engaging in shared decision-making (12.20%; Code 2b). These codes were notable in the following responses: "Include a greater incorporation of a strength-based approach to care. Medicine frequently centers on identifying 'problems' and I think it is important to highlight what is going well, too" (Resident 13), "I think it is important to continue to develop a patient centered approach and try to take the time to learn more about my families and their strengths," (Resident 4), and "I think continuing to evaluate and inquire about family dynamics, values, and cultural aspects to further partner to best help families is important," (Resident 24).

A few new themes emerged in the debrief data compared to the prebriefing. Notably, residents highlighted the importance of building strong rapport with families (26.83%; Code 3) by using a nonjudgmental approach (17.07%; Code 3c), spending more time with families (7.32%; Code 3b), and following up with them more frequently (2.44%; Code 3a). These codes were evident in the responses, "Partnering with families to design a plan that is conducive to their specific need, being nonjudgmental, and meeting them where they are," (Resident 15) and "Remembering to focus on rapport building and letting families lead with their needs rather than pushing my agenda," (Resident 30). Additionally, 24.39% of residents indicated they would actively provide referrals to services that could benefit the families they work with (Code 4). The full code frequency report is available in Table 15.

The third and final debriefing question asked, "After today's training, how has your perspective on partnering with home visitors changed?" Responses from pediatric residents were overwhelmingly consistent, with all residents (100%) viewing home visitors as valuable assets to the medical team (Code 1) and mentioning appreciation for EHS as a program (56.10%; Code 2).

In terms of the primary theme, residents expressed a stronger appreciation for home visitors' insights into families (51.22%; Code 1a) and a heightened desire to collaborate with them (48.78%; Code 1b). The following responses included these subcodes:

"I will work to get frequent updates from visitors. I can see how much more information they are able to gather and the trusting relationship they form with the families by spending so much time with them and I want to use that to my advantage as a physician. I can also reach out to them prior to visits about reminders." (Resident 12)

"Home visitors can provide a lot of insight that we do not see as pediatricians. For example, home conditions, both physical and emotional, can inform how we support the education and developmental tasks we provide and recommend to patients and families." (Resident 15)

Additional related responses included, "Home visitors are amazing! They really do so much to support the family members. I'm definitely going to try to partner with them more in the future to try to get families the services they need," (Resident 16) and "Home visitors are such a wealth of information and have a unique perspective and relationship with families that can strengthen our therapeutic alliance and help with medical decision making" (Resident 21).

Regarding the secondary theme, pediatric residents acknowledged the essential role home visitors play in the lives of young children and families (39.02%; Code 2a) and expressed an increased desire to refer patients to EHS (17.07%; Code 2b). These codes were exemplified in the responses, "I love this program! I want to refer all my families to it. I can see how this level of support is beneficial to families, and partnering with home visitors gives a unique insight into family dynamics, strengths and needs," (Resident 8) and "EHS is an incredibly valuable

resource that I would love to offer more patients and families,” (Resident 30). The final code frequency report is available in Table 16.

Fidelity

Fidelity was assessed in terms of participant attendance and completion of essential LLO components. Fidelity data is available for eight of nine LLO implementations due to researcher absence at the seventh implementation date. Regarding attendance, participating home visitors and pediatric residents were present at each assigned LLO implementation. A total of 62.5% of sessions had full (i.e., 100%) attendance from participating home visitors and from pediatric residents across all LLO components. The remaining 37.5% of sessions experienced minor interruptions in attendance, with home visitors and pediatric residents missing portions of the training due to reasons such as arriving a few minutes late or stepping out of the room to take a phone call. Procedural fidelity was high, with adherence ranging from 94.12% to 100%, reflecting minimal variability across implementations. Interrater reliability was also 100%, indicating strong agreement on both the quantity and procedural fidelity checklist items.

Chapter 4: Discussion

Joint training has been identified in the literature as a vehicle for achieving interagency collaborations between child service systems (Cooper et al., 2016). The current study followed the Participatory Intervention Model (PIM; Nastasi et al., 2000) as a framework to develop and test the usability of Linking for Little Ones (LLO), an interagency professional development training designed for home visitors and pediatricians. The evaluation of LLO focused on several key outcomes: changes in home visitors' comfort levels in discussing health topics with parents and their perceived competencies in engaging in interprofessional collaboration with pediatricians, and pediatricians' understanding of home visiting practices, family-centered care,

and potential strategies for partnering with home visitors. Additionally, LLO's usability was rated by participating home visitors. Despite being a small pilot, the study yielded a range of valuable findings that contribute to the understanding of effective interprofessional training and collaboration in early childhood care.

Partnership-Driven Creation of Linking for Little Ones

To begin, this study was possible due to the successful formation of effective partnerships. By following Nastasi and colleagues' (2000) PIM, LLO was developed and refined through three key phases: the participatory generation phase, the natural adaptation phase, and the essential changes phase. The participatory generation phase successfully developed LLO by establishing strong partnerships between EHS and pediatric residency programs. The lead researcher worked with administrators and home visitors to adapt the existing training into a collaborative interagency model. Key achievements included creating opportunities for pediatric residents and home visitors to engage in joint teaching, share perspectives on family-centered care, and learn from each other's roles through interactive instruction, a case study, and discussions of families. The reflective debriefing session additionally allowed pediatric residents to consolidate their learning and consider how to apply it in their practice.

During the natural adaptation phase, LLO was refined to align with the partners' goals and values, ensuring it was both feasible and acceptable to home visitors. A key achievement was adapting the program to give home visitors more teaching opportunities, as they expressed confidence in their knowledge of infant and toddler health, which enhanced the program's relevance and use of their expertise. Additionally, the introduction of a prebriefing improved the assessment of pediatric residents' learning, while also preparing them for the educational content

of LLO (INACSL, 2021). This process ensured LLO's alignment with partner needs and set the stage for sustained impact.

In the essential changes phase, the lead researcher evaluated the effectiveness, implementation, and acceptability of LLO. Notably, the high fidelity of implementation and home visitors' positive feedback on usability reinforced the value of developing interagency training models aligned with the PIM framework. The consistent program delivery demonstrated a strong likelihood that LLO could be reliably implemented, thereby supporting its potential for institutionalization. A critical aspect of this process was fostering sustained engagement among home visitors, whose long-term employment contrasted with the temporary roles of pediatric residents in the hospital system. As such, a key turning point occurred when, after participating in LLO, two EHS home visitors expressed interest in developing an interprofessional teaching goal as part of their professional growth within the organization. They requested to become regularly involved in LLO sessions, demonstrating their growing sense of empowerment and ownership over LLO, an important factor for its sustainability and institutionalization, as emphasized by Nastasi and colleagues (2000).

One of these home visitors even assumed a co-facilitator role alongside the EHS administrator during the Interactive Instruction component of LLO, further enhancing the collaboration between home visitors and pediatric residents. This change allowed for a richer, more collaborative exchange between professionals working with infants and toddlers. Prior to this shift, pediatric residents had been taught solely by the EHS administrator, who was not directly involved in home visits. By integrating home visitors into the teaching process, LLO deepened the collaboration and mutual learning between these two essential professional groups. This inclusive approach not only strengthened their working relationships but also helped to

cultivate a sense of shared purpose and belonging, potentially laying the groundwork for deeper engagement and collective growth in future LLO training components.

In sum, this study underscores the importance of each phase in the PIM, demonstrating how collaborative input from all partners contributed to LLO's development, ensured its relevance, and ultimately facilitated its successful evaluation. This partnership process proved invaluable in creating a sustainable, context-specific intervention that addressed the unique needs of the participating agencies. Moreover, the insights gained from this process lay the groundwork for future improvements and adaptations, ensuring that LLO can continue to evolve in response to the changing needs of health and developmental service systems for infants and toddlers. Thus, the PIM framework not only facilitated the immediate success of LLO but also positioned it as a scalable and adaptable approach that can be implemented in other settings to promote interprofessional collaboration in the care of vulnerable children and families.

Home Visitor Outcomes

Given the small sample size of home visitors and reduced statistical power, it was not surprising that the analyses revealed no statistically significant effect for engagement in LLO on home visitors' self-reported comfort levels in guiding families about various health topics or their self-reported competencies in collaborating with pediatricians. However, notable trends in the data, along with small to large effect sizes, offered valuable insights.

First, home visitors' pre-LLO comfort levels with health topics were relatively high, which may suggest a ceiling effect. Alternatively, this could indicate the presence of social desirability bias, where participants may have provided answers perceived as more socially acceptable or expected, rather than reflecting their true feelings or experiences (Gordon, 1987). Another important consideration is the substantial professional experience among participants, as

the average number of years in their current role was over 11, with a range from zero to 25 years. This level of experience may have contributed to their confidence and thus the high self-ratings. Nonetheless, these high ratings were consistent with feedback gathered during the initial community dialogues, during which home visitors did not express a need to learn specific factual knowledge about infant and toddler health from pediatric residents. Instead, they expressed a desire to focus more on teaching pediatric residents. As a result of these discussions, LLO did not include a direct teaching component from the residents. Instead, it emphasized naturally occurring learning opportunities arising from the training. To assess whether these opportunities focused on specific areas of infant and toddler health, thus leading to gains in home visitors' abilities to provide guidance to parents, the Health Topic Comfort Levels Questionnaire was developed for this study. The high pre-LLO ratings, however, made it challenging to identify any specific gains. Nevertheless, trends in the data revealed small increases in mean comfort levels related to guidance on crib and sleep safety, vaccines, dental care, and hearing and vision assessments. Additionally, a modest gain was observed in participants' reported ability to guide parents in interacting with their pediatrician, a key role of home visitors (Radcliffe et al., 2013).

These findings may offer valuable insights into the most commonly discussed health topics between home visitors and pediatric residents, potentially highlighting areas for future adaptations of the LLO program. For example, the largest gains in comfort levels from pre-LLO to post-LLO were observed in guiding families on crib and sleep safety. In addition, this was the only health topic that maintained a small gain at the one-month follow-up timepoint, despite a decrease from post-LLO. Crib and sleep safety is a critical area of focus in both home visiting and PPC, where both professionals play a role in promoting safe sleep practices. Home visitors, in particular, have the unique advantage of conducting in-home assessments, which allows them

to tailor their guidance based on individual family needs (Chahin et al., 2022). It is possible that, during LLO, pediatric residents provided valuable information on crib and sleep safety, which may have contributed to the observed increase in comfort levels immediately following home visitors' participation in the training. This finding suggests that a focus on specific, high-priority topics like sleep safety may be a key area for continued emphasis and further development in future LLO sessions.

The second largest gain in comfort levels from pre-LLO to post-LLO was observed in guiding home visiting families to interact with their pediatricians, an important responsibility of home visitors (Radcliffe et al., 2013). Although the participating EHS program was integrated within the same children's hospital system as the pediatric residency program, professionals from the two agencies (i.e., home visitors and pediatric residents) had not previously engaged in routine interactions. As a result, it was frequently reported anecdotally that LLO provided the first opportunity for these professionals to collaborate and interact with one another. This newfound collaboration may have played a critical role in the observed increase in comfort levels related to guiding parents in their interactions with pediatricians. This shift suggests that providing additional and more routine opportunities for cross-professional learning and interaction could be beneficial in strengthening home visitors' competencies in facilitating parent-PPC provider communication. Future LLO iterations could build upon this foundation by incorporating additional case studies or role-playing exercises that emphasize real-world scenarios of family-pediatrician interactions, further enhancing comfort and competence in this critical area.

Some decreases in comfort levels were observed between pre-LLO and post-LLO, particularly in the areas of guiding families on feeding routines and nutrition, as well as potty

training. This trend suggests that home visitors may have faced challenges during LLO that affected their confidence in these areas. One possible explanation is that the medical terminology used by pediatric residents in discussions about feeding or potty training may have made home visitors feel less knowledgeable or competent in comparison. This could have created a power dynamic between the two types of professionals, a phenomenon often observed in interprofessional education contexts, particularly when physicians are involved (Baker et al., 2011). For example, if pediatric residents presented information in a highly clinical or technical manner, home visitors might have felt that their practical, hands-on expertise in these topics was undervalued or insufficient. To address potential power imbalances such as this, it is important to offer more opportunities for home visitors to share their expertise and facilitate discussions about how to apply knowledge of health and development in home settings. This may help restore confidence and reinforce the value of their practical experience. Another possible explanation for the observed decreases is that home visitors, after participating in LLO, realized that they had erroneous beliefs about these health topics prior to the training. It would be important to follow up with home visitors to gather additional qualitative information about their beliefs and how they may change over time in future evaluations of LLO.

In regard to home visitors' self-reported competencies to engage in interprofessional collaborations with pediatricians, results demonstrated a small positive increase in mean scores from pre-LLO to post-LLO. The most substantial gains were observed in areas related to learning with, from, and about pediatricians to enhance EHS service delivery, understanding the home visitor's role in facilitating parent-pediatrician interactions for child health, and educating parents on how pediatricians contribute to promoting child health and development. This positive shift, despite being modest, suggests that LLO may have helped to bridge knowledge gaps and

foster a deeper understanding of the interprofessional relationship between home visitors and pediatricians. Such enhanced knowledge and understanding could lay the foundation for a more effective and collaborative partnership between these two agencies, leading to better coordination of care for infants and toddlers dually served by EHS and PPC.

For both home visitors' health topic comfort levels and interprofessional competencies, there was a marked consistent decrease in the means of each item between post-LLO and the one-month follow-up, suggesting that the initial gains in knowledge and competence were not sustained over time without continued training opportunities for both professionals to engage. While it is unknown if the frequency of interactions between participating home visitors and physicians increased after LLO participation, these results may suggest that without interaction or reinforcement between home visitors and pediatric residents, they experience a reduction in collaboration skills. This trend aligns with research on skill decay, which posits that without regular application and practice of newly acquired knowledge and skills, retention diminishes over time (Semb & Ellis, 1994). The observed decrease may reflect that home visitors were not able to consistently utilize their enhanced competencies in their roles, particularly if there were limited opportunities to engage in relevant activities, such as when families on their caseloads did not have upcoming well-child visits. To mitigate potential skill decay, Woodman and colleagues (2021) recommend incorporating refresher training opportunities after the initial training. For LLO, these refreshers could prioritize interactive approaches rather than instructional ones, such as scheduling check-ins between home visitors and pediatric residents to discuss shared patients. Another option is organizing grand rounds focused on infants and toddlers, where both EHS home visitors and pediatric residents could attend, present on patients, and discuss relevant health and development questions in regard to the patient's care. These

strategies emphasize the importance of establishing organizational pathways for routine interprofessional collaboration, ensuring that the benefits of LLO are sustained and lead to long-term improvements in service delivery and teamwork.

Home Visitors' Ratings of LLO Usability

As expected, LLO's usability was rated positively by participating home visitors indicated by high mean total and factor scores on the URP-LLO. With the exception of the system support factor, all mean factor scores were above five out of a possible mean score of six. This indicates that home visitors indicated strong acceptability (Factor 1) and feasibility (Factor 4) of LLO, understanding of their role within LLO (Factor 2), and a climate supportive of LLO implementation (Factor 5). These specific results align with expectations, given that LLO was developed following Nastasi and colleagues' (2000) PIM in close collaboration with the participating EHS and pediatric residency program. As a result of following the PIM, the URP-LLO scores reflect both the success of this collaborative process and the effective alignment of LLO with the needs of the specific populations involved in the current study.

Notably, the highest mean rating was for the EHS-pediatrics collaboration factor, indicating that home visitors strongly believe that a robust relationship between EHS home visitors and pediatricians is essential for the successful implementation of LLO. While this outcome was expected, its position as the highest-rated factor underscores the significance of cultivating and maintaining a collaborative, positive relationship with physicians who have been seen as assuming leadership roles or positions of power in interprofessional learning contexts (Baker et al., 2011). This finding reinforces the need to ensure that home visitors have equal opportunities to both teach and learn during their participation in LLO, which is essential for minimizing potential power imbalances that could discourage their engagement. However, it is

also possible that the act of participating in LLO itself helps increase home visitors' sense of respect from physicians, a dynamic similarly reported by health and social care professionals in the qualitative study by Baker and colleagues (2011). The perceptions of power and respect could be explored in future LLO examinations.

The final factor, system support, assessed home visitors' ability to independently engage in LLO. Although lower mean scores on this factor indicate greater independence, the mean score in this case was sufficiently high to suggest that additional training is needed for home visitors to feel more confident and capable in their ability to engage in LLO effectively. This factor is made up of three items: *Additional resources are necessary for home visitors to participate in Linking for Little Ones*, *I would need support from my supervisor to engage in Linking for Little Ones*, and *I would require additional professional development to engage in Linking for Little Ones*. It is important to note that this URP-LLO factor had the lowest internal consistency ($\alpha = 0.51$), and therefore these three items may not be measuring the construct as intended. Nonetheless, the overall mean score, which suggests a need for additional resources and support, may reflect the brevity of instructions provided to home visitors prior to their engagement in LLO. These instructions primarily involved encouraging home visitors to share personal anecdotes and relevant factual information during the training, as well as engaging with pediatric residents by asking them and answering their questions as they arose. Given that the procedures involved in LLO were new to all home visitors at the participating EHS, more detailed guidance may have been beneficial. Furthermore, both home visitors and pediatric residents frequently anecdotally reported an absence of prior interactions between the two groups. In light of this, a more comprehensive introduction to the pediatric residents and their role at the hospital could have helped build home visitors' confidence during their engagement in

LLO. This could be achieved through a prebriefing, similar to that which was implemented for the pediatric residents, as prebriefing not only prepares learners for the educational content, but it can also be used to set clear expectations for participation in the training experience (INACSL, 2021). To improve the effectiveness of future instruction, it would be beneficial to consult with home visitors about their experiences and identify what information would have been helpful to have prior to starting.

Notably, some home visitors participated in LLO multiple times. Although these participants did not complete the URP-LLO at subsequent time points, anecdotal observations indicated that they seemed to gain more confidence in their engagement with LLO (e.g., taking on a stronger teaching role during the Interactive Instruction component) as they accumulated experience interacting with and learning alongside the pediatric residents. This suggests that their repeated participation in LLO may foster greater feelings of independence. This aligns with Bandura's (1982) theory of self-efficacy, which asserts that mastery experiences, gained through repeated practice, enhance one's belief in their ability to perform a task effectively. Therefore, future implementations and evaluations of LLO should include multiple administrations of the URP-LLO to assess changes in feelings of independence over time for home visitors who repeatedly participate in the program.

Pediatric Resident Outcomes

Pediatric residents' responses to the prebrief questions demonstrated a general understanding of EHS, family-centered care principles, and strategies for interprofessional collaboration. However, there were some misconceptions, particularly regarding EHS's role, with many residents mistakenly viewing it as a preschool program. Examination of responses

before and after engagement in LLO indicated the key topics of which pediatric residents learn the most.

One of the most notable differences between pediatric residents' responses to the first question of the prebrief and debrief is the shift in their understanding of EHS as a preschool program. Prior to engaging in the LLO, approximately a third of residents mistakenly believed EHS was a preschool program, with others suggesting that EHS served preschool-aged children or provided early childhood education. These misconceptions accounted for nearly half of the pediatric residents reporting inaccurate information about EHS before the training. This finding aligns with Saoud and colleagues' (2022) research, which found that many physicians were uncertain about the nature of EHS. However, their study also highlighted that parents were more likely to apply to EHS if it was discussed by their child's pediatrician, underscoring the critical role pediatricians play in providing accurate information about the program. Importantly, in response to the first debriefing question, no residents referred to EHS as a preschool program. Instead, a few residents mentioned that EHS promotes school readiness, while the majority reported understanding the eligibility criteria for the program, including the age range of eligible children. Importantly, no pediatric residents provided inaccurate information in their debrief responses, reflecting a clear improvement in their understanding of EHS following LLO.

It is not surprising that pediatric residents primarily reported learning logistical information about EHS, given that, before participating in the LLO, more than half of the residents either had no prior knowledge of EHS or held misconceptions about the program. As a result, it was essential for residents to first acquire basic, factual information about EHS during the LLO. This foundational knowledge allowed them to build a deeper understanding, which

could later be crucial for effectively partnering with home visitors and referring families to home visiting services.

Pediatric residents shared a broader range of ideas about family-centered care during the prebrief than the debrief. Before LLO, they focused on elevating family voices, individualizing care, and discussing their role in family-centered rounds and appointments. They also highlighted providing personalized resources and ensuring equitable access to information. In contrast, the debrief revealed a stronger emphasis on the individualized approach to care, considering family context, prioritizing rapport-building, and providing referrals to service providers like home visitors.

The residents' emphasis on individualized care approaches in their debrief, such as adopting a strengths-based approach, listening to family goals, and engaging in shared decision-making, likely reflects the influence of their interactions with home visitors. Additionally, their increased focus on family context suggests that the training deepened their understanding of its importance. Notably, a quarter of residents prioritized rapport-building with families, aligning with the key role of home visitors in fostering trust. Residents reported using nonjudgmental approaches and spending more time with families, practices common to home visitors. This shift indicates that LLO provided residents with valuable opportunities to observe and adopt these family-centered practices that align with Head Start Performance Standard 1302.50 (USDHHS, 2016), which emphasizes building trust, encouraging ongoing communication, and collaborating with families to address their needs and support their well-being, including safety, health, and economic stability. It is also possible that the inclusion of interactive components centered around case studies and real family cases contributed to new knowledge on family-centered practices, similar to previous findings that interactive learning methods (e.g., role-playing and

case vignettes) enhance knowledge of family-centered care and motivate healthcare professionals to adopt more patient-centered practices (Peterson et al., 2021; Miller et al., 2016)..

Furthermore, during the reflective debriefing, residents also mentioned they would provide referrals as part of their approach to family-centered care. This was not highlighted in the prebriefing, indicating that the training helped residents recognize the value of connecting families to beneficial support systems, such as home visiting. This shift reflects an increased understanding of how referrals can be an essential component of providing comprehensive, family-centered care. This finding also aligns with that from Grant and colleagues (2019), who reported a 19% increase in pediatrician referral rates after a one hour educational session on Head Start and EHS programs, and how to use screening data to determine when to refer. In future LLO studies, it will be valuable to measure EHS referral rates from pediatricians as another method to evaluate gains in pediatric residents' knowledge and skills.

Pediatric residents' responses about partnering with community service providers shifted after engaging in the LLO, moving from a focus on communication logistics to a stronger desire to collaborate with home visitors as integral members of the medical team. Initially, residents emphasized communication content, frequency, and timelines, but by the end of the training, all recognized home visitors as valuable team assets. More than half also expressed a greater appreciation for Early Head Start (EHS), noting an increased willingness to refer families and a deeper understanding of the significant role home visitors play in supporting young children and families. This shift highlights the potential for stronger collaboration between medical providers and home visitors. It also aligns with broader literature showing that non-physician team members often face marginalization within healthcare hierarchies, but interprofessional education fosters respect, inclusion, and empowerment (Gergerich et al., 2019; Baker et al.,

2011). These findings suggest that cultivating interprofessional relationships not only enhances team collaboration but can also improve outcomes for children and families.

Limitations and Future Research Directions

The current study faces several limitations. The most significant is the limited ability to draw definitive conclusions about the effects of LLO participation, largely due to both the small home visitor sample size, resulting in limited statistical power to detect effects, and the one-group design. Although the sample size was reflective of typical home visiting program staff, the small number of participants reduced statistical power, which in turn limited the study's capacity to detect meaningful effects of LLO participation. Future investigations of LLO would likely require recruiting multiple home visiting programs to achieve a sufficiently large sample size. Alternatively, qualitative methods could be employed to explore the impacts of LLO participation in greater depth. Through interviews or focus groups, researchers could gather self-reported insights from home visitors about their perceived competencies in guiding parents about infant and toddler health, as well as their approaches to collaboration with pediatricians. Follow-up interviews conducted after LLO participation could illuminate not only what home visitors learned, but also how their perspectives and knowledge on health and collaboration may have changed. Additionally, one-month follow-up conversations could shed light on specific communication or collaboration efforts with pediatricians, offering a deeper understanding of how LLO may influence their practice and interprofessional interactions over time.

Furthermore, without a control group, it cannot be definitively concluded that LLO led to changes in home visitors' comfort levels in guiding families about health topics or their perceived competencies to engage in interprofessional collaborations with pediatricians. In addition, the lack of a control group limits the ability to determine if the interactions between

home visitors and pediatricians during LLO were different than they would be during a traditional didactic style training experience such as the one previously implemented at these agencies. As such, future research should utilize more robust designs, such as a randomized controlled trial with a wait-list control group, to better isolate the effects of LLO.

The current study is limited by the lack of demographic and questionnaire data from pediatricians. Without demographic information, the generalizability of the findings to other pediatric resident or pediatrician populations is uncertain. However, given that pediatric residents across the United States share similar basic professional qualifications, the results are likely still applicable to this broader group. Additionally, a more robust evaluation of LLO could be achieved by incorporating quantitative measures of usability from both home visitors and pediatric residents. This would provide a more comprehensive view of the training's effectiveness for both groups. In future research, it would be valuable to include additional pre- and post-training measures to strengthen the conclusions about the training's impact on pediatric residents. These measures should be developed in collaboration with representatives from the participating agency to ensure they are meaningful and relevant. For increased feasibility, time to complete these additional measures could be integrated into the existing LLO training schedule.

Original research plans included gathering feedback from parents of EHS home-visiting children regarding the LLO materials and procedures. Given that parents are important recipients of more coordinated infant/toddler care between home visitors and pediatricians, their input could provide valuable insights into potential improvements to the LLO materials, content, and procedures (Morris et al., 2011). However, due to unforeseen challenges in securing permission to speak with parents, this step was delayed to avoid postponing LLO implementation. Parent feedback will, nevertheless, be crucial for refining the LLO before conducting a full-scale study.

This study also faced limitations related to potential bias in the statistical analyses. For both the qualitative coding and fidelity measurement procedures, research team members who were aware of the study's objectives were involved in data collection and analysis, which introduces the possibility of bias influencing the results. To mitigate this risk, 30% of the qualitative and fidelity data were double-coded, with any discrepancies resolved by a third coder. However, to further reduce the potential for bias, future studies should consider having individuals who are unfamiliar with the research aims conduct the qualitative coding and fidelity assessments, helping to ensure greater objectivity in the data analysis process.

The remaining limitations are related to the interagency nature of the final LLO structure and materials. By definition, interagency training involves collaboration between multiple organizations to foster cross-disciplinary learning and integration. The most effective aspect of LLO in achieving this goal is its joint training format, which brings together home visitors and pediatricians in a shared learning experience. However, the training could be further strengthened by ensuring more balanced involvement from both agencies, including their administrators and staff. Currently, LLO places most of the direct teaching responsibility on home visitors during the Interactive Instruction component. While home visitors may indirectly gain knowledge through the pediatric residents' natural sharing of information, there are no explicit learning goals focused on home visitors acquiring knowledge about PPC or the practices of PPC providers. Incorporating such goals into the curriculum would enhance LLO by ensuring that all participants—home visitors and pediatric residents alike—are gaining new, relevant knowledge from the training.

Another way to strengthen the interagency nature of LLO is by including home visitors in the Reflective Debriefing session with pediatric residents. In the current study, LLO was

implemented during pre-scheduled training time, during most of which home visitors were available to attend without disruptions to their other responsibilities. The only exception was during the Reflective Debriefing, at which time the home visitors needed to return to work (e.g., conduct scheduled home visits). Including both home visitors and pediatric residents in the debriefing process would create additional opportunities for learning among all participants, as both groups of professionals would have the chance to exchange insights and highlight key takeaways from one another. As van Diggele and colleagues (2020) noted, it can be common that professionals do not realize how much they have each learned about each other's profession and roles unless they reflect on the training experience together. Taking the time to review and reflect together at the end of training allows participants to recognize these outcomes for all professionals involved. This reflective discussion can also highlight potential areas for ongoing collaboration between home visitors and pediatric primary care providers. For example, if a pediatric resident shares their newfound understanding of developmental screenings conducted during home visits, a home visitor might suggest reaching out for additional information on the patient's results. Similarly, if a home visitor discusses new skills in talking to families about vaccines, a pediatric resident could invite them to attend an upcoming grand rounds on family-centered vaccine discussions for further learning.

Several important questions remain regarding the effects of participation in LLO, particularly concerning factors that may influence the depth of benefits. For example, future research could examine how the impact of LLO differs between first-year pediatric residents and those with more experience later in their residency training. More advanced residents may have additional insights to offer home visitors, potentially enhancing the knowledge gained through participation. Additionally, given that the results highlighted the need for ongoing opportunities

for interprofessional learning, it is crucial to identify sustainable pathways for maintaining interactions between home visitors and pediatricians beyond residency training. This is particularly important, as pediatricians often report limited knowledge of home visiting programs (Sauod et al., 2022). However, as Cooper and colleagues (2016) note, sufficient time and funding are essential to sustain ongoing interagency collaboration. To ensure that home visitors and physicians have protected time and resources for continued collaboration, it is likely that each agency will need to adjust its structure to accommodate this. To advocate for this with agency administrators, it will be essential to emphasize the positive outcomes of the collaboration and the potential for further benefits if it were established as a regular practice.

Another key question is the extent to which home visitors benefit from repeated participation in LLO. As mentioned, the structure of home visiting and pediatric residency programs typically leads to repeated engagement in LLO, as there are fewer home visitors than residents. Additionally, new pediatric residents are admitted each year while others complete their training, creating ongoing opportunities for home visitors to participate alongside new pediatric residents. As a result, home visitors would naturally accumulate additional experience through repeated participation in LLO. Therefore, the potential benefits of such ongoing involvement warrant further investigation, extending beyond the measures captured in the current study. Future research could explore changes in the frequency and quality of communication between home visitors and the PPC physicians for their families. Regarding child and family outcomes, it would also be valuable to assess families' perspectives on improvements in communication between their home visitor and their infant's or toddler's PPC provider. Additionally, measuring home visitors' job satisfaction and retention rates within the EHS program could provide valuable insights, as research has suggested that interprofessional

learning with physicians positively impacts these factors for health and social care professionals (Baker et al., 2011).

Interagency training, such as the LLO, may help foster additional coordination between PPC and home visiting programs. Integrated primary care models, which offer behavioral health interventions in a "one-stop shop" format, are particularly effective in reducing barriers to care (Grazier et al., 2016). This approach is especially beneficial for families facing socioeconomic challenges, such as those served by EHS. Research on integrated primary care has shown that various professionals, including psychologists, social workers, and early childhood educators, implement a range of interventions to promote positive development and mental health while preventing potential concerns (Hostutler et al., 2024). One such intervention, Healthy Steps, is delivered within PPC settings for children aged birth to three years. The program aims to support both the physical and emotional development of infants and toddlers, boost parental confidence, and improve the capacity of pediatric care to address the needs of young children and their families (Lawrence et al., 2001). Healthy Steps involves screening and providing developmental guidance during pediatric visits, delivered by a Healthy Steps specialist, such as a psychologist or social worker. Given the overlap between the goals of Healthy Steps and those of EHS home visitors, this program offers a promising opportunity for further coordination between PPC and home visiting services. If home visitors were trained as Healthy Steps specialists, they could have more consistent contact with PPC providers, fostering enhanced communication and collaboration. In turn, they would have the opportunity to educate PPC providers about home visiting while also benefiting from shared learning during joint visits with infants and toddlers. While this specific approach to home visiting and PPC integration has not yet been studied, there is evidence to suggest that integration and co-location of home visiting programs within PPC has

been shown to facilitate improved services, including increased home visiting referral rates reduced duplication of services (Linton et al., 2018; Sides & Baggett, 2015).

Next Steps for LLO Research and Dissemination

Key immediate next steps for LLO research include completing the pilot study through the remaining three implementations for the current residency training year and convening with all partners to share findings and gather final feedback on the pilot phase. This moment will also present a critical opportunity to explore what is needed for sustained implementation at partner sites. Specifically, it will be important to identify the conditions and supports that could enable LLO to continue independently without intensive researcher involvement (Nastasi et al., 2000).

Following the completion of the pilot phase and the collection of final feedback, it will be essential to consider strategic enhancements to LLO for a future full-scale study. One promising addition would be a structured component in which home visitors and pediatric residents collaboratively develop plans for sustained communication. This idea emerged repeatedly during the Reflective Debriefing sessions with pediatric residents, signaling a clear need for deeper, direct dialogue between the two groups. Facilitating such collaboration could help translate initial engagement into lasting interprofessional relationships. This enhancement could take the form of an extended Reflective Debriefing session or a dedicated LLO component focused specifically on building and sustaining interprofessional communication between home visitors and pediatric providers. The design and structure of this component will be guided by PIM framework methods to ensure continued alignment with the priorities, context, and evolving needs of the community partners (Nastasi et al., 2000).

There are a variety of important avenues for the planned dissemination of these findings. To start, the findings will be shared with the participating EHS and the pediatric residency

programs. In addition, these findings will be shared with secondary partners at another EHS and pediatric residency program who the lead researcher has simultaneously worked with to develop and pilot LLO. The lead researcher is also presenting the findings at several upcoming conferences, including the Society for Research in Child Development (SRCD) Biennial Meeting, the Annual Meeting of the Child Care and Early Education Policy Research Consortium (CCEEPRC), and the Annual Early Care and Education Scholars Grant Recipient Meeting. The lead researcher also plans to present and prepare research briefs for both home visiting and pediatric related state programs such as the Pennsylvania (PA) Office of Child Development and Early Learning (OCDEL), the PA Head Start State Collaboration Office (HSSCO), and the PA Chapter of the American Academy of Pediatrics. As for practitioner oriented products, the lead researcher will additionally seek to prepare briefs for the National Home Visiting Resource Center and Zero to Three.

Challenges and Lessons Learned

Although the partnership ultimately proved successful, it was not without challenges, many of which reflect the inherent barriers that often arise during real-world implementation of systems-level initiatives. One of the first and most significant obstacles was navigating the multiple institutional review boards (IRBs) at both the research team's university and the partnering children's hospital. Each IRB had its own guidelines, review timelines, and training requirements for research team members, which extended the approval process and delayed the study's start. Additionally, when working with the IRB at the children's hospital, the lead researcher was required to select a Principal Investigator from the hospital staff who was not directly affiliated with either of the participating agencies (i.e., EHS or the pediatric residency program). This was because their roles at the hospital did not officially permit time for research

activities. This requirement posed another challenge and necessitated the formation of additional partnerships with research staff at the hospital. Therefore, in future partnerships that require approval from other organizations' IRBs, it is advisable to ensure the collaboration includes a researcher at the organization who can serve as the Principal Investigator at the site.

Additional challenges emerged when the research team proposed offering incentives to study participants. Initially, plans and funding were allocated to provide incentives to all participating administrators, home visitors, and pediatric residents. However, through the partnership, it was discovered that EHS staff were unable to accept any incentives. To ensure fairness across all participants and honor the needs of the partnering EHS program, the decision was made to remove incentives for everyone. However, this decision may have contributed to the lower-than-expected response rate from several home visitors who did not complete one or more questionnaire timepoints. Therefore, in future research, it is recommended to consider alternative, allowable forms of incentives, such as donations of books or other educational supplies for the children served by the participating home visitors and pediatric residents. Importantly, this topic should be prioritized during the Participatory Generation phase of the PIM to enhance the likelihood of obtaining meaningful data.

Another challenge encountered was ensuring equal involvement from all participating agencies. Coordinating schedules for meetings was difficult, as each agency had limited time and availability. To address this, meetings were often scheduled well in advance, with agendas distributed beforehand to make the best use of everyone's time. In some cases, meetings were held with individual agencies to maximize efficiency rather than waiting for everyone to be available at once. Additionally, the use of teleconferencing for meetings proved very helpful in accommodating varying schedules. Moving forward, it is recommended to prioritize early

scheduling and leverage flexible meeting formats like teleconferencing to ensure consistent engagement from all partners.

Conclusion

This study is the first to apply the PIM framework to develop an interagency training program for home visiting and pediatric primary care agencies. It described the successful development and pilot implementation of LLO, contributing valuable procedural insights to the literature on interagency training for infant and toddler service providers. The results of the study revealed trends indicating that changes in home visitors' self-reported comfort levels in guiding parents about infant/toddler health topics and competencies in collaborating with pediatricians were of small and medium magnitudes, respectively, between pre-LLO and post-LLO. Pediatric residents demonstrated gains in both their knowledge of and appreciation for EHS, along with an increased desire to collaborate with home visitors as integral members of patient care teams. A key limitation of the study was the small sample size, which restricted the ability to conduct more robust statistical analyses. To fully assess the effectiveness of LLO, a larger-scale study with a bigger sample would be essential for conducting more robust statistical analyses and gaining a clearer understanding of the training program's impact on both home visitors and pediatric residents. Furthermore, a full-scale study could help determine whether LLO can be effectively integrated as a routine interagency training model, and whether it can lead to sustained improvements in collaboration, knowledge sharing, and coordinated care. Ultimately, such a study could demonstrate the potential of LLO to enhance service delivery for vulnerable infants and toddlers, particularly those from families facing complex health and economic challenges. For these families, the interprofessional collaboration promoted by LLO is critical in

ensuring they receive the comprehensive, timely support needed to overcome barriers and promote healthy development.

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Table 1*LLO Implementation of Participatory Intervention Mode (PIM) and Outcomes*

	Participatory Generation Phase	Natural Adaptation Phase	Essential Changes Phase
PIM Purpose	Identify culture-specific goals and intervention strategies Design a culture-specific intervention	Modify and adapt the intervention to fit the needs of the community partners Monitor implementation integrity	Examination of intervention impact on targeted outcomes
LLO Implementation Steps	- Led a joint meeting with administrative representatives to learn about current goals and structure for training - Introduced interagency model of training, its purpose, and evidence in support of it - Attended and observed existing training implementation - Led a community dialogue with EHS staff to elicit perspectives on learning goals for training with pediatricians - Presented feedback from observations and community dialogue to administrative representatives - Adapted training materials in collaboration with administration representatives - Elicited feedback on final LLO materials	- Identified important adaptations to promote acceptability and sustainability - Shared preliminary summarized data with administrative partners - Measured implementation fidelity during each implementation	- Elicited feedback from administrative partners after LLO implementations - Analyzed usability data to guide adaptation decision-making - Analyzed pre-post quantitative data on home visitors' comfort levels in guiding families about pertinent infant/toddler health topics and their competency in engaging in interprofessional collaborations with pediatricians - Analyzed pre-post qualitative data on pediatric residents' gains in knowledge

	- Introduced and collaborated on methods for measuring outcomes of LLO		
LLO Outcomes	- Identified goals for adapted version of existing training, moving to an interagency model of training - Developed LLO training materials, structure, and plan for implementation - Developed evaluation measures	- Adapted LLO structure and measurement plan to align with needs of community partners - Added in pre-LLO qualitative measure for pediatric residents - Confirmed feasibility through high feasibility	- Confirmed LLO procedures and content led to high ratings of usability - Summarized quantitative and qualitative data to illustrate benefits of LLO participation for both agencies

Table 2*Responses Gathered from Community Dialogue with EHS Staff*

Question	Responses
What questions do families ask you about health and healthcare?	• Developmental milestones • Nutrition (e.g., when to introduce solids) • Vaccine schedules • Dentist schedules • Referrals to specialists and other service providers (Speech, OT, PT) • General information about pediatric visits (what will happen, what questions will doctors ask, what the family should ask)
Which topics do you feel prepared to answer about?	• Developmental milestones • Nutrition • Vaccine schedules and information • Basic illnesses • Advocating in the doctor's office (e.g., which questions to ask the doctor)
What would be helpful to learn more about in regard to infant and toddler health?	• Other resources in the community available for families • Getting connected with a developmental pediatrician • Getting referrals for services • General practice information (e.g., structure of visits, how providers work to form relationships with families, specific developmental screeners used in the office)
On what topics related to children and families would you like to engage with pediatricians?	• Cultural considerations when working with diverse families • Developing relationships with families • Home visiting programs

Table 3

Adaptations from Pre-Existing Training Structure to Interagency Model in Development of Linking for Little Ones

	Interactive Instruction	Dual Discussion of Families	Debriefing
Existing Training Structure	- Led by EHS administrative representative - Informational in nature	- Led by home visitors - Primarily observational for pediatric residents	- Primarily included answering any final questions from pediatric residents
LLO Adaptations	- Led by EHS administrative representative and home visitors - Included additional opportunities for interactions between professionals (e.g., relating nonjudgmental approaches in home visiting to family-centered care approaches in pediatrics) - Added in the Collaborative Case Study discussion for additional interprofessional teaching opportunities	- Included instructions for pediatric residents to become involved in discussions of families - Included instructions for home visitors to include pediatric residents in family discussions (e.g., asking health-related questions, eliciting questions from them)	- Provided an opportunity for pediatric residents to reflect on most meaningful takeaways from LLO - Focused on applications of family-centered care and importance of care coordination with home visiting

Table 4*Home Visitor Participants Demographic Information*

Characteristic	Percentage (<i>n</i>)
Sex	
Female	100 (10)
Race/Ethnicity	
Black	60 (6)
White	20 (2)
Asian	20 (2)
Role/Job Title	
Home Visitor	70 (7)
Lead Home Visitor	10 (1)
Health Educator	20 (2)
Education Level	
Associate's	20 (2)
Bachelor's	40 (4)
Master's	40 (4)
Number of Years in Current Role	<i>M</i> = 11.1, Range = 0.5-25
Currently Serving Children with Disabilities	70 (7)
Number of Current Children with Disabilities on Caseload	<i>M</i> = 8.8, Range = 4-20

Table 5

Internal Consistency Values for the Health Topic Comfort Levels Questionnaire, ICCAS-LLO, and URP-LLO Across Timepoints

	Pre-LLO	Post-LLO	one-month Follow-Up
Dependent Measure Scale/Subscale	α	α	α
Health Topic Comfort Levels Questionnaire	0.83	0.74	0.91
ICCAS-LLO	0.98	0.97	0.98
URP-LLO			
Acceptability		0.71	
Understanding		0.51	
EHS-PPC		0.65	
Collaboration			
Feasibility		0.95	
System Climate		0.91	
System Support		0.75	

Table 6*Paired Samples T-Tests for the Health Topics Comfort Level Questionnaire*

Comparison	Timepoint	<i>N</i>	<i>M</i>	<i>SD</i>	Paired mean difference	<i>t</i> -value	<i>p</i> -value	Cohen's <i>d</i>
Pre-LLO to Post-LLO	Pre-LLO	8	33.00	2.98	0.00	0.00	1.00	0.00
	Post-LLO	8	33.00	2.78				
Post-LLO to Follow-Up	Post-LLO	7	32.57	2.70	-0.86	-0.74	0.49	-0.28
	Follow-Up	7	31.71	4.99				

Table 7*Health Topic Comfort Levels Questionnaire Item Level Descriptive Statistics Across Timepoints*

	Pre-LLO (n = 9)		Post-LLO (n = 8)		one-month Follow-Up (n = 6)	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<i>I am comfortable guiding families about...</i>						
Getting their children vaccinated	5.44	0.53	5.63 ⁺	0.52	5.17 [†]	1.17
Crib and sleep safety	5.44	0.53	5.75 ⁺	0.46	5.50 [†]	0.84
Feeding routines and nutrition	5.67	0.50	5.50	0.76	5.67	0.52
Dental care for their children	5.67	0.50	5.75 ⁺	0.46	5.67 [†]	0.52
Potty training	5.22	0.97	5.00	1.07	5.17	0.98
Assessing their children's hearing and vision	5.22	0.83	5.38 ⁺	0.74	5.17 [†]	1.60
<i>What is your current comfort level in guiding your families to interact with their children's pediatrician?</i>	5.56	0.53	5.75 ⁺	0.46	5.33 [†]	0.82

Note: ⁺Increase between pre-LLO and post-LLO; [†]Decrease between post-LLO and one-month follow-up.

Table 8*Paired Samples T-Tests for the ICCAS-LLO*

Comparison	Timepoint	<i>N</i>	<i>M</i>	<i>SD</i>	Paired mean difference	<i>t</i> -value	<i>p</i> -value	Cohen's d
Pre-LLO to Post-LLO	Pre-LLO	6	40.00	12.28	3.83	1.10	0.321	0.45
	Post-LLO	6	43.83	7.86				
Post-LLO to Follow-Up	Post-LLO	6	44.00	8.00	-2.67	-1.96	0.107	-0.80
	Follow-Up	6	41.33	8.71				

Table 9*ICCAS-LLO Item Level Descriptive Statistics Across Timepoints*

	Pre-LLO (<i>n</i> = 9)		Post-LLO (<i>n</i> = 8)		one-month Follow-Up (<i>n</i> = 6)	
<i>Please rate your ability for each of the following statements:</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Guide effective communication between parents and pediatricians	3.89	1.17	4.25 ⁺	0.89	4.00 [†]	0.89
Coach parents to provide constructive feedback to pediatricians	3.78	1.09	4.25 ⁺	0.89	4.00 [†]	0.89
Coach parents to express ideas and concerns to pediatricians in a clear, concise manner	4.11	1.05	4.25 ⁺	0.89	4.17 [†]	0.98
Coach parents to seek out pediatricians when concerns or issues arise	4.11	1.27	4.50 ⁺	0.76	4.33 [†]	1.03
Work effectively with pediatricians and families to enhance infant/toddler care	3.78	1.20	4.12 ⁺	0.83	3.83 [†]	1.17
Learn with, from, and about pediatricians to enhance EHS service delivery	3.67	1.12	4.38 ⁺	0.92	4.17 [†]	0.98
Talk to pediatricians about my roles and responsibilities as a home visitor	4.00	1.22	4.63 ⁺	0.74	4.33 [†]	0.82
Understand my role in facilitating parent and pediatrician interactions for the health of the child	3.88	1.25	4.63 ⁺	0.74	4.00 [†]	0.89
Inform parents about the many ways that pediatricians promote child health and development	3.67	1.00	4.63 ⁺	0.74	4.17 [†]	0.75

Guide parents to become involved in decision-making processes for their child	4.11	1.17	4.38 ⁺	0.74	4.33 [†]	0.82
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Note: ⁺Increase between pre-LLO and post-LLO; [†]Decrease between post-LLO and one-month follow-up.

Table 10

Factor Level Descriptive Statistics for the URP-LLO (n = 8)

Factor	<i>M</i>	<i>SD</i>
Acceptability	5.06	0.28
Understanding	5.17	0.47
Collaboration	5.42	0.43
Feasibility	5.04	0.58
System Climate	5.30	0.55
System Support	3.83	1.17
Total	4.95	0.42

Note: Lower scores for system support reflect greater ability to independently engage in *Linking for Little Ones*. As such, items within this factor were reverse coded before calculating the overall mean.

Table 11*Code Frequency Report for Pediatric Resident Responses to Prebrief Question 1 (n = 28)*

Responses	Number of Participants	%
EARLY CHILDHOOD PROGRAM	15	53.57
Preschool program	8	28.57
Promotion of development	6	21.43
Family involvement facilitation	1	3.57
POPULATION SERVED	21	75.00
Young children	12	42.86
<i>Birth-to-three</i>	3	10.71
<i>Preschool-aged</i>	2	7.14
Low income	5	17.86
Children with developmental delays	2	7.14
Pregnant mothers	2	7.14
RESOURCES PROVIDED	11	39.29
Early childhood education	5	17.86
Therapy (e.g., speech therapy)	3	10.71
Home visits	2	7.14
Referrals to other services	1	3.57
ACCURACY OF INFORMATION	28	100.00
Accurate information reported	11	39.29
Inaccurate information reported	13	46.43
No information	4	14.29

Table 12*Code Frequency Report for Pediatric Resident Responses to Prebrief Question 2 (n = 28)*

Responses	Number of Participants	%
ELEVATING FAMILY VOICES	21	75.00
Shared decision making	10	35.71
<i>Prioritizing family preferences</i>	2	7.14
Listening to families	9	32.14
<i>Involving children</i>	2	7.14
Encouraging families' questions	2	7.14
INDIVIDUALIZED APPROACH TO CARE	10	35.71
Considering family characteristics	4	14.29
<i>Socioeconomic status</i>	2	7.14
<i>Context (e.g., history, composition)</i>	2	7.14
<i>Values</i>	2	7.14
<i>Culture</i>	1	3.57
Strengths-based approach	3	10.71
Meeting families where they are at	3	10.71
JOB RESPONSIBILITY	7	25.00
Family-centered rounds	4	14.29
Patient appointments	3	10.71
PROVIDING RESOURCES	6	21.43
Involving other providers in care	3	10.71
Using interpreters	2	7.14
Educational resources (e.g., books)	1	3.57
PROVIDING EQUITABLE ACCESS TO INFORMATION	5	17.86
Relaying information in an understandable nature	4	14.29
Ensuring access to health records	1	3.57

Table 13*Code Frequency Report for Pediatric Resident Responses to Prebrief Question 3 (n =28)*

Responses	Number of Participants	%
COMMUNICATION	21	75.00
Content	13	46.43
Understand provider's service plan and goals	4	14.29
Sharing patient information	3	10.71
<i>Notes and documentation</i>	2	7.14
<i>Progress toward goals</i>	1	3.57
Identifying which resources are needed	3	10.71
Understand providers' perspective on patient care and progress	3	10.71
Collaborating on a plan for the patient	1	3.57
Timeline	7	25.00
During contact with patient	4	14.29
Before contact with patient	2	7.14
After contact with patient	1	3.57
Frequency	4	14.29
Regular contact between providers	4	14.29
Method	2	7.14
Phone call	2	7.14
Video conference	1	3.57
In person	1	3.57
REFERRALS TO COMMUNITY PROVIDERS	5	17.86

Table 14*Code Frequency Report for Pediatric Resident Responses to Debrief Question 1 (n = 41)*

Responses	Number of Participants	%
LOGISTICAL INFORMATION	32	78.05
Eligibility criteria	29	70.73
<i>Difference between EHS and EI</i>	18	43.90
<i>Difference between EHS and HS</i>	1	2.44
Visit content	12	29.27
Home visitor role	10	24.39
Frequency of visits	8	19.51
Free for families	1	2.44
VARIETY OF RESOURCES PROVIDED	13	31.71
PROGRAM GOALS	10	24.39
Family support	4	9.76
Coordinated services	4	9.76
School readiness	2	4.88
ACCURACY OF INFORMATION	41	100.00
Accurate information reported	41	100.00
Inaccurate information reported	0	0.00
No information	0	0.00

Note: EI = Early Intervention.

Table 15*Code Frequency Report for Pediatric Resident Responses to Debrief Question 2 (n = 41)*

Responses	Number of Participants	%
INDIVIDUALIZED APPROACH TO CARE	32	78.05
Strengths-based approach	13	31.71
Listening to family goals	8	19.51
Meeting families where they are at	6	14.63
Shared decision making	5	12.20
CONSIDERING FAMILY CONTEXT	13	31.71
Family dynamic and structure	9	21.95
Family culture and values	1	2.44
Risk factors	1	2.44
Parent mental health	2	4.88
PRIORITIZING RAPPORT WITH FAMILIES	11	26.83
Using a nonjudgmental approach	7	17.07
Spending more time with families	3	7.32
Following up with families	1	2.44
PROVIDING REFERRALS FOR ADDITIONAL RESOURCES	10	24.39

Table 16*Code Frequency Report for Pediatric Resident Responses to Debrief Question 3 (n =41)*

Responses	Number of Participants	%
HOME VISITORS AS ASSETS TO MEDICAL TEAM	41	100.00
Appreciation for home visitors' perspectives on families	21	51.22
Increased desire to collaborate	20	48.78
APPRECIATION FOR EHS	23	56.10
Home visitor role	16	39.02
Increased desire to refer to EHS	7	17.07

Appendix A

LLO PowerPoint Slides

Linking for Little Ones:

Early Head Start & Pediatrics Working Together to Support the Psychosocial Context of Child Development



Linking for Little Ones Experience: Goals

✓Improve CHOP Early Head Start (EHS) home visitors' and CHOP pediatricians' mutual understanding of their respective service systems and professional roles and responsibilities

✓To learn how a family's psychosocial context is considered in the assessment of child development in home visiting and in well-baby visits

✓To learn how the efforts of EHS and pediatrics support one another's efforts to promote children's growth and development during the first 3 years of life



Linking for Little Ones Agenda



Intro to EHS

Brief review of the purpose and implementation of the EHS program

Family Review

Triannual multidisciplinary team case review
Ecological, strengths-based system perspective

Debrief

Review of knowledge gained



Participation Guidelines



Please:

- Silence your phone
- Refrain from texting
- If you need to use your cell phone, please step outside

THANKS!



Introductions

- Name, role at CHOP
- Hometown/state
- Home visitors: Number of families on current caseload, favorite thing to do with families on home visits
- Residents: Primary Care location, specialization of interest



What is Head Start/Early Head Start?



Early Head Start vs Early Intervention: What's the difference?



How Early Head Start is Implemented

- Program options
- Home-based
 - Center-based
 - Family-child care
- Comprehensive Services
- Child Development
 - Family & Community Engagement
 - Health & Wellness



Therapeutic Stance



- While keeping in mind my knowledge of early relationships and child development and my hopes and dreams for this family, I am alert to hearing what the family's knowledge, truth, and hopes and dreams are.
- I resist my urges to quickly fix, rescue, or "do something," and wait to hear and see more from the parent and child
- I remember that we all want to do our best as persons and caregivers—and so often in circumstances that do not support our efforts.

Nuzzo, C. (2006) Together We Play Parent-Child Interaction Coaching Program: Building Relationships to Support Development. Unpublished manuscript.

Therapeutic Stance



- I always strive to understand a parent's point of view, but am never dishonest about my truth—especially when a child's safety is at risk.
- Each person can only be who and what they are at a given point in time. As the professional, I meet, accept, and support the parent "where and how they are" and not as I would wish them to be.

Nuzzo, C. (2006) Together We Play Parent-Child Interaction Coaching Program: Building Relationships to Support Development. Unpublished manuscript.

Therapeutic Stance



- I value the role of being a collaborator and partner with the parent on their journey of raising their child. This means I never assume I always know what is best and have all the answers for this particular parent, child, and family
- I truly believe every person has gifts and strengths, and I look to nurture those in the parents and young children I serve.

Nuzzo, C. (2006) Together We Play Parent-Child Interaction Coaching Program: Building Relationships to Support Development. Unpublished manuscript.

Therapeutic Stance & Family-Centered Care

- **Family Participation**
 - Staff respects and supports a family's desire to participate in the care of their child and the level they choose and are able
- **Designing a Plan of Care**
 - Staff collaborates with family members to advocate and design a plan of care in the best interest of the child
- **Developmentally Appropriate Resources**
 - Staff provides developmentally appropriate resources for children with special healthcare needs
- **Compassion and Support**
 - Staff make a difference by providing compassion and support to children, adolescents, and their families in healthcare delivery
- **Flexible, Accessible, Responsive Care**
 - Staff provides a commitment to healthcare delivery that is flexible, accessible, and responsive to family needs
- **Respecting Coping Styles**
 - Healthcare professionals respect the different styles of coping with stress and offer expertise and support to families
- **Sharing Information**
 - Healthcare professionals share information in ways that are supportive, empowering, and affirming for families



CHOP, 2013 <https://www.chop.edu/stories/family-centered-care-our-families-words>

Who Early Head Start Serves

- Eligibility**
- Pregnant
 - Child under 36 months
 - 90% at poverty level or below
 - 10% with diagnosed disabilities
 - Foster children
 - Public assistance (SSI, SNAP or TANF)
 - Children experiencing homelessness
- Risk factors considered in eligibility**



Early Head Start at The Children's Hospital of Philadelphia

2024 Poverty Guidelines

Number of Persons in Family/Household	100% of Poverty	130% of Poverty	150% of Poverty
1	\$15,060	\$19,578	\$22,590
2	\$20,440	\$26,572	\$30,660
3	\$25,820	\$33,566	\$38,730
4	\$31,200	\$40,560	\$46,800
5	\$36,580	\$47,554	\$54,870
6	\$41,960	\$54,548	\$62,940
7	\$47,340	\$61,542	\$71,010
8	\$52,720	\$68,536	\$79,080

For families/households with more than 8 persons, add \$5,380 for each additional person (w/in 100% list)

Poverty guidelines provided by Department of Health & Human Services effective January 17, 2024

Research—Early Head Start



Positive effects for child development and home environment

- Cognitive development scores
- Language development scores
- Parental support for language and learning
- Literacy environment
- Decreased maternal depression

Avellar and Supplee (2013)



Research—Early Head Start



Positive effects for child maltreatment

- Fewer child welfare encounters, fewer substantiated physical and sexual abuse (but neglect more likely)
Green et al. (2014)
- Less physical punishment
Avellar and Supplee (2013)
- Less likely to experience spanking (Head Start)
Zhao and Waldfogel (2013)



Research—Early Head Start



Programs like Head Start Pay for Themselves

- Increased health and educational outcomes of families enrolled in Head Start
- Results in increased ability to financially contribute to family and government (i.e. taxes)
- And less need for government assistance

Hendren and Sprung-Keyser (2020)



Research—Early Head Start and Pediatrics

- HV shows positive results for families who are difficult to engage in supportive services
- HV shows positive outcomes in child health, especially in partnership with health providers such as pediatricians
- The American Academy of Pediatrics encourages pediatricians to partner with home visiting programs to support quality services and improve public health

Avellar and Supplee (2013)



How we partner with pediatricians

Well child visits
Specialist visits
Dental Care
Health insurance
Early Intervention referrals
Health education
Mental Health referrals and education
Safety education
Nutrition consultation
Routines



EHS at CHOP

Zip codes 19104/19139
136 children/pregnant moms
124 home based
• 14 pregnancies
12 Center based
At least 14 diagnosed with disabilities



Typical Languages: English, Bengali, Spanish, Arabic



Please refer families to Early Head Start at 267-425-9900 or ehinfo@chop.edu

You may also use the EPIC SmartPhrase: **EHS** to provide information about EHS to families.

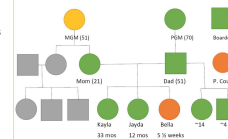
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Case Study: The Brown Family

- Family goals: Evaluate children's development and achieve safe housing
- Strengths: Mother is very intelligent, connected to her children, and prides herself on her parenting skills, good relationship with children's father
- Mother reports a history of PTSD
- Mother did not receive prenatal care for Bella
- Home is in poor condition and in need of significant repairs; home has 2 dogs and 7 cats



*Colors indicate households
*Circles = Females, Squares = Males

Discussion Questions

1. How would you approach a home visit or well-child visit with this family?
2. What additional information would you want to gather?
3. What might be your first recommendation for this family?
4. How would you incorporate family strengths, culture, and/or values into your home visit or well-child visit with this family?



Family Review

You will hear about several families currently being served by Early Head Start. As you listen,

- Consider what additional questions you might have about the family
- Think about what you might recommend for the child/family if the child was your patient – share your expertise!



Appendix B

Health Topic Comfort Level Questionnaire

Rate your agreement with each of the following statements using the following scale.

I am comfortable guiding families about...

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Getting their children vaccinated	☐	☐	☐	☐	☐	☐
Crib and sleep safety	☐	☐	☐	☐	☐	☐
Feeding routines and nutrition	☐	☐	☐	☐	☐	☐
Dental care for their children	☐	☐	☐	☐	☐	☐
Potty training	☐	☐	☐	☐	☐	☐
Assessing their children's hearing and vision	☐	☐	☐	☐	☐	☐

What is your current comfort level in guiding your families to interact with their children's pediatrician?

Very Uncomfortable	Moderately Uncomfortable	Slightly Uncomfortable	Slightly Comfortable	Moderately Comfortable	Very Comfortable
☐	☐	☐	☐	☐	☐

Appendix C

The Interprofessional Collaborative Competency Attainment Scale (Archibald et al., 2014)

The Interprofessional Collaborative Competency Attainment Scale (Revised)

Using the following scale, please rate your ability for each of the following statements:

1 = "Poor"; 2 = "Fair"; 3 = "Good"; 4 = "Very good"; 5 = "Excellent"

	Before participating in the learning activities, I was able to:					After participating in the learning activities, I was able to:				
	P	F	G	VG	E	P	F	G	VG	E
1. Promote effective communication among members of an interprofessional (IP) team	1	2	3	4	5	1	2	3	4	5
2. Actively listen to IP team members' ideas and concerns	1	2	3	4	5	1	2	3	4	5
3. Express my ideas and concerns without being judgmental	1	2	3	4	5	1	2	3	4	5
4. Provide constructive feedback to IP team members	1	2	3	4	5	1	2	3	4	5
5. Express my ideas and concerns in a clear, concise manner	1	2	3	4	5	1	2	3	4	5
6. Seek out IP team members to address issues	1	2	3	4	5	1	2	3	4	5
7. Work effectively with IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
8. Learn with, from and about IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
9. Identify and describe my abilities and contributions to the IP team	1	2	3	4	5	1	2	3	4	5
10. Be accountable for my contributions to the IP team	1	2	3	4	5	1	2	3	4	5
11. Understand the abilities and contributions of IP team members	1	2	3	4	5	1	2	3	4	5
12. Recognize how others' skills and knowledge complement and overlap with my own	1	2	3	4	5	1	2	3	4	5
13. Use an IP team approach with the patient to assess the health situation	1	2	3	4	5	1	2	3	4	5
14. Use an IP team approach with the patient to provide whole person care	1	2	3	4	5	1	2	3	4	5
15. Include the patient/family in decision-making	1	2	3	4	5	1	2	3	4	5
16. Actively listen to the perspectives of IP team members	1	2	3	4	5	1	2	3	4	5
17. Take into account the ideas of IP team members	1	2	3	4	5	1	2	3	4	5
18. Address team conflict in a respectful manner	1	2	3	4	5	1	2	3	4	5
19. Develop an effective care plan with IP team members	1	2	3	4	5	1	2	3	4	5
20. Negotiate responsibilities within overlapping scopes of practice	1	2	3	4	5	1	2	3	4	5
21. Compared to the time before the learning activities, would you say your ability to collaborate interprofessionally is... (circle one)										
	1 = Much better now; 2 = Somewhat better now; 3 = About the same; 4 = Somewhat worse now; 5 = Much worse now									

The ICCAS was developed by: MacDonald, C., Archibald, D., Trumpower, D., Casimiro, L., Cragg, B., & Jelly, W. (2010). Designing and operationalizing a toolkit of bilingual interprofessional education assessment instruments. *Journal of Research in Interprofessional Practice and Education*, 1(3). Revised item scales and the addition of item #21 were made during a replication validation study by Schmitz, C.C., Radosevich, D.M., Jardine, P.J., MacDonald, C.J., Trumpower, D. & Archibald, D. (2017, *Journal of Interprofessional Care*).

Appendix D

The Interprofessional Collaborative Competency Attainment Scale – Linking for Little

Ones (ICCAS-LLO)

Consider your role as a home visitor facilitating effective interactions between parents and pediatricians. Using the following scale, please rate your ability for each of the following statements:

	Poor	Fair	Good	Very Good	Excellent
Guide effective communication between parents and pediatricians	☐	☐	☐	☐	☐
Coach parents to provide constructive feedback to pediatricians	☐	☐	☐	☐	☐
Coach parents to express ideas and concerns to pediatricians in a clear, concise manner	☐	☐	☐	☐	☐
Coach parents to seek out pediatricians when concerns or issues arise	☐	☐	☐	☐	☐
Work effectively with pediatricians and families to enhance infant/toddler care	☐	☐	☐	☐	☐
Learn with, from, and about pediatricians to enhance EHS service delivery	☐	☐	☐	☐	☐
Talk to pediatricians about my roles and responsibilities as a home visitor	☐	☐	☐	☐	☐
Understand my role in facilitating parent and pediatrician interactions for the health of the child	☐	☐	☐	☐	☐
Inform parents about the many ways that pediatricians promote child health and development	☐	☐	☐	☐	☐
Guide parents to become involved in decision-making processes for their child	☐	☐	☐	☐	☐

Appendix E

Usage Rating Profile – Intervention Revised (URP-IR; Chafouleas et al., 2011)

Usage Rating Profile-Intervention Revised (URP-IR)						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This intervention is an effective choice for addressing a variety of problems.	1	2	3	4	5	6
2. I would need additional resources to carry out this intervention.	1	2	3	4	5	6
3. I would be able to allocate my time to implement this intervention.	1	2	3	4	5	6
4. I understand how to use this intervention.	1	2	3	4	5	6
5. A positive home-school relationship is needed to implement this intervention.	1	2	3	4	5	6
6. I am knowledgeable about the intervention procedures.	1	2	3	4	5	6
7. The intervention is a fair way to handle the child's behavior problem.	1	2	3	4	5	6
8. The total time required to implement the intervention procedures would be manageable.	1	2	3	4	5	6
9. I would not be interested in implementing this intervention.	1	2	3	4	5	6
10. My administrator would be supportive of my use of this intervention.	1	2	3	4	5	6
11. I would have positive attitudes about implementing this intervention.	1	2	3	4	5	6
12. This intervention is a good way to handle the child's behavior problem.	1	2	3	4	5	6
13. Preparation of materials needed for this intervention would be minimal.	1	2	3	4	5	6
14. Use of this intervention would be consistent with the mission of my school.	1	2	3	4	5	6
15. Parental collaboration is required in order to use this intervention.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
16. Implementation of this intervention is well matched to what is expected in my job.	1	2	3	4	5	6
17. Material resources needed for this intervention are reasonable.	1	2	3	4	5	6
18. I would implement this intervention with a good deal of enthusiasm.	1	2	3	4	5	6
19. This intervention is too complex to carry out accurately.	1	2	3	4	5	6
20. These intervention procedures are consistent with the way things are done in my system.	1	2	3	4	5	6
21. This intervention would not be disruptive to other students.	1	2	3	4	5	6
22. I would be committed to carrying out this intervention.	1	2	3	4	5	6
23. The intervention procedures easily fit in with my current practices.	1	2	3	4	5	6
24. I would need consultative support to implement this intervention.	1	2	3	4	5	6
25. I understand the procedures of this intervention.	1	2	3	4	5	6
26. My work environment is conducive to implementation of an intervention like this one.	1	2	3	4	5	6
27. The amount of time required for record keeping would be reasonable.	1	2	3	4	5	6
28. Regular home-school communication is needed to implement intervention procedures.	1	2	3	4	5	6
29. I would require additional professional development in order to implement this intervention.	1	2	3	4	5	6

Appendix F

Usage Rating Profile – Linking for Little Ones (URP-LLO)

When answering the following statements, consider Linking for Little Ones as a routine training program for home visitors and pediatricians. Rate your agreement with the following statements below.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Linking for Little Ones is effective in improving collaborations between home visitors and pediatricians.	☐	☐	☐	☐	☐	☐
Additional resources are necessary for home visitors to participate in Linking for Little Ones.	☐	☐	☐	☐	☐	☐
Home visitors have the time to participate in Linking for Little Ones.	☐	☐	☐	☐	☐	☐
Home visitors would understand how to engage in this training experience.	☐	☐	☐	☐	☐	☐
A positive Early Head Start and pediatrician relationship is needed to engage in this training experience.	☐	☐	☐	☐	☐	☐
I understood what was expected of me to engage in Linking for Little Ones.	☐	☐	☐	☐	☐	☐
This training is a fair way to improve interprofessional collaboration between home visitors and pediatricians.	☐	☐	☐	☐	☐	☐
The total time required to complete Linking for Little	☐	☐	☐	☐	☐	☐

Ones is manageable for home visitors.

I would not be interested in engaging in Linking for Little Ones again.

My administrator would be supportive of my engagement in Linking for Little Ones.

I would have a positive attitude about engaging in Linking for Little Ones.

Linking for Little Ones is a good way to improve interprofessional collaboration between home visitors and pediatricians.

Preparation of materials needed for Linking for Little Ones would be minimal.

Engagement in interprofessional training would be consistent with the mission of Early Head Start.

Administrator collaboration is required in order to implement Linking for Little Ones.

Engagement in interprofessional training is well matched to what is expected in my job.

Material resources for Linking for Little Ones are reasonable.

I am enthusiastic about the Linking for Little Ones training experience.

☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

Linking for Little Ones is too complex to participate in.	☐	☐	☐	☐	☐	☐
Linking for Little Ones procedures are consistent with the way things are done at Early Head Start.	☐	☐	☐	☐	☐	☐
Linking for Little Ones would not be disruptive to Early Head Start staff.	☐	☐	☐	☐	☐	☐
I would be committed to engaging in Linking for Little Ones.	☐	☐	☐	☐	☐	☐
Linking for Little Ones procedures easily fit in with my current practices.	☐	☐	☐	☐	☐	☐
I would need support from my supervisor to engage in Linking for Little Ones.	☐	☐	☐	☐	☐	☐
I am aware of the training components of Linking for Little Ones.	☐	☐	☐	☐	☐	☐
My work environment is conducive to implementation of interprofessional training like Linking for Little Ones.	☐	☐	☐	☐	☐	☐
The amount of time required for record keeping would be reasonable.	☐	☐	☐	☐	☐	☐
Regular communication between Early Head Start and pediatricians is needed to implement Linking for Little Ones.	☐	☐	☐	☐	☐	☐
I would require additional professional development to	☐	☐	☐	☐	☐	☐

engage in Linking for Little
Ones.

Appendix G
Fidelity Measure

Quantity Measures				
Participant Attendance <i>0 = no attendance</i> <i>1 = partial attendance (i.e., attended less than 100% of time from beginning to end)</i> <i>2 = full attendance (i.e., present 100% of time from beginning to end)</i>				
	Interactive Instruction	Collaborative Case Study	Dual Discussion of Families	Debrief
Home Visitor - 1				N/A
Home Visitor - 2				N/A
Home Visitor - 3				N/A
Resident - 1				
Resident - 2				
Resident - 3				
Resident - 4				
Resident - 5				
Resident - 6				

Procedural Fidelity	
Interactive Instruction	
Pediatric residents are given a prebrief questionnaire to complete	Yes (1) No (0)
PPT Topic Addressed: <i>EHS program information (i.e., facts about what EHS is)</i>	Yes (1) No (0)
PPT Topic Addressed: <i>EHS therapeutic stance approach + connection to family-centered care</i>	Yes (1) No (0)

PPT Topic Addressed: <i>EHS support of pediatrics</i>	Yes (1) No (0)
PPT Topic Addressed: <i>EHS outcome data</i>	Yes (1) No (0)
PPT Topic Addressed: <i>EHS referral information</i>	Yes (1) No (0)
Home visitors are involved as trainers (e.g., sharing information about EHS, presenting slides, sharing stories/experiences as HVs) at least once	Yes (1) No (0)
Pediatric residents are involved in teaching (e.g., sharing information about pediatric health service delivery, medical systems, family-centered care, CHOP processes) at least once	Yes (1) No (0)
Collaborative Case Study	
Family information is presented to home visitors and pediatric residents	Yes (1) No (0)
Home visitors and pediatric residents discuss the case with one another <i>*If only one home visitor is present, discussion takes place as a large group. If two or more home visitors are present, discussion takes place in small groups with at least one of each professional in each group.</i>	Yes (1) No (0)
Home visitors and pediatric residents are given discussion questions	Yes (1) No (0)
Facilitator leads reflection on case discussion among all participants (e.g., asks for participants to share what they spoke about in small groups, makes connections across groups, highlights similarities and differences in responses)	Yes (1) No (0)
Dual Discussion of Families	
Home visitors communicate about current children and families served (e.g., presenting information about EHS children, asking residents questions, answering resident questions)	Yes (1) No (0)
Pediatric residents communicate about current children and families served (e.g., presenting/sharing information relevant to EHS children, asking home visitors questions, answering home visitor questions)	Yes (1) No (0)

Debrief	
Pediatric residents are given a questionnaire to complete	Yes (1) No (0)
Question asked and discussed: <i>What are three things you learned in today's training?</i>	Yes (1) No (0)
Question asked and discussed: <i>How would you use a therapeutic stance with families?</i>	Yes (1) No (0)
Question asked and discussed: <i>How has your perspective on partnering with HVs changed?</i>	Yes (1) No (0)

Appendix H

Prebriefing Codebook

Question 1 What do you know about Early Head Start?	1. Early childhood program a. Promotion of development b. Preschool program c. Facilitation of family involvement 2. Population served a. Young children/early childhood i. 0-3 ii. Preschool (i.e., 4-5 years old) b. Low income c. Children with developmental delay or disabilities d. Pregnant moms 3. Resources provided a. Early childhood education b. Referrals to other services c. Therapy (e.g., speech therapy, occupational therapy, physical therapy) d. Home visits 4. Accuracy of information a. No information b. Accurate information (e.g., it is a program for infants and toddlers) c. Incorrect information (e.g., it is a preschool program)
Question 2 How do you incorporate family-centered care practices into your work?	1. Job responsibility a. Family-centered rounds b. Patient appointments 2. Elevating family voices a. Listening to families i. Involving children in the visit (e.g., asking them questions) b. Encouraging families' questions c. Shared decision making i. Prioritizing family preference 3. Individualized approach to care a. Strengths-based approach b. Meeting families where they are at c. Considering family characteristics i. Culture ii. Family context (e.g., family history, family composition) iii. Values iv. Socioeconomic status

	4. Providing equitable access to information a. Ensuring access to health records b. Relaying complete information in an understandable nature 5. Providing resources a. Involve other providers in care b. Educational resources (e.g., books) c. Using interpreters
Question 3 How do you, or would you, partner with a community service provider who is working with your patient?	1. Communication a. Types i. Check-ins with providers ii. Scheduled meetings b. Method i. Phone call ii. Video conference iii. In person c. Content i. Understanding provider's service plan and goals ii. Sharing patient information 1. Progress toward goals 2. Notes and documentation iii. Identifying which resources are needed iv. Understanding provider's perspective on patient care and progress v. Collaborating on a plan for the patient d. Frequency i. Regular contact between providers e. Timeline i. Before contact with patient ii. During contact with patient iii. After contact with patient 2. Referrals to community service provider

Appendix I

Debriefing Codebook

Question 1 What are three new things you learned in today's training?	1. Logistical information a. Eligibility criteria i. Difference between EHS and Early Intervention ii. Difference between EHS and Head Start b. Frequency of visits c. Visit content d. Home visitor role e. Free for families 2. EHS program goals a. School readiness b. Coordinated services c. Family support 3. Variety of resources and support provided 4. Level of knowledge and understanding of home visiting 5. Accuracy of information a. No information b. Accurate information (e.g., it is a program for infants and toddlers) c. Incorrect information (e.g., it is a preschool program)
Question 2 After today's training, how might you consider using a therapeutic stance in your work with children and families?	1. Considering family context a. Family dynamic and structure b. Family culture and values c. Risk factors d. Parent mental health 2. Individualized approach to care a. Strength-based approach b. Shared decision making c. Listening to family goals d. Meeting families where they are at 3. Prioritizing rapport with families a. Following up with patients b. Spending more time with families c. Using a nonjudgmental approach 4. Provide referrals for additional resources
Question 3 After today's training, how has your perspective on partnering with home	1. Home visitors as assets to the medical team a. Appreciation for home visitors' perspectives on families b. Increased desire to collaborate with home visitors 2. Appreciation for EHS a. Home visitor role b. Increase desire to refer to EHS

visitors changed?	
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Curriculum Vita

Christina Nicole Wood

Curriculum Vitae

2 E Joppa Rd #403 | Towson, MD 21286 | 609-306-1348 | cnw219@lehigh.edu

EDUCATION

- | | |
|---|--|
| Ph.D.
2019-2025
(expected) | School Psychology
Lehigh University, Bethlehem, PA
Concentration: Pediatric/Health Psychology
APA-accredited, NASP-approved program
Advisor: Patricia H. Manz, Ph.D.
GPA: 4.0
USDHHS Funded Dissertation: <i>Interagency Training to Promote Culturally Responsive, Family-Centered Home Visiting and Pediatric Service Integration</i> |
| M.Ed.
2019 - 2021 | Human Development
Lehigh University, Bethlehem, PA
Doctoral Qualifying Project: <i>Variability in Teacher Self-Efficacy Among Linguistically Diverse Preschoolers: Student-Teacher Relationship Quality as a Moderator</i> |
| B.A.
2015 – 2019 | Psychology
The College of New Jersey (TCNJ), Ewing, NJ
Magna Cum Laude, Phi Beta Kappa |

CERTIFICATION AND LICENSURE

- | | |
|----------------------|--|
| Ed.S.
2023 | Educational Specialist I: School Psychologist, PK-12
Commonwealth of Pennsylvania
Certificate Number: 3618726 |
| BCBA
2021 | Board Certified Behavior Analyst
Behavior Analyst Certification Board
Certificate Number: 1-21-55256 |

CLINICAL EXPERIENCE

Jul 2024 –
Jul 2025

Mt. Washington Pediatric Hospital, Baltimore, MD
Predoctoral Psychology Intern

Supervisors: Bradley Schwimmer, Psy.D., Jillian Murphy, Ph.D., Katherine Volker, Ph.D., Courtney Douglas, Psy.D., Courtney Andrews, Psy.D.

- Primary Integrated Care for Complex Kids (PICCK) Clinic
 - Conduct developmental screenings for patients presenting with complex medical and developmental conditions in the outpatient primary care setting, ensuring early identification of needs and tailored care plans
 - Complete comprehensive joint intake assessments with physicians, evaluating patients' developmental, behavioral, emotional, psychosocial, and family functioning
 - Perform warm handoffs to provide behavioral health consultation and recommendations for families
 - Provide consultation to multidisciplinary team members including physicians, nurses, social workers, and pediatric specialists to optimize treatment plans
 - Deliver evidence-based behavioral therapy and follow-up care for families managing both acute and chronic conditions
- Feeding Clinic
 - Implement feeding protocols (in person and via telehealth) within an interdisciplinary feeding day treatment program; patient population includes children and adolescents presenting with ARFID, ASD and other neurodevelopmental disorders, and complex medical conditions
 - Provide psychoeducation and parent management training
 - Collaborate with speech therapists, occupational therapists, physical therapists, dietitians, and medical providers on patient goal development, protocol revisions, and behavior management strategies
- Diabetes Clinic
 - Provide psychological interventions (e.g., CBT, MI) to children and adolescents with Type 1 and Type 2 diabetes presenting in the outpatient clinic setting for routine follow up to promote adherence to their medical regimens
 - Provide consultation to multidisciplinary team members (e.g., physicians, nurses, nutritionists) and promote collaborative care
- Outpatient therapy
 - Deliver evidence-based interventions (e.g., behavioral therapy and parent management training, CBT, MI) through an individualized, culturally responsive approach for children and adolescents presenting with a range of internalizing and externalizing concerns
- Psychological evaluations
 - Conduct comprehensive psychological evaluations for a range of referral concerns including difficulties with attention, behavior, mood, peer/social interactions, and history of trauma
 - Write evaluation reports and conduct feedback sessions with families
- Inpatient Consultation/Liaison

- Deliver evidence-based interventions to support patients and caregivers in the infant and pediatric inpatient units
- Will collaborate with multidisciplinary team members to provide coordinated care
- Engage in systems level positive behavior support program implementation with pediatric patients and provide psychoeducation on behavior programs to team members and families

**Aug 2023 –
May 2024**

Nemours Children’s Health, Middletown, DE

Psychology Extern, *Integrated Primary Care*

Supervisor: Kathryn Hoffses, Ph.D.

- Attended multidisciplinary professional development series with diverse professionals (e.g., physicians, nurse practitioners) to discuss clinical cases and engage in interprofessional learning
- Implemented brief therapeutic intervention and counseling services to pediatric populations diverse in age (2 to 20 years) and presenting concerns/conditions (e.g., ADHD, ASD, mood disorders, sleep difficulties, learning disabilities, behavior problems, anxiety, specific phobias) using a family-systems, ecological approach
- Conducted ASD diagnostic evaluations for children under 5-years-old, wrote brief reports, and led feedback sessions with families
- Conducted school-aged ADHD evaluations, wrote brief reports, and led feedback sessions with families
- Collaborated with patients’ school staff to identify appropriate, available resources at school and to promote consistency of interventions across settings

**Jun 2022 –
May 2023**

Nemours Children’s Health, Wilmington, DE

Psychology Extern, *Behavior Consultation Clinic*

Supervisor: Meghan Lines, Ph.D.

- Provided, educated, and modeled evidence-based behavioral strategies used to address a variety of behavioral problems (e.g., noncompliance, disruptiveness, sleep and toileting difficulties, separation anxiety, specific phobias) for parents of children ages birth to 5 years within a fast-paced clinic setting
- Collaborated with patients’ school staff to promote consistency of interventions across settings
- Applied an ecological approach to understanding the impact of broader systems on family functioning
- Documented clinical notes in the electronic medical record
- Developed understanding of the business of psychology, including billing codes, DSM-5 and ICD-10 diagnosis codes, and factors that impact reimbursement and sustainability of services

**Jun 2022 –
Jun 2023**

Children’s Hospital of Philadelphia, Philadelphia, PA

Psychology Extern, *Sleep Center*

Supervisor: Melisa Moore, Ph.D., DBSM

- Functioned as part of an interdisciplinary team of pulmonologists, nurses, and psychologists to treat patients with medical and behavioral sleep problems
- Conducted clinical intake interviews with patients (ages 3 months to 21 years) and their families
- Developed individualized treatment plans in collaboration with patients in a consultative model
- Formulated diagnoses and document clinical notes in the electronic medical record

**Jul 2021 –
May 2022**

Children’s Hospital of Philadelphia, Philadelphia, PA
Psychology Extern, Center for Autism Research

Supervisors: Juhi Pandey, Ph.D., Maya Mosner, Ph.D.

- Administered developmental, cognitive, and achievement assessments to infants and toddlers (ages 6 months to 24 months) and school-aged children (ages 5 to 14 years) with a range of psychiatric and medical diagnoses (e.g., autism, down syndrome, ADHD, anxiety, learning disabilities). Assessments administered include: *Bayley Scales of Infant and Toddler Development – Fourth Edition*; *Differential Ability Scales – Second Edition (DAS-II)*; *Wechsler Individual Achievement Test – Third Edition (WIAT-III)*; *Bruininks-Oseretsky Test of Motor Proficiency – Second Edition (BOT-II)*
- Wrote integrated psychological assessment reports with detailed, data-informed recommendations
- Provided feedback to parents and caregivers to review assessment scores and recommendations

**Aug 2020 –
Jun 2023**

Children’s Hospital of Philadelphia, Philadelphia, PA
Clinical Research Assistant, School Adolescent Mood Project

Supervisors: Jami Young, Ph.D., Jane Gillham, Ph.D., Molly Davis, Ph.D.

- Conducted adolescent depression psychodiagnostic evaluations using the *Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS)* with adolescents (ages 13 to 15 years)
- Diagnosed mood disorders in adolescents based on DSM-5 criteria
- Conducted risk assessments for adolescents who endorsed current or a history of suicidality

**Mar 2021 –
Jan 2023**

Schoolhouse Educational Services
Remote Assessment Administrator

Supervisor: Milt Dehn, Ph.D.

- Administered the *Reynolds Early Assessment of Dyslexia (READ)*, the *Complex Processing Speed Test (CPST)*, and the *Word in Context Intelligibility (WCIT)* tests remotely via Zoom with children aged 2 to 13 years

**Aug 2020 –
May 2022**

Lehigh University Autism Services, Bethlehem, PA
Clinical Research Assistant

Supervisors: Lee Kern, Ph.D., Ana Dueñas, Ph.D., BCBA

- Provided direct applied behavioral analytic therapy services for young children with autism (ages 4 to 6 years)
- Conducted functional behavior assessments, analyze the data, and develop data-informed function-based individualized behavior programs
- Conducted direct observations and ongoing evaluations using a variety of assessment tools (e.g., *Assessment of Basic Language and Learning Skills – Revised (ABLLS-R)*, *The Vineland Adaptive Behavior Scales (Vineland-3)*, *Child and Adolescent Needs and Strengths (CANS)*)
- Collected and graphed data on all skill acquisition behavior programs
- Modeled and demonstrated behavior analytic teaching strategies (i.e. delivery of reinforcement, shaping) for parents, caregivers, and school personnel
- Wrote authorization and reauthorization assessment reports and treatment plans for insurance companies
- Wrote and presented updated client reports at case conference meetings
- Trained other staff members on applied behavioral analytic techniques and interventions

Aug 2019 – Jun 2020 **Aveanna Healthcare, Allentown, PA**
Registered Behavior Technician

Supervisor: Kelly Perez, M.S., BCBA

- Provided direct applied behavioral analytic therapy services for young children with autism (ages 2 to 8 years)
- Implemented skill acquisition programs and behavior support plans developed by behavior analysts
- Collected and graphed data on all skill acquisition programs
- Modeled and demonstrated behavior analytic teaching strategies for key stakeholders (e.g., parents)

SCHOOL-BASED CLINICAL EXPERIENCE

Sep 2022 – Aug 2023 **Upper Merion Area School District, Upper Merion, PA**
Specialized Doctoral Practicum Student

Supervisors: Lauren Moulton, Ph.D.

- Administered intellectual and academic achievement assessments to school-aged children (ages 5 to 10 years) with a variety of learning and behavioral challenges
- Attended Child Study Team, Multi-Tiered Systems of Support, Positive Behaviors Support and Intervention in Schools, and IEP meetings
- Summarized and integrated evaluation results to form recommendations on eligibility and IDEA identification categories; wrote integrated reports of findings
- Lead social-emotional group counseling for 3rd grade groups using a manualized intervention, Second Step
- Provided behavior consultation to teachers and administrators

- Sep 2021 – Jun 2022** **Allentown School District, Allentown, PA**
Advanced Doctoral Practicum Student
Supervisors: Cindy Ilgenfritz, M.Ed.
- Administered intellectual and academic achievement assessments to school-aged children (ages 5 to 10 years) with a variety of learning and behavioral challenges
 - Led different counseling intervention groups, including a social skills based group (1st and 2nd grade) and a self-esteem group (4th grade)
 - Conducted direct observations of student behavior
 - Wrote summaries of evaluation data for integrated reports
- Apr 2021 – Jun 2021** **Bethlehem Area School District, Bethlehem, PA**
Graduate Student Trainee
Supervisors: Michelle Lesinski, M.S.
- Administered intellectual and academic achievement assessments to school-aged children (ages 5 to 10 years) with a variety of learning and behavioral challenges
 - Conducted direct observations of student behavior
 - Wrote summaries of evaluation data for integrated reports and presented the data at case meetings
 - Attended Student Assistance Program (SAP) meetings and presented updates on student progress toward goals
 - Provided individual counseling for a student with behavioral challenges
- Sep 2020 – Jun 2021** **Buffalo City School District, Buffalo, NY**
Virtual Graduate Student Trainee
Supervisors: Molly Lynch, M.Ed.
- Completed various school trainings on Culturally Responsive Instruction, Multi-Tiered Systems of Support, and Trauma-Informed Care
 - Completed certification training for the Student Assistance Program (SAP)
 - Wrote psychoeducational evaluation reports and provided intervention recommendations for students
- Sep 2019 – Dec 2019** **Seven Generations Charter School, Emmaus, PA**
Graduate Student Interventionist
Supervisor: Christine Cole, Ph.D.
- Developed a multicomponent function-based intervention used to decrease off-task behavior exhibited by a first-grade student with ADHD
 - Collected data during baseline and intervention phases
 - Determined the efficacy of the intervention using visual analysis of graphically displayed data
- Jan 2019 – May 2019** **Urban Promise, Trenton, NJ**
Interventionist/Tutor
Supervisor: He Len Chung, Ph.D.

- Developed and implemented a reading intervention designed to increase engagement for second-grade students from the surrounding low-income community
- Tutored high-school students in various subject matters after school

ASSESSMENT EXPERIENCE

<i>Diagnostic</i>	Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) Tele-ASD-Peds
<i>Cognitive and Executive Functioning</i>	A Developmental NEuroPSYchological Assessment, Second Edition (NEPSY-II) Child and Adolescent Memory Profile (CHaMP) Complex Processing Speed Test (CPST) Differential Ability Scales, Second Edition (DAS-2) Kaufman Assessment Battery for Children, Second Edition (KABC-2) Kaufman Brief Intelligence Test, Second Edition (KBIT-2) Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-4) Wechsler Intelligence Scale for Children, Fifth Edition (WISC-5) Wechsler Pre-School and Primary Scales of Intelligence, Fourth Edition (WPPSI-4) Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-4)
<i>Academic Functioning</i>	Bracken School Readiness Assessment, Third Edition (BSRA-3) Kaufman Test of Educational Achievement, Third Edition (KTEA-3) Kaufman Test of Educational Achievement, Third Edition Brief Form (Brief KTEA-3) Reynolds Early Assessment of Dyslexia (READ) Wechsler Individual Achievement Test, Fourth Edition (WIAT-4) Woodcock-Johnson IV Tests of Achievement (WJ-4) Young Children's Achievement Test, Second Edition (YCAT-2)
<i>Developmental</i>	Bayley Scales of Infant Development, Fourth Edition (Bayley-4)
<i>Motor Skills</i>	Beery-Buktenica Developmental Test of Visual-Motor Integration (Beery VMI) Bruininks-Oseretsky Test of Motor Proficiency, Second Edition (BOT-II)
<i>Criterion-Referenced</i>	Assessment of Basic Language and Learning Skills – Revised (ABBLs-R) Verbal Milestones Assessment and Placement Program (VB-MAPP)
<i>Observational</i>	Behavioral Observation of Students in Schools (BOSS) Childhood Autism Rating Scale, Second Edition (CARS-2) Functional Behavior Assessment (FBA)

RESEARCH EXPERIENCE

- Aug 2019 - present** **Little Talks/Synergy of Care**, Lehigh University
Research Coordinator | PI: Patricia Manz, Ph.D.
 Research goals focused on 1) early literacy promotion for low-income infants and toddlers and 2) understanding parental experiences in navigating service delivery for infants and toddlers with disabilities and identifying avenues for across-system service integration. Conduct interviews with parents and code qualitative data. Coordinate research team member tasks. Prepare and submit manuscripts for publication and professional conference proposals for presentation.
- Jun 2023 – Aug 2023** **Mountaintop Summer Experience Fellowship**, Lehigh University
Research Fellow | PI: Patricia Manz, Ph.D.; Sean Daley, Ph.D.
 Research goals focused on identifying critical cultural and geographical factors that affect the formation of family-centered integrated pediatric, home visiting, and early intervention services for children living on Native reservations and in urban cities. Completed training in ArcGIS Pro mapping and developed qualitative interview protocols for families.
- Jan 2020 – May 2020** **Peer Mediated Interventions in Schools**, Lehigh University
Research Assistant | PI: Christine Cole, Ph.D., LP
 Reviewed peer mediated intervention (PMI) literature to inform development of a school-based PMI for students with autism.
- Jan 2020 – May 2020** **Positive Behavior Supports in Schools**, Lehigh University
Research Assistant | PI: Nina Ventresco, M.Ed., Patricia Manz, Ph.D.
 Conducted middle school classroom observations and collected data on teacher praise and reprimands and student disruptive behavior for a Positive Behavior Support Intervention dissertation project.
- May 2018 – Aug 2018** **Improving Autism Early Intervention Treatment Fit**, A.J. Drexel Autism Institute
Research Assistant | PI: Giacomo Vivanti, Ph.D.
 Observed early intervention (i.e., Early Start Denver Model therapy) treatment sessions for young children with autism (ages 2 to 4 years). Scored various developmental and adaptive measures (e.g., *Mullen Scales of Early Learning*, *Vineland Adaptive Behavior Scales, Third Edition*). Completed routine data entry and submission to the National Institute of Health.
- Aug 2018 – May 2019** **Cognitive Development Lab**, The College of New Jersey
Research Assistant | PI: Aimee Stahl, Ph.D.
 Assisted with testing infant and toddler participants on their core knowledge of object properties. Coded video footage of infant and child testing sessions. Participated in weekly lab meetings to discuss relevant literature and project research questions, hypotheses, design, and results

Aug 2016 – May 2019 **Memory and Aging Lab**, The College of New Jersey
Research Team Manager | PI: Tamra Bireta, Ph.D.
 Participated in and led discussions of research questions and hypotheses, study design, and research protocol during lab meetings. Managed data collection. Prepared professional conference presentations.

GRANTS & AWARDS

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| 2023 - 2025 | U.S. Department of Health and Human Services, Early Care and Education Research Scholars: Head Start Dissertation Grant (\$49,992)
Awarded by the Administration for Children and Families: Two-year dissertation study, <i>Interagency Training to Promote Culturally Responsive, Family-Centered Home Visiting and Pediatric Service Integration</i> |
| 2023 | Doctoral Travel Grant for Global Opportunities (\$1,500)
Awarded by Lehigh University: <i>Poster and symposium presentations at the International School Psychology Association Annual Conference (Bologna, Italy) and the World Association for Infant Mental Health World Congress (Dublin, Ireland)</i> |
| 2023 | School Psychology Program Professional Development Fund (\$500)
Awarded by Lehigh University: <i>Poster and symposium presentations at the International School Psychology Association Annual Conference (Bologna, Italy) and the World Association for Infant Mental Health World Congress (Dublin, Ireland)</i> |
| 2023 | Diversity Committee Student Travel Grant (\$300)
Awarded by Lehigh University: <i>Poster presentation at the Society for Research in Child Development Biennial Meeting, Salt Lake City, UT</i> |
| 2023 | Dean's Scholarship Student Travel Award (\$900)
Awarded by Lehigh University College of Education: <i>Poster presentation at the Society for Research in Child Development Biennial Meeting, Salt Lake City, UT</i> |
| 2022 | Diversity Committee Student Travel Grant (\$300)
Awarded by Lehigh University: <i>Paper presentations at the Parents as Teachers International Conference, Denver, CO</i> |
| 2022 | Dean's Scholarship Student Travel Award (\$900)
Awarded by Lehigh University College of Education: <i>Paper presentations at the Parents as Teachers International Conference, Denver, CO</i> |
| 2022 | Dean's Scholarship Student Travel Award (\$959) |

Awarded by Lehigh University College of Education: *Paper presentation at the National Association of School Psychologists Annual Meeting, Boston, MA*

- 2021** **Diversity Committee Student Travel Grant (\$200)**
Awarded by Lehigh University College of Education: *Paper presentation at the National Association of School Psychologists Annual Meeting, Boston, MA*
- 2020** **Diversity Committee Student Research Grant (\$470)**
Awarded by Lehigh University: *Variability in Teacher Self-Efficacy Among Linguistically Diverse Preschoolers: Student-Teacher Relationship as a Moderator*
- 2018** **Mentored Undergraduate Summer Experience Research Grant (\$2,500)**
Awarded by The College of New Jersey: *Evidence for Greater Processing Requirements for Semantic Versus Physical Isolation Effects*
- 2018** **Department of Psychology Research Travel Grant (\$650)**
Awarded by The College of New Jersey: *Poster presentation at the 59th Psychonomic Society Annual Meeting, New Orleans, LA*

PROFESSIONAL PRESENTATIONS

* denotes mentored student

SYMPOSIA

Wood, C. N. & Manz, P. H. (July 2023). *Little Talks: Fostering Literacy and Language Development*. Symposium presented at the International School Psychology Association Annual Conference, Bologna, Italy.

PAPERS

Lopez, K., Hyland, J., DePierro, S., Faek, O., **Wood, C. N.**, & Manz, P. H. (February 2025). *The Growth of Parent Involvement in Home-Visiting Organizations*. Paper presented at the National Association of School Psychologists Annual Meeting, Seattle, WA.

Manz, P. H., **Wood, C. N.**, & Gross, Y. (August 2022). *Individualizing Services: Process and Outcomes*. Paper presented at the Parents as Teachers Annual International Conference, Denver, CO.

Wood, C. N., & Manz, P. H., & Gross, Y. (August 2022). *Parental Perspectives on Care Coordination*. Paper presented at the Parents as Teachers Annual International Conference, Denver, CO.

Gross, Y., **Wood, C. N.**, & Manz, P. H. (August 2022). *Using the PIEL to Measure Parent Involvement*. Paper presented at the Parents as Teachers Annual International Conference, Denver, CO.

Sole, M., **Wood, C. N.**, Koller, K., & Manz, P. H. (February 2022). *Examining Early Communication Trajectories in English- and Spanish-speaking Children*. Paper presented at the National Association of School Psychologists Annual Meeting, Boston, MA.

POSTERS

Wood, C. N., Manz, P. H., & Hyland, J. L. (May 2025). *Linking for Little Ones: Interagency Training to Promote Family-Centered Home Visiting and Pediatric Service Integration*. Poster presented at the Society for Research in Child Development Biennial Meeting, Minneapolis, MN.

Lopez, K., Hyland, J., **Wood, C. N.**, & Manz, P. H. (August 2024). *American Indian and Alaska Native Parents' Perceptions of Language Development*. Poster presented at the American Psychological Association Annual Convention, Seattle, WA.

Wood, C. N. & Manz, P. H. (June 2024). *The Extent of Integration of Pediatrics and Other Child Service Systems for Infants and Toddlers*. Poster presented at the National Research Conference on Early Childhood, Arlington, Virginia.

Wood, C. N. & Manz, P. H. (June 2024). *Development of Interagency Training to Promote Service Coordination Between Home Visiting and Pediatric Healthcare Systems*. Poster presented at the National Research Conference on Early Childhood, Arlington, Virginia.

Lopez, K., Hyland, J., Manz, P. H., **Wood, C. N.**, Gross, Y., & Lee, M. (June 2024). *Multisystem Developmental Screening: Parents' and Pediatric Providers' Perceptions*. Poster presented at the National Research Conference on Early Childhood, Arlington, Virginia.

Wood, C. N. & Manz, P. H. (May 2024). *Interagency Training to Promote Culturally Responsive, Family-Centered Home Visiting and Pediatric Service Integration*. Poster presented at the Cross University Collaborative Mentoring Conference, New York City, NY.

Damiano, N.* & **Wood, C. N.** (April 2024). *Obsessive-Compulsive Disorder: Comparing Effectiveness of Psychological and Pharmacological Treatment Methods*. Poster presented at the College of New Jersey Celebration of Student Achievement, Ewing, NJ.

Damiano, N.* & **Wood, C. N.** (March 2024). *Obsessive-Compulsive Disorder: Comparing Effectiveness of Psychological and Pharmacological Treatment Methods*. Poster presented at the Eastern Psychological Association, Philadelphia, PA.

Wood, C. N. & Manz, P. H. (July 2023). *Infant and Toddler Language Development Trajectories Across Linguistically Diverse Households*. Poster presented at the World Association for Infant Mental Health, Dublin, Ireland.

- Manz, P. H. & **Wood, C. N.** (July 2023). *Partnering to Attain Cultural Specificity in Home-Based Communication and Language Interventions for Infants and Toddlers*. Poster presented at the World Association for Infant Mental Health, Dublin, Ireland.
- Wood, C. N.** & Manz, P. H. (March 2023). *Communication Trajectories of Infants and Toddlers in English- and Spanish-speaking Families*. Poster presented at the Society for Research in Child Development Biennial Meeting, Salt Lake City, UT.
- Wood, C. N.** & Manz, P. H. (August 2022). *Early Childhood Parent-Child Relationship Quality Impacts on Preschool Student-Teacher Relationships*. Poster presented virtually at the American Psychological Association Annual Meeting.
- Wood, C. N.**, Manz, P. H., & Sawyer, B. (February 2022). *Student-Specific Teacher Self-Efficacy: Variability Among Linguistically Diverse Students*. Poster presented at the National Association of School Psychologists Annual Meeting, Boston, MA.
- Flaherty, G., & **Wood, C. N.** (February 2022). *A Call to Action: School Psychologists in Inclusive Post-Secondary Education*. Poster presented at the National Association of School Psychologists Annual Meeting, Boston, MA.
- Wood, C. N.**, Manz, P. H., Sawyer, B., & Fu, J. (April 2021). *Variability in Teacher Self-Efficacy Among Linguistically Diverse Preschoolers: Student-Teacher Relationship Quality as a Predictor*. Poster presented virtually at the Society for Research in Child Development Biennial Meeting.
- Wood, C. N.**, Solé, M., Koller, K., & Manz, P. H. (February 2021). *Expressive Communication Patterns of Dual Language Learners in Early Childhood*. Poster presented virtually at the National Association of School Psychologists Annual Meeting.
- Wood, C. N.**, Manz, P. H., & Sawyer, B. E. (February 2021). *Variability in Student-Specific Teacher Self-Efficacy for Diverse Students*. Poster presented virtually at the National Association of School Psychologists Annual Meeting.
- Perrella, M., **Wood, C. N.**, & Cole, C. (February 2021). *Autism in Inclusion Classrooms: Supporting General Education Teachers*. Poster presented virtually at the National Association of School Psychologists Annual Meeting.
- Franklin-Gillette, S., **Wood, C. N.**, Rosenthal, E., & DuPaul, G. (February 2021). *Leveraging School Involvement to Help Students Cope with Global Crises*. Poster presented virtually at the National Association of School Psychologists Annual Meeting.
- Wood, C. N.**, Oflazian, J., & Bireta, T. J. (August 2020). *Isolated on Multiple Dimensions: The Impact on the von Restorff Effect*. Poster presented virtually at the American Psychological Association Annual Meeting.
- Bireta, T. J., **Wood, C. N.**, Brulinkski, C., Lilo, E., Scallo, F., Trent, I., Dolan, A., Denicola, G., Leong, K., Loukides, K., & Gallo, I. (March 2019) *The Impact of Distinctiveness on the*

von Restorff Effect. Poster presented at the 90th Eastern Psychological Association Annual Meeting, New York City, NY.

Bireta, T. J., & **Wood, C. N.** (November 2018). *Not All Isolation Effects are Created Equally: Evidence for Greater Processing Requirements for Semantic Vs. Physical Isolation Effects*. Poster presented at the 59th Psychonomic Society Annual Meeting, New Orleans, LA.

Wood, C. N. (May 2018). *The Interactive Effects of Bilingualism and ADHD on the Language Development and Executive Functioning of Children*. Poster presented at the College of New Jersey Celebration of Student Achievement, Ewing, NJ.

Bireta, T. J., Fine, H., & **Wood, C. N.** (March 2018). *Aging and Working Memory Effects with Backward Recall*. Poster presented at the 89th Eastern Psychological Association Annual Meeting, Philadelphia, PA.

PROFESSIONAL DEVELOPMENT & COMMUNITY

DuPaul, G., Manz, P. H., **Wood, C.**, Sierzega, G., & Bracaliello, C. (2024, March 19). *Graduate Research Grants* [Panel presentation at Lehigh University College of Education, Bethlehem, PA].

Manz, P. H., **Wood, C.**, & Lopez, K. (2022, November 14). *Families' Readiness for Children's School Entry: Supporting Engagement and Collaboration* [Presented for the Bee Ready Mobile Outreach Pilot Program community partners in Easton, PA].

Wood, C., & Sawyer, B. (2021, August 5). *Building Positive Interactions with Children and Families While Increasing Language Development: Focus on Dual Language Learners* [Presented at the Lehigh Valley Child Centers Professional Development Day in Bethlehem, PA].

Wood, C., & Dueñas, A. (2021, April 21). *Parent Training and Coaching Through an Empowerment Lens* [BACB Authorized Continuing Education (ACE) Behavior Skills Training presented virtually to the Lehigh University Autism Services Clinic].

Manz, P.H., Cai, Y., Lee, M., Gross, Y., Koller, K., & **Wood, C.** (2020, May 28). *Tailoring Early Language and Literacy Strategies to Parents and Children: Application of Little Talks in Tribal Home Visiting* [webinar].

PUBLICATIONS

EMPIRICAL ARTICLES

Wood, C. N., Manz, P. H., Sawyer, B. E., & Fu, J. (2024). The influence of student language and student-teacher relationships on student-specific teacher self-efficacy in early childhood. *Bilingual Research Journal*, 47(2), 134-148.

Dueñas, A. D., **Wood, C.**, Maher, C. E., & Sanchula, G. (2022). Component analysis of a peer training program for teaching social responsiveness to neurotypical preschoolers. *Education and Treatment of Children*, 1-5.

MANUSCRIPTS IN PREPARATION

Wood, C. N., Manz, P. H., DuPual, G., Sawyer, B., & Hyland, J. (2024). The extent of integration of pediatrics and other child service systems for infants and toddlers. *Under review*.

Manz, P. H., Lee, M., Levert, D., **Wood, C. N.** (in preparation). Family-centered integrated infant/toddler services: Voices from Early Head Start Parents of children with developmental disabilities.

Manz, P. H., Fu, Q., **Wood, C. N.**, Lee, M., Levert, D., & Gross, J. (in preparation). Expanding conceptualization of parent involvement in children's development: the Parent Involvement in Early Learning – Revised.

Manz, P. H., Fu, Q., Gross, J., **Wood, C. N.**, Lee, M., & Levert, D. (in preparation). Assessing parent involvement in early learning among home visited toddlers: A replication study.

PEER-REVIEWED MEDIA ARTICLES

Balzarotti, A., **Wood, C.**, & Brown, E. S. (2022, April 1). Implementing Peer Support Arrangements in Schools. *Autism Spectrum News*.
<https://autismspectrumnews.org/implementing-peer-support-arrangements-in-schools/>

Wood, C., Thatcher, A., & Brown, E. S. (2022, January 1). A Guide to Implement Video Self-Modeling to Teach a Variety of Skills. *Autism Spectrum News*.
<https://autismspectrumnews.org/a-guide-to-implement-video-self-modeling-to-teach-a-variety-of-skills/>

Wood, C. & Lauriello, J.C. (2021, September 23). Identifying why challenging behavior occurs: Tips for prevention. *Autism Spectrum News*.
<https://autismspectrumnews.org/identifying-why-challenging-behavior-occurs-tips-for-prevention/>

TEACHING EXPERIENCE

Spring 2024 Fall 2024	PSY 323: School Psychology , The College of New Jersey, Ewing, NJ <i>Adjunct Instructor</i> Teaching an advanced seminar class that introduces the field of school psychology (21 undergraduate students); topics include intellectual and achievement testing, academic and social/emotional/behavioral assessment and intervention, multi-tiered systems of support, consultation methods,
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prevention programs, culturally responsive practices, early childhood, pediatric school psychology, and legal and ethical issues. Experienced in teaching class both in person and virtually.

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| Fall 2023
Spring 2024 | PSY 220: Development Across the Lifespan , The College of New Jersey, Ewing, NJ
<i>Adjunct Instructor</i>
Taught a systems-ecologically framed undergraduate course of 28 students; lecture topics range from infant to older adult physical, cognitive, and socioemotional development. |
| Fall 2023
Spring 2025 | PSY 217: Psychological Disorders , The College of New Jersey, Ewing, NJ
<i>Adjunct Instructor</i>
Taught a systems-ecologically framed undergraduate course of 28 students; topics include theory, treatment, and assessment of psychological disorders and introductions to the major categories of diagnosis as described in the DSM-5. |
| Fall 2022 | SCHP 404: Applied Behavior Analysis , Lehigh University, Bethlehem, PA
<i>Teaching Assistant Course Instructor: Lauren Moulton, Ph.D.</i>
Assisted with lecture planning and delivery and supervised four graduate students' fieldwork projects (single case design studies in schools). |
| Spring 2018
Fall 2018
Spring 2019 | CCS 53: Literature Study , The College of New Jersey Career and Community Studies Program, Ewing, NJ
<i>Co-Instructor Course Supervisor: Bryana Demonte, M.A.</i>
Developed lecture plans and assignments and co-led lectures for classes of 7-9 undergraduate students with intellectual disabilities. |