Report to the DC Children and Youth Investment Trust Corporation

Logic Models and Outcomes for Early Childhood Programs

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Executive Summary

The primary purpose of this report is to provide revised logic models and measurable outcomes for the early childhood programs of the DC Children and Youth Investment Trust Corporation (DCCYIT). The logic model was revised from the initial draft of the Board of Directors of DCCYIT using the framework and terminology developed by the United Way Foundation of America.[1] The report combines both an academic and applied research perspective on child development, and is intended to complement, not duplicate in any way, the work that has already been completed by the DCCYIT in this program area.

The report focuses on Early Childhood Development and contains a brief overview of the research literature that informs our conceptualization of the logic model and proposed outcomes. We have taken this approach because we believe that the outcomes derived from theory and basic research are important and using them in applied research will be helpful to the DCCYIT for performance tracking.

The proposed outcomes cover a range of domains. We believe that the proposed outcomes are important for child development, and are therefore appropriate for use in assessing program outcomes. For example, much previous research has targeted cognitive ability and academic achievement as the sole indicators of healthy development during early childhood. Although we have included these outcomes, we have taken a more holistic approach by including outcomes in the physical, emotional and social domains. The most valid measures may differ by age and by the purpose of the program. This report can be used as a tool by individual programs to determine which outcomes and measures are most pertinent.

We recommend that users and practitioners embrace modest expectations for some of these program outcomes; no single program strategy can accomplish all of the outcomes that these programs have been implemented to address. Also, different outcomes can be expected at different time points, but expectations should be tempered regarding immediate change for any one outcome. For instance, DCCYIT may expect programs to improve parenting practices in Early Childhood Development programs in the short term, but will probably not see improvements in children's cognitive functioning until a significant amount of time has passed. We urge programs of the DCCYIT to track appropriate outcomes in order to assess program effectiveness. This process should help to improve program quality.

The outcomes identified here are not exhaustive, and they can be measured in many ways. The indicators we have suggested range from simple to advanced assessments. What is easiest to document may not be the most meaningful and accurate measure. In addition, outcome monitoring must take into consideration the issues regarding the collection of data from children of several ages.

[1] United Way of America (1996). Measuring Program Outcomes: A Practical Approach. Alexandria, VA: United Way of America Press. See glossary of outcome measurement terms for details.

A large part of the decision regarding which outcomes are monitored will depend on this factor as well as the cost associated with such an exercise.

Early Childhood Development Programs

These six programs have diverse goals, but share a focus on the importance of children's early years and on the pivotal role parents play in shaping children's lives. Some of the programs include a home visiting component that allows home visitors to see the environments in which families live, gain a better understanding of families' needs, and therefore tailor services to meet those needs. Programs differ in their specific goals, the level of services that they offer and in the populations that they serve. They also differ in the onset, duration, and intensity of services. Some programs begin during pregnancy, while others begin at birth or later. Programs last from weeks to years, and scheduled visits in the programs that include home visiting range from weekly to monthly.

We have recommended outcomes for both parents and children in these programs. Initial outcomes primarily include changes in parents' knowledge and attitudes. Intermediate and longer-term outcomes encompass changes in parenting behavior and outcomes, and in child outcomes.

Initial parent outcomes include increases in knowledge in the following areas:

- The importance of prenatal care
- Child development milestones
- Parenting skills
- The importance of reading to children and other enrichment activities
- Child health needs (i.e., nutrition, immunizations)
- Safety practices in the home
- The importance of quality child care
- Services available for children and families in the community

Intermediate/longer-term outcomes for parents in these early childhood programs include:

- Regular prenatal care, resulting in the delivery of healthier children
- Consistent and reliable family planning
- Mental and physical health
    - Use of services to treat addictions and mental illness
    - Social and community support
    - Use of physical health services
- Supportive parenting and child-rearing practices
- Positive and nurturing home environment
- Children are not abused or neglected
- Utilization of service providers to coordinate services for children

Intermediate child outcomes are expected in the following domains:

- Cognitive development
- Language development
- Social and emotional development
- Physical health and motor development

Longer-term child outcomes are expected in the following domains:

- School readiness (includes the above components, plus approaches to learning)
- Improved school success at the end of kindergarten and first grade

We have selected these outcomes using a combination of theory and pragmatism. The extent to which the DCCYIT seeks to use them for program tracking will ultimately depend on the cost associated with such an exercise. Many of these outcome measures have established validity and reliability and are some of the best in the field. They are also sturdy enough to provide guidance to the practitioners of DCCYIT funded programs who wish to use them for assessment.

Glossary of Outcome Measurement Terms[2]

Inputs are resources that are dedicated to or consumed by programs. Examples include facilities, staff time, volunteer time, money, and supplies. Inputs also include constraints such as laws and regulations.

Activities are what the program actually does, using inputs, in order to fulfill its mission. For example, providing classes for parents in order to disseminate knowledge/information about effective parenting skills, or providing after school activities for youth.

Outputs are the direct products of program activities. They are usually measured by the amount of work accomplished, for example, the number of parenting skills classes taught, or the number of youth who participated in after school activities.

Outcomes are benefits for the people served by the program during or after participation. Outcomes include changes in knowledge, skills, attitudes, or behavior, and can be divided into three categories:

Initial outcomes are the first changes for participants, and are very closely influenced by the program. Initial outcomes are often changes in knowledge, attitudes, or skills. For example, an initial outcome of participation in a parenting class might be the knowledge that reading to young children is important.

Intermediate outcomes are the step between initial outcomes and longer-term outcomes. They can be changes in behavior that result from the acquisition of new knowledge and skills. To follow from the previous example, an intermediate outcome might be that parents are reading to their children more often.

Longer-term outcomes are the ultimate outcomes a program wants to achieve. They can be changes in participants' condition or status. For example, if an intermediate outcome is that parents are reading more to their young children, a longer-term outcome might be that children are developing age-appropriate literacy skills.

Indicators are used to help a program know whether the desired level of inputs, activities, outputs, and outcomes are being achieved. They are observable, measurable changes, and they must be unambiguous. For example, terms such as "adequate" and "substantial" (i.e., "participants show substantial improvement") are not specific enough, but finding a change in the *number* and *percent* of participants achieving an outcome is specific and measurable.

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[2] United Way of America (1996). Measuring Program Outcomes: A Practical Approach. Alexandria, VA: United Way of America Press.

EARLY CHILDHOOD DEVELOPMENT PROGRAMS

Introduction

In this report, we describe and summarize the Early Childhood Development Programs of the DC Children and Youth Investment Trust Corporation (DCCYIT). We also provide justification for why and how program interventions focused on parenting are important for early childhood development, and the pathways through which parenting affects young children's development. We identify several parent and child outcomes that are likely to be affected by early childhood programs. A conceptual model as well as a *revised* logic model for the early childhood programs of the Trust are also provided. The identification of outcomes in this logic model provides a foundation for the identification of measurable indicators that can be used for performance tracking.

Background

Early childhood is an opportune time for intervention because development during this time period sets the stage for later physical, social and cognitive development.[3] The six early childhood programs of the Trust represent diverse routes through which optimal child development outcomes for pre-school age children may be achieved. The program interventions range from relatively brief (several weeks), to multi-year initiatives that provide a range of services to children and families aimed at supporting family functioning. The primary recipients of such interventions are parents. Although these six programs are unique in many ways, they share at their core the common goal of enhancing child development indirectly through changes in parents' behavior and children's home environments. In some cases, there are limited direct interventions with the child. Detailed summaries of these programs are provided in **Table 1.1**.

What do we know about family-focused programs, and why are they important for early child development?

There are several types of early childhood programs; some are designed to impact children directly through activities with them, some seek to impact children indirectly through services provided to parents, and some utilize a combination of the two approaches.[4] *Child-focused programs* include Head Start, preschool classes, or quality child-care, and have the intent of improving school readiness and later child outcomes by offering quality classes and care. *Family-focused programs* utilize home visiting, classes for parents, or a combination of the two, with the goal of impacting children indirectly

[3] Bornstein, M.H. (1989). Sensitive periods in development: Structural characteristics and causal interpretations. Psychological Bulletin 105(2): 179-197.
Belsky, J. C., Hertzog, C., & Revine, M. (1986). Causal analyses of multiple determinants of parenting: Empirical and methodological advances. In M. E. Lamb, A. L. Brown, & B. Rogoff (Eds.), Advances in Developmental Psychology, Volume 4 (pp. 153-202). Hillsdale, NJ: Lawrence Erlbaum Associates Publishers.
[4] Gomby, D. S., Larner, M. B., Stevenson, C. S., Lewit, E. M., & Behrman, R. E. (1995). Long-term outcomes of early childhood programs: Analysis and recommendations. Future of Children, 5(3), 6-24.

by teaching parents about child development and strengthening their parenting skills. *Two-generation programs* combine the two approaches by offering direct interventions for children, as well as parent skill-building. The early childhood programs of the DCCYIT fall in the second category—family-focused programs. They seek to impact child outcomes through home visits and classes or support groups for parents.

Literature reviews of early childhood development research have identified that parenting is an important input into children's development.[5] While some researchers have questioned the influence of parenting relative to the importance of genetics and peers,[6] a vast body of research has continued to support the understanding that what young children learn, how they react to events around them and what they expect for themselves and others are affected by their relationships with their parents, the behaviors of their parents and their home environments.[7] One explanation for developmental differences among young children and subsequently in older children can therefore be traced to parental behaviors and practices and subsequent infant care-giving. In sum, parents are better able to assume responsibility for their child's development if they are aware of the impact of a positive and nurturing home environment and if they feel confident of their abilities to parent and to contribute to their children's learning.[8]

The programs of the DCCYIT seek to affect parents either through home visits, classes or support groups. The majority of evaluations conducted to assess the effectiveness of parenting programs have been done on home visitation programs (e.g., Healthy Families America, Parents as Teachers, The Home Instruction Program for Preschool Youngsters) which may or may not include classes for groups of parents.[9] Such programs generally seek to provide parents with social support, link families with community services, and provide parents with education about child development and parenting. They also seek to ensure children's good health by promoting the use of preventative health services that include prenatal care, immunizations, well-baby checkups, and improved birth outcomes. The underlying assumption is that adults can parent more effectively if they have an understanding of child development and effective parenting approaches, can provide more books and stimulating toys for their children, have the social support they need, and know what health services their children need. Parents will then be warmer and more responsive, will use discipline effectively and appropriately (without resorting to harsh physical punishment), will create a stimulating home environment, and will seek preventive medical care for their children. As a result, positive outcomes for children should follow.

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[5] Brody, G. J. & Flor, D. L. (1997). Maternal psychological functioning, family processes and child adjustment in rural, single parent African-American families. Developmental Psychology, 33, 1000-1011.
[6] Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. Psychological Review, 102(3),458-489.
[7] Collins, W. A. & Laursen, B. (1999). Minnesota Symposia on Child Psychology: Relationships as developmental contexts. Mahwah, NJ: Erlbaum.
[8] Ramey, C. T. & Campbell, F. A. (1984). Preventative education for high-risk children: Cognitive consequences of the Carolina Abecedarian Project. American Journal of Mental Deficiency, 88, 515-523.
[9] Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations--analysis and recommendations. Future of Children, 9(1), 4-26.

Despite the fact that home visitation programs sound very promising, such programs have met with mixed success:[10]

- Home visiting programs may lead parents to change their attitudes but not necessarily their behaviors related to their relationships with their children or the home environment.[11]
- Home visiting programs do not produce benefits in immunization rates or in the number of well-child visits, or the number of medical or dental visits in comparison with control groups.[12]
- Home visiting programs produce few health-related benefits for children.[13]
- Home visiting programs produce few benefits in children's development and achievement.[14]
- Home visiting may be beneficial in decreasing child maltreatment. Some programs have produced differences in maternal attitudes related to abuse and neglect in mothers' use of harsh discipline and in assessments of the risk of abuse and neglect. [15]

In sum, evidence from the field suggests that home visiting interventions have mixed effects in changing parenting practices and affecting targeted child outcomes. These interventions could be improved if quality is consistently maintained (e.g., staff training), parents are highly engaged, and services are offered at an adequate level of intensity and duration.[16]

Prior research: A framework for assessing how parenting affects early childhood outcomes

What are the pathways through which parenting affects young children's development?

The literature has identified several pathways through which parenting can affect children's development: parents' own mental health; parental beliefs about parenting; parenting styles; and the home environments that parents create for their children. Activities with the child also represent a critical pathway, both in and out of the home. These pathways interact in families in different ways.[17]

Parent Mental Health: There are important links between economic hardship, mental health, and parenting. Low-income parents are at greater risk for depression and other forms of psychological distress such as low self-esteem and self worth, and may experience more negative life events and have fewer resources with which to cope with such adverse experiences.[18] Furthermore, a link has been found between maternal mental health and child development.[19] For example, in a study

[10] Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations--analysis and recommendations. Future of Children, 9(1), 4-26.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.
[15] Ibid.
[16] Ibid.
[17] National Research Council (2000a).
[18] Gazmararian, J. A., James, S. A., & Lepowski, J. M. (1995). Depression and black and white women: The role of marriage and socioeconomic status. Annals of Epidemiology, 5, 455-463.
[19] Radke-Yarrow, M., Nottelmann, E., Martinez, P., Fox, M. B., & Belmont, B. (1992). Young children of affectively ill parents: A longitudinal study of psychosocial development. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 68-76.

comparing children of depressed and non-depressed mothers starting when children were between 1.5- and 3.5-years-old, and followed up at age 5 or 6, it was found that maternal depression was related to disruptive behavior in children at follow-up. As for why maternal mental health would have an effect on child development, research has shown that poor mental health is associated with harsh, inconsistent, and detached parenting.[20] This parenting style is associated with negative child outcomes.

Some researchers have also found strong associations between economic hardship, parental psychological well-being and child well-being in intact families. Pre-school age boys in such homes are more likely to exhibit problem behaviors. [21] In the case of depressed mothers in low-income families, some research has shown that mothers' responses to the needs of their children tend to be less consistent and positive.[22] Other writers have also shown that reduced financial resources among black, rural single-parent families is associated with low maternal self-esteem which is associated with deterioration in family routines and the quality of mother-child interactions.[23] Thus it appears that low socioeconomic status takes a toll on parents' mental health and the ability to parent positively, which leads to more negative child outcomes.

Parental Beliefs: Parenting beliefs and values are believed to affect parenting practices and child rearing. Although researchers have found some relationship between socioeconomic status and parental beliefs, not much research has been done to explain how these differences translate into outcomes and are consequential for children.[24] Higher income parents have been found to rely more on shame, guilt and reasoning for disciplining as opposed to commands and imperatives.[25] Some researchers have also found that mothers who value conformity are less likely to emphasize reading and more likely to control children's activities using disciplinary means.[26] Mothers that do not value conformity as highly, on the other hand, are more likely to emphasize reading and exploration and are less concerned about disciplining. Social class is only one of many potential influences on parents' belief systems.[27] Other factors include parental beliefs about childrearing, unrealistic expectations of children's capabilities, social isolation, and psychopathology.[28] In sum, although researchers have found modest relationships between socio-economic status and some parental beliefs, there is no conclusive evidence that these parenting values explain differences in outcomes for young children.

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[20] McLoyd, V.C. (1997). The impact of poverty and low socio-economic status on the socio-emotional functioning of African-American children and adolescents: Mediating effects. Pp. 7-34 in Social and Emotional Adjustment and Family Relations in Ethnic Minorities. R. Taylor & M. Wang, eds. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
[21] National Research Council (2000a).
[22] McLoyd, V. C. (1997).
[23] Brody, G. J. & Flor, D. L. (1997). Maternal psychological functioning, family processes and child adjustment in rural, single parent African-American families. Developmental Psychology, 33, 1000-1011.
[24] National Research Council (2000a).
[25] Hoff-Ginsberg, E.,& T. Tardif. (1995). Socioeconomic status and parenting. Pp. 161-187 in Handbook of Parenting. Volume 4. M.H. Bornstein, ed. Mahwah, NJ: Lawrence Erlbaum.
[26] Luster, T., Rhoades, K., & Haas, B. (1989). The relation between parental values and parenting behavior: A test of the Kohn Hypothesis. Journal of Marriage and the Family, 51, 139-147.
[27] Sigel, I. E., McGillicuddy-DeLisi, A. V., & Goodnow, J. J. (1992). Parental belief systems: The psychological consequences for children. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Parenting style: Parenting strategies have been found to be associated with the well-being of children. In fact, parenting strategies have been found to mediate the relationship between parental mental health and child well-being.[29] Warm, supportive, firm and democratic parenting (i.e., authoritative parenting) has been found to be related to various positive child outcomes (e.g., positive attitudes toward academics, academic success, and prosocial behaviors). However, research suggests that warm, supportive, firm but non-democratic parenting that permits little independence and autonomy (i.e., authoritarian parenting) is associated with lower academic achievement and a lack of motivation to seek new challenges. Children of parents who give too much autonomy and independence to their children (i.e., permissive parenting) tend to participate in more deviant activities and do not have much motivation to achieve.[30] These research results are based primarily on Caucasian American samples, although the use of authoritarian parenting has also been shown to predict positive academic outcomes among Asian American children.[31] Also, "no-nonsense" parenting (i.e., high levels of parenting control coupled with loving behaviors) is associated with social and cognitive competencies and the development of self-regulatory behaviors.[32]

The Home Learning Environment: Recent work has suggested that the home learning environment is strongly associated with children's cognitive development. Therefore, improving the literacy and learning environment in the home can promote early learning among children. The field has identified important aspects of the home environment that are related to children's well-being.[33] Research using the Home Observation for Measurement of the Environment (HOME), which measures the frequency and type of learning experiences that parents provide, suggests that structure, safety, emotional support, and stimulation are associated with the positive development of children. Some researchers have also found that the more positive learning environments of higher income children account for the gap in test scores of pre-school and school-age children.[34] While parental income is an important resource, education and occupation are strong correlates of the home learning environment, as well. Some writers have found that maternal educational attainment is a strong predictor of cognitive stimulation provided to the child at home.[35] Mothers' provision of verbal

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[28] National Research Council (2000a).
[29]
[30] For reviews of parenting, see Cox, M. (in press). Parent-child relationships. In M. Bornstein, M. Rosenberg, C. Keyes, L. Davidson and K. Moore (Eds), Well-being: Positive development across the lifespan. NY: Lawrence Earlbaum. and Shaffer, D.R. (1994). Social and personality development (3rd edition). Pacific Grove, CA: Brooks/Cole Publishing.
[31] Steinberg, L., Dornbusch, S.M., & Brown, B.B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. American Psychologist, 47, 723-729.
[32] Brody, G.H. & Flor, D.L. (1998). Maternal resources, parenting practices, and child competence in rural, single-parent African American families. Child Development, 69, 803-816.
[33] Bradley, R. H. & Caldwell, B. M. (1984). The HOME Inventory and family demographics. Developmental Psychology, 20, 315-320.
[34] Smith, J. R., Brooks-Gunn, J., & Klebanov, P. K. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), Consequences of growing up poor (pp. 132-189). New York: Russell Sage Foundation.
[35] Miller, J. & Davis, D. (1995). Poverty history, marital history, and quality of children's home environments. Journal of Marriage and the Family, 59, 996-1007.

stimulation has also been found to differ by education and occupation.[36] Researchers have also found that mothers' teaching styles differ by educational attainment—more highly educated mothers use more verbal reinforcement, inquiry, modeling strategies, and read more frequently to their preschool children.[37] Improving the literacy and learning environment of the home is therefore a promising path for fostering positive developmental outcomes for young children.

DC Children and Youth Investment Trust Corporation- Early Childhood Development Programs

Early Childhood Development Conceptual Model

The early childhood development programs of the DCCYIT are expected to generate short and long-term outcomes for children and parents across a variety of domains. In this section of the report, we provide a conceptual model of outcomes for children and parents. The model is based on the premise that children's development is influenced by the families and communities in which they live.[38] The common assumptions underlying the design of the conceptual model are that families with young children have a complicated set of needs, parenting programs ensure that these needs are met and that positive child and parent outcomes are realized. Some program effects are expected to result directly from the delivery of services intended to deal with specific issues or problems; for example, mental health counseling is provided with the purpose of decreasing maternal depression. Other outcomes are expected to occur indirectly; for example, parenting education is provided to mothers to promote children's cognitive development.[39]

Program interventions begin as early as possible in children's lives, involve the children's parents, and ensure that social services are delivered to address children's intellectual, social, and physical needs and school readiness. Interventions also ensure parents' ability to contribute to the overall development of their children and ensure services for children and adults until children enter kindergarten and the first grade. Program goals are to be met by delivering key services to families: case management, home visits, and parent-skill building. This research-based conceptual model is illustrated in **Figure 1.1,** with envisioned short-term and long-term program outcomes for children and parents. This conceptual model provides a foundation for the identification of outcomes from the parenting programs currently funded by DCCYIT.

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[36] National Research Council (2000a).
[37] Laosa, L. M. (1983). School, occupation, culture and family. In E. Sigel & L. Laosa (Eds.), Changing families (pp. 79-135). New York: Plenum Press.
[38] Bronfenbrenner, U. (1979). The ecology of human development. Cambridge, MA: Harvard University Press; Bronfennbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. Developmental Psychology, 22(6), 723-741.
[39] St.Pierre, R. G. & Layzer, J. I. (1999). Using home visits for multiple purposes: The Comprehensive Child Development Program. Future of Children, 9(1), 134-151.

***What* parent and child outcomes can be influenced by early childhood development programs?**

Child Outcomes

Since the initial outcomes of the Trust's early childhood programs are expected to be changes in parents' knowledge and skills, outcomes for children are expected to be intermediate or longer-term. Intermediate outcomes include those in the domains of health, early cognitive and language development, child abuse and neglect, and selected aspects of social and emotional development such as self-regulation and interpersonal skills. Longer-term outcomes include those in the domains of school readiness (which includes the areas already mentioned, as well as approaches toward learning) and early school achievement. A summary of the outcomes for both parents and children in the early childhood development programs of the Trust are provided in **Box 1**.

Intermediate/Longer-term Outcomes

- Health

Home visiting programs, which represent one type of early childhood development program, seek to ensure children's good health by promoting the use of preventative health services. Birth outcomes and good child health are important in their own right, because good health is an essential building block for children's general development. Several early childhood development programs seek to ensure children's good health by promoting the use of preventative health services such as prenatal care, immunizations, or well-baby check-ups.[40] Outcomes in this category include aspects of child development such as health status and motor development,[41] as well as factors that influence child health, such as immunization rates, number of well-child visits, and number of medical or dental visits. Some evaluations of home visiting programs[42] also measure the number of pre-term births and low birth-weight babies.

- Cognitive Development

One of the most commonly measured outcomes in the assessment of early childhood intervention programs is that of achievement, knowledge and skill acquisition, and problem-solving abilities as measured by standardized test performance. Cognitive development is also a commonly measured school readiness outcome, and includes physical knowledge, which is derived from observation and interaction (e.g., the way in which an object acts on an inclined plane); logico-mathematical knowledge (e.g., knowledge about similarities, differences and associations when

[40] Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations--analysis and recommendations. Future of Children, 9(1), 4-26.
[41] Halle, T., Zaff, J., Zaslow, M., Calkins, J., & Margie, N. G. (2000). Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies. Part II: Reviewing the literature on contributing factors to school readiness. Report prepared for the John S. and James L. Knight Foundation. Washington, DC: Child Trends.

looking across objects, events or people); and social-conventional knowledge (e.g., knowledge of the letters of a particular alphabet).[43] Although the evaluation literature is vast and diverse in focus, many studies have shown a clear pattern regarding impacts of early direct interventions on children's test performance.[44] Such effects have not been found for parenting programs thus far, but measures of children's knowledge should serve as an indicator of how well families prepare children for school.

- Language Development

The development of language abilities is a central component of cognitive development. Early language acquisition occurs in two domains: verbal and emergent literacy. Verbal language includes the ability to listen to and comprehend what is heard, the ability to speak clearly, and an understanding of the social conventions of speech (such as turn-taking). Emergent literacy is an early understanding of print and writing—for example, understanding that written letters represent sounds, showing an interest in writing, and understanding that stories have a beginning, middle and end.[45] The home environment and early language inputs are central to language development. For example, it has been found in several studies that the amount that children are talked to by their parents is related to the size of their vocabularies several years later.[46] Furthermore, as one would expect, children who are read to frequently by their parents have better developed emergent literacy skills at kindergarten entry. Thus, it would appear that interventions that target parents' conversations with and reading to their children should have a positive impact on children's language development.

- Social and Emotional Development

Recent research has placed increasing emphasis on assessing the processes of social and emotional development and outcomes in this domain for children.[47] The social development domain refers to the child's ability to interact socially; positive interactions with others require such skills as the ability to take turns and to cooperate. Emotional development includes a child's perception of himself/herself, the ability to understand the emotions of other people and the ability to interpret and express one's own feelings.[48] Self-regulation (the ability to regulate one's own emotions and behavior) is a critical early mediator of successful development and is an often-used outcome of focus for early intervention services. Early social interactions serve as an essential vehicle for children to learn about

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[42] Ibid.
[43] Ibid.
[44] Campbell, F. A. & Ramey, C. T. (1995). Cognitive and school outcomes for high-risk African-American students in middle adolescence: Positive effects of early intervention. American Educational Research Journal, 32(4), 743-772; National Research Council (2000). From neurons to neighborhoods: The science of early childhood development. Institute of Medicine. Washington, DC: National Academy Press.
[45] Zaslow, M., Calkins, J., & Halle, T. (2000). Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies. Part I: Defining and assessing school readiness—building on the foundation of NEGP work. Report prepared for the John S. and James L. Knight Foundation. Washington, DC: Child Trends.
[46] National Research Council (2000). From neurons to neighborhoods: The science of early childhood development. Institute of Medicine. Washington, DC: National Academy Press.
[47] McCune, L. B., Kalmanson, Fleck, M.B., Glazewski, B., & Sillari, J. (1990). An interdisciplinary model of infant assessments. In J. P. Shonkoff & S. J. Meisels (Eds.), Handbook of early childhood intervention (pp. 219-245). New York: Cambridge University Press.

how their actions elicit responses from others, how to explore their environments with confidence, and how to experience and deal with thoughts and feelings.[49] Increasingly, programs in the field have used an interpersonal skills and relationship outcome to measure aspects of children's social competence.[50]

Another aspect of social and emotional development is behavior problems—displays of aggressive or maladaptive behavior. Research indicates that children who are exposed to abusive parenting, and who suffer health problems may be at greater risk of displaying aggressive and maladaptive behavior as they grow older.[51] If programs successfully alter parents' behavior and promote healthy development, then long-term benefits might be expected in children's behavior. Outcomes in this domain include problem behaviors such as aggression, acting out in school and other minor anti-social acts.

- Child Abuse and Neglect

Many parenting programs are expected to help decrease parental stress and help parents learn new child-rearing techniques, both of which should lead to reductions in abuse and neglect. Such programs are also intended to reduce the likelihood of household hazards that could injure children. For example, home visiting programs serve a monitoring function since the presence of visitors to the home may decrease the likelihood that parents will abuse or neglect their children.[52] Accurately measuring rates of abuse and neglect, however, is problematic.[53] Measures in this domain include changes in parents' views of parenting or disciplinary practices, and rates of hospitalization or emergency room visits resulting from injuries and ingestion of poisonous substances, which may be proxies for physical abuse or neglect.

Longer-term Child Outcomes

- School Readiness

Much of the current interest in early childhood focuses on the issue of school readiness. School readiness refers to the developmental status in multiple dimensions, of children at the point of entry into kindergarten. Five major domains for outcomes have been identified by The National Education Goals Panel: (1) physical well-being and motor development; (2) social and emotional development;

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[48] Ibid.
[49] Ibid.
[50] Brooks-Gunn, J., Berlin, L. J., & Fuligni, A. S. (2000). Early childhood intervention programs: What about the family? In J. P. Shonkoff & S. J. Meisels (Eds.) Handbook of Early Childhood Intervention (pp. 549-587). New York: Cambridge University Press.
[51] Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations--analysis and recommendations. Future of Children, 9(1), 4-26.
[52] Ibid.
[53] Ibid.

(3) approaches to learning; (4) language development; and (5) cognition and general knowledge.[54] Four of the domains have been discussed above, as they pertain to younger children, and to this we add a description of approaches to learning.

Approaches to learning:

Outcomes that concern *approaches to learning* are central to school readiness. This dimension refers to a child's inclination to use skills, knowledge and capacities. It includes children's openness and curiosity about new tasks; their initiative, task persistence and attentiveness; their reflection, interpretation, imagination, and invention; and their cognitive styles.[55]

- School Performance

There is a frequently replicated finding that there are longer-term impacts of early direct intervention on school performance.[56] It has also been found that early direct interventions for children in poverty, provided during the first five years of life can reduce subsequent grade retention and the use of special services during the middle school years.[57] Academic achievement outcomes, often measured by grade retention, special education placements, and academic achievement scores, have also been found to be affected in the later school years as a result of early childhood intervention programs.[58] Although these results have not been found for parenting and home visiting programs in the research literature, they are still outcomes that such programs should strive for. If parents are better able to help their children be ready for school, then children should exhibit improved school performance.

Parent Outcomes

Outcomes for parents can likewise be short- or long-term. Initial outcomes encompass changes in parents' knowledge and skills, while intermediate and longer-term outcomes include changes in actual parenting behaviors and other benefits that parents may experience (such as improved mental health). The following outcomes cover changes in knowledge and skills in the short-term, which then lead to changes in behavior and other outcomes over time (intermediate and longer-term).

[54] The National Education Goals Panel (1995). Reconsidering children's early development and learning: Toward common views and vocabulary. Washington, DC: National Education Goals Panel.
[55] Ibid.
[56] Campbell, F.A., & Ramey, C.T. (1994). Effects of early intervention on intellectual and academic achievement: A follow-up study of children from low-income families. Child Development 65: 684-698.
Campbell, F. A. & Ramey, C. T. (1995). Cognitive and school outcomes for high-risk African-American students in middle adolescence: Positive effects of early intervention. American Educational Research Journal, 32(4), 743-772.
[57] National Research Council (2000a).

- Parenting and the Home Environment

Many early childhood evaluations have used measures of parenting knowledge, attitudes and behaviors.[59] Several studies use the Knowledge of Infant Development Inventory[60] to guide assessments of parental knowledge. Other studies have used self-administered attitude inventories regarding parental efficacy and satisfaction to measure parent attitudes. Efforts to monitor parenting behaviors have also been guided by the Home Observation for Measurement of the Environment (HOME) Inventory [61] for families of children. This inventory assesses parenting practices using sub-scales that measure acceptance of the child's behavior, opportunities for stimulation, organization of the environment, parental involvement, parental responsivity, and appropriate play materials.

- Maternal Pregnancy Health and Behavior/Family Planning

Although altering maternal pregnancy behaviors and family planning is not an explicit goal for many of the programs, the identification of outcomes in this domain is important since this has implications for children. For example, if mothers are able to defer the birth of a second child, then children are provided with far greater care, and subsequently experience more positive outcomes. [62] The outcome of interest for many studies of the maternal life-course is a reduction in the rate of subsequent births, which many believe leads to positive changes for parents and children in later life. Regarding pregnancy health and behaviors, prenatal exposure to tobacco, alcohol, or illegal drugs is an established risk factor for poor fetal growth,[63] preterm births and neuro-developmental impairment (such as attention deficit disorder, and poor cognitive and language development). Measures of maternal health and behaviors include health monitoring during pregnancy, substance use during pregnancy and the use of prenatal care facilities.

- Parental Mental and Physical Health; Abuse and Neglect

Mothers' psychological immaturity and mental and physical health problems can negatively affect their ability to parent and care for their infants.[64] Parents who grew up in households with punitive rejection, or abusive or neglectful care-giving are at a heightened risk. In addition, poor housing conditions, unemployment, marital discord and isolation from supportive friends and family increase the likelihood of abuse and negatively affect the ability of parents to care for their children. Proxy measures[65] for outcomes of abuse and neglect include enumeration of emergency health care visits,

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[58] National Research Council (2000a).
[59] Ibid.
[60] Ibid.
[61] Ibid.
[62] Ibid.
[63] Olds, D. L., Henderson, C. R., Kitzman, J. H., Eckenrode, J. J., Cole, R. E., & Tatelbaum, R. C. (1999). Prenatal and infancy home visitation by nurses: Recent findings. The Future of Children, 9(1), 45-65.
[64] Olds, D. L., Henderson, C. R., Kitzman, J. H., Eckenrode, J. J., Cole, R. E., & Tatelbaum, R. C. (1999). Prenatal and infancy home visitation by nurses: Recent findings. The Future of Children, 9(1), 45-65.
[65] Accurately measuring rates of abuse and neglect is difficult. First, child abuse and neglect is underreported, although it is possible that programs with a home visiting component will be more likely to report such cases. Second, abuse is a relatively rare event in the population and in the absence of large numbers of program participants, there may be too few participants to

and reports or verified cases of child abuse and neglect, as well as enumeration of hospitalizations for injuries and ingestions.[66]

- Service Utilization and Social Support

Previous research has indicated that services for families facing the greatest challenges need to be intensive and comprehensive, focusing on parents as well as supporting parent-child interaction and child development.[67] A base of support is necessary to respond to the needs presented by the child and the evolving parent-child relationship. This relationship is believed to be a first step in developing the parent's ability to form and sustain secure relationships with others, including his or her own child. A limited number of field evaluations have focused on assessing outcomes in the domain of social support for parents. Outcomes in this domain include parents' use of support groups, parenting education options, service providers, parents enrolling their children in quality (licensed, accredited, stable) preschool programs and child-care and their use of services for the developmental screening of their children. Parent interactions with such forms of social support are believed to promote a supportive atmosphere for new parents and produce stronger relationships and a sense of mutual reciprocity among families in a given community.

Outcome Measurement

Outcomes can be measured in many ways. The logic model identifies outcomes for both children and parents. Wherever possible, measures are recommended that have established validity and reliability in a variety of populations, and for which norms are available. Many of these measures are currently used in national and state surveys, which would make benchmarking at a subsequent stage easy to accomplish. **We recommend a wide range of measures, ranging from simple to more advanced assessments.**

What is easiest to document in terms of time and cost (e.g., knowledge and attitude changes concerning parenting, measured through the use of paper-and-pencil questionnaires), may not be the most meaningful or the most accurate measure. For example, tracking changes in knowledge or attitudes may not be as important as monitoring changes in parent-child interactions. Previous research[68] has shown that relying on parents' self-reports of their interactions with their children, or the reports of program staff may not provide as accurate a picture of those interactions as observations by an unbiased professional. We therefore recommend outcomes that require various techniques for assessment, including standardized tests, and parent reports of their own behaviors or attitudes. The measurement of outcomes may include maternal interviews, observations of the home environment,

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detect a trend over time. Evaluators have therefore used proxy measures of child-maltreatment to measure this outcome. Such indicators include changes in parent's views or parenting or disciplinary practices, hospitalizations, emergency room visits resulting from injuries and ingestions and poisonous substances.

[66] Ibid.

[67] Daro, D. A. & Harding, K. A. (1999). Healthy Families America: Using research to enhance practice. The Future of Children, 9(1), 152-176.

observations of parent-child interactions, child developmental testing and reports by independent observers. Developmental assessments of children may include standardized tests, as well as multiple measures or multiple sub-scales of a single test. The more precise the measurement technique, the more valid and reliable, the more well-known the research literature, and the more costly. A description of selected outcome measures is provided in **Table 1.3.**

What are the unique issues associated with obtaining data and measuring outcomes for younger children?

Although tracking outcomes for young children in early child development programs is a valuable exercise, such measures are often not easy to administer. Young children can neither read nor write, so that distributing paper and pencil questionnaires with machine-scoreable answers to a series of multiple choice questions is not feasible. In-person and one-on-one assessments are therefore required. [69]Assessments should not be lengthy, since children tire easily, and have short attention spans. Individualized assessments also may not reflect children's knowledge, skills and behavior, since young children exhibit individual differences in shyness with unfamiliar adults, or because some children may come from families in which English is not spoken. To add to what is already a complicated scenario, many early child development programs are designed to evaluate the "whole child"—physical well-being and motor development, approaches to learning, language usage, and cognition and general knowledge. Such assessments should involve the collection of information from several sources—parents and teachers, as well as the direct assessment of children themselves. There is also the question of which year should be considered the first year for the collection of baseline data. This is often left up to the discretion of the early childhood development program evaluator.

Early Childhood Development Logic Model - Analysis and Recommendations

The early childhood development logic model has been revised using the framework provided by the United Way of America[70] and is theoretically driven. The DCCYIT provided us with preliminary logic models to which we added inputs, activities, outputs, and outcomes. Additional information required to revise the logic model was obtained from DCCYIT program descriptions. Readers are advised to refer to the glossary of outcome measurement terms for an understanding of the terms used in the logic models.

Outcomes are selected based on how program services are supposed to create change. They are selected for measurement through a combination of theory, research and practice. We have used early childhood development theory to guide the choice of outcomes along a causal path that can

[68]Ibid.
[69] National Center for Education Statistics (2000).

increase confidence that the programs are generating plausible patterns of results. In these models, parent and child outcomes are linked to program activities, goals and objectives. The outcomes that are identified are among the relatively few that have been identified and evaluated in rigorous randomized trials.[71] The revised logic model for early childhood development programs of the DCCYIT is presented in **Table 1.2**.

Summary, Integration and Conclusions

In the past decade, early childhood development programs have been expanded to include multiple family members and to provide many social services. Known as "family-focused programs", these interventions are designed to serve both parents and children at the same time—with cognitive development for children, and parenting skills and training for parents.[72] Most of the programs of the DCCYIT focus on improving parenting skills to promote healthy child development. The programs seek to create change by providing parents with social support; practical assistance, often in the form of case management that links families with other community services; and education about parenting and/or child development. The social support and practical assistance helps to engage families and to build relationships with their children. Beyond these common characteristics, programs differ in their specific goals, the level of services that they offer and in the populations that they serve. They also differ in the onset, duration, and intensity of services. Some programs begin during pregnancy, while others begin at birth or later. Programs last from weeks to years, and scheduled visits range from weekly to monthly.

We have recommended outcomes for both parents and children in these programs. The outcomes identified are in no way exhaustive and can be measured in many ways. The indicators we have suggested range from simple to advanced assessments. What is easiest to document may not be the most meaningful and accurate measure. In addition, outcome monitoring must take into consideration the issues regarding the collection of data from children of pre-school ages. A large part of the decision regarding what outcomes are chosen for assessment will depend on this factor as well as the cost associated with such an exercise.

[70] United Way of America (1996). Measuring program outcomes: A practical approach. Fairfax, VA: United Way Press.
[71] Gombs, D.S. (1999). Understanding evaluations of home visitation programs. The Future of Children, 9(1), 27-43.
[72] St. Peirre, R. G. & Layzer, J. I. (1999). Using home visits for multiple purposes: The Comprehensive Child Development Program. Future of Children, 9(1), 134-151.

Table 1.1: Summary Table of Early Childhood Programs of the DC Children and Youth Investment Trust Corporation

Program	Program Objective	Activities	Population Served	Type of Intervention	Length/Intensity of Intervention
Mary's Center for Maternal and Child Care—**Healthy Families DC home visiting program**	Ensure that children are healthy, safe, and ready for school.	• Home visits. Parents are taught about nutrition, breastfeeding, family planning, safety, prevention of child abuse and neglect, child development, stimulation skills, asthma, and immunizations. • Screening and assessments. • Individual family support plans. • Referrals to service providers (i.e., health care, immunizations, educational and training programs, safe housing). • "Enrichment activities" (i.e., parent education workshops, nutrition/cooking classes, play groups).	• First-time, low-income families. • Children from birth through age 5. • Serves 120 families.	Mainly one-on-one (home visits), but includes some group classes and activities.	Up to 5 years; average participation lasts 3 years
Bright Beginnings, Inc.—**HIPPY-DC (Home Instruction Program for Preschool Youngsters)**	Ensure that high-risk children start school with cognitive, social, and emotional skills needed to learn by teaching parents how to help their children prepare for schooling.	• Parent education and training. During weekly home visits, parents receive packets of activities to complete with their children. Home visitors teach parents how to use the packets with their children through role-playing. • Organized parent/child activities. • Management of family crises. • Health care/nutrition services. • Life skills bi-weekly parent workshops.	• High-risk families • Serves 115-125 families with 130 young children and about 100 older siblings.	Weekly home visits and bi-weekly group meetings.	30 weeks in each of three years—age 3, 4, and 5
Community Academy Public Charter School—**Parent Center**	To create a Parent Center and help parents ensure that their children enter school ready to learn.	• Classes for 10 parents and their children in 10-week cycles, 3 times per year (i.e., parent and toddler classes, teen parent support groups, positive discipline, family communication skills). • Workshops twice per month for 15-25 parents. • Community Health Fair. • Make resources available for families, such as a lending library with toys, games, and books, and information about education, health, and social services. • Lecture series on parenting issues (i.e., nutrition, discipline, early literacy). • Development screenings.	• Parents of children ages 0-5. • Families of Community Academy Public Charter School students, Kids House participants, and families referred by the Georgia Avenue Healthy Families Thriving Communities Collaborative.	Mainly group interaction through classes and lectures.	• Ongoing—any parents with children between the ages of 0 and 5 can participate. • Classes last for 10 weeks.
Friendship House Association—**Parenting Plus Program**	To create a new program "to provide parenting and health education in conjunction with access to a range of support services for	• Parents will be divided into 4 groups of 25 each, and will attend sessions on a 3-month basis. • Classes will include nutrition education, management of family resources, parenting skills, and computer instruction. • Workshops on creative play for parents and	• Parents from two public housing developments in Ward 6; parents from the Friendship House Welfare-to-Work Project; Parents from the	Group interactions through classes.	12 weeks.

Program	Program Objective	Activities	Population Served	Type of Intervention	Length/Intensity of Intervention
	100 parents with children ages 0-5 to ensure school readiness of the children and optimal family functioning."	children. • Health screenings, resource information, and access to health care providers. • Developmental screenings for children. • Access to health services and care coordination/case management.	Friendship House Child Development Center • 100 parents of children ages 0 to 5.		
The Center for Child Protection and Family Support—**Bridging Early Childhood and Family Support Services (BECAFS)**	To promote, "stronger, healthier, and less at-risk families" by creating an alliance among 7 neighborhood institutions to implement family support and parent skills building training.	• Establish an alliance of 7 neighborhood institutions to ensure that parents use public and private services that support early childhood development, health screenings, and school readiness. • Plan and implement parent skill-building classes. • Provide family support and preventive services to reduce the risk of child maltreatment, drug/alcohol exposure, lack of immunizations, health and safety hazards, poor nutrition, and poor developmental outcomes.	• Parents in Ward 8. • 120 parents of children age 0-5 in each of 3 years (for a total of 360).	Group interactions through classes.	12 weeks (weekly classes for 2-3 hours).
Center for Mental Health—**Project Access**	To improve access to early intervention services through collaboration among service providers. To expand parental knowledge and skills related to early childhood development.	• Classes for Head Start parents and staff, as well as parents and staff involved in the Far Southeast Family Strengthening Collaborative; teach parents and staff about child development and how to identify behavioral problems and developmental delays so that they can seek the appropriate services for children. • Identify families with untreated addiction and mental illness through outreach, training forums, and case finding with partner organizations (Far Southeast Family Strengthening Collaborative and Head Start). • Staffing in the three partner agencies. • Help get parents into recovery and treatment. • Provide referrals to supportive services.	• High-risk families in Anacostia. • 1,500 families, with 3,500-4,000 children ages 0-5.	Classes for parents and staff in Head Start and the Far Southeast Family Strengthening Collaborative.	1 or 2 classes per week for 6 to 12 months.

Source: Program descriptions from the DC Children and Youth Investment Trust corporation website (www.cyitc.org).

Conceptual Model of DC Trust Early Childhood Program Outcomes for Children and Parents

- The model presented in **Figure 1.1** identifies outcomes for children and parents participating in Early Childhood Development Programs of the DC Children and Youth Investment Trust Corporation.

- Circles in the model represent services that are provided to parents and children by the various Early Childhood Development programs.

- Squares in the model represent short/intermediate and long-term outcomes for children and families.

Figure 1.1: Conceptual Model of Child Development Program Outcomes for Children and Parents

Box 1.1: Summary of Outcomes for Parents and Children in Early Childhood Development Programs

PARENT OUTCOMES

Initial

- Knowledge of the importance of prenatal care
- Knowledge of child development milestones
- Knowledge of parenting skills
- Knowledge of the importance of reading to children and other enrichment activities
- Knowledge of child health needs (i.e., nutrition, immunizations)
- Knowledge of safety practices in the home
- Knowledge of the importance of quality child care
- Knowledge of services available for children and families in the community

Intermediate and longer-term

- Regular prenatal care, resulting in the delivery of healthier children
- Consistent and reliable family planning
- Mental and physical health
  - Use of services to treat addictions and mental illness
  - Social and community support
  - Use of physical health services
- Supportive parenting and child-rearing practices
- Positive and nurturing home environment
- Children are not abused or neglected
- Utilization of service providers to coordinate services for children

CHILD OUTCOMES

Intermediate

- Cognitive development
  - Age-appropriate learning, reasoning, counting, pre-math skills, etc.
- Language development
  - Age-appropriate receptive and expressive language, pre-reading and pre-writing skills, etc.
- Social and emotional development
  - Positive relationships with peers and adults, age-appropriate expression of emotions, etc.
- Physical health and motor development
  - Regular health care practitioner, routine check-ups, dental hygiene, immunizations, etc.

Longer-term

- School readiness
  - Cognition and general knowledge
  - Language development
  - Social and emotional development
  - Approaches to learning
  - Physical well-being and motor development
- Improved school success in kindergarten and first grade

Table 1.2: DC Children and Youth Investment Trust Corporation Early Childhood Development Logic Model

Bolded items are from the original DC Trust model. Non-bolded items are Child Trends' additions.[1]

Inputs	Activities	Outputs	Outcomes		
			Initial	Intermediate	Longer-term
Program staff, materials, equipment, and other non-personal services **Other service providers** and partner organizations **in the community** **Low-income pregnant women and parents with children age 0-6** **Family support workers** Paraprofessional staff Lending libraries with age appropriate toys, games and books, and information about education, health and social service opportunities for parents and children Computers for use by parents Constraints on programs:	**Outreach to bring low-income pregnant women and parents with children 0-6 into the program** **Education for parents in the healthy development of children and advocacy for their children** **Connecting parents with resources in the community for child development** **Convening local service providers and schools to coordinate services** **Tracking activities and referrals provided to parents** **Tracking the development of children of parents served** Home visits by family support workers Comprehensive screening and assessments of children Enrichment activities which include fathers groups, play	**Staff outreaches to parents to link them to services** **Parents are recruited into the program to receive services** **Parents attend education classes in child development** **Parents are referred to community services for child development** Number of home visits conducted Number of screening and assessment sessions held. Number of children provided with comprehensive screening and development assessments Number of families provided with links to service providers, health care, well baby care, immunizations, preventative health services, educational and training programs and safe	**Parents are knowledgeable about developmental milestones for children** (social, emotional, cognitive and physical) **Parents are using available community services for child development** **Parents are signing children up for quality health and development services (e.g. Healthy Start, immunizations)** **Parents are knowledgeable about ways to encourage literacy and learning opportunities for their children** **Parents are knowledgeable about the importance of reading to their children**, taking them to the library, and telling them stories Parents are knowledgeable about child health, nutrition, dental care and proper rest for children	**Children are achieving milestones for cognitive development** **Children are developing literacy skills** **Children are receiving health care and are immunized** Children have a regular health care practitioner and regular check-ups Children are being immunized at the appropriate ages Children are achieving milestones for social, emotional, cognitive and physical development Children receive regular dental care Parents provide children with proper nutrition/diet Parents use safety practices with children (e.g. seatbelts, reducing lead exposure, reducing second-hand smoke exposure, reducing	**Children are academically successful in kindergarten and the first grade** **Increase in parents' engagement in and knowledge about methods of increasing child literacy and learning** **Increase in children receiving appropriate health care services** **Increase in school readiness, as evidenced by entry to school with immunizations and health screenings complete** Children exhibit age appropriate cognition and general knowledge Children exhibit appropriate language development Children show positive social and emotional development

Inputs	Activities	Outputs	Outcomes		
			Initial	Intermediate	Longer-term
Language barriers	groups, parent education workshops and nutrition/cooking classes Health Fairs Activities to assist parents in health maintenance, preventative health care and sound nutritional practices Organized parent/child activities to increase reading and make it a regular part of parent/child interaction Life-skills, parenting workshops and lecture series After-school child care Workshops on the management of family resources and financial management Workshops for parents and children on creative play Introductory computer classes Classes in family planning, health care, well baby care, immunizations, preventative health services and safe housing Outreach, tracking and counseling to identify	housing Number of families engaging in enrichment activities with children Number of parent education workshops and training sessions held Number of families served in parent education workshops and training sessions Number of sessions conducted on the management of family crises Number of families served In sessions on the management of family crises Number of sessions conducted on health care and nutrition. Number of families served in sessions on health care and nutrition Number of community Health Fairs held Number of families attending Community Health Fairs Number of sessions conducted on introductory computer training.	Parents are knowledgeable about effective parenting approaches Parents understand the importance of their children having regular health care, well-baby care, practitioner and routine check-ups Parents understand the importance of immunizations for healthy child development Parents understand the importance of dental hygiene and regular dental care for their children Parents understand the importance of safety practices in the home and safe housing Parents seek physical, mental health, and family planning services for themselves Parents are knowledgeable about and understand the importance of enrolling their children in quality child care Parents are knowledgeable and aware of the importance of home visits by family support workers for influencing positive development outcomes	accidents or unintentional injuries) **Parents are advocating for services for their children, and are** communicating with their children's teachers/child care providers Parents use effective parenting approaches (age appropriate discipline, limit setting) Parents have social support (To further discuss) Parents are mentally healthy (locus of control, mastery, self-esteem) Children are not abused or neglected Children take part in quality (licensed, accredited, stable) preschool programs Parents use service providers effectively to coordinate services for young children and families Parents use service providers for health care, well-baby care, immunizations, preventive health services, educational and training	(cooperation, sharing, positive relationships with peers and adults) Children exhibit few childhood emotional and behavioral problems Children exhibit age appropriate approaches to learning Children are physically healthy in kindergarten and first grade (including number of illnesses, nutrition, fitness, dental health) Children exhibit the appropriate motor development skills at specific milestones (gross and fine) Children exhibit improved school success (reduced special education placement and reduced retention in grade) Parents are actively involved in their children's classrooms, communicate frequently with their children's teachers, and know what their children are learning Parents monitor and

Inputs	Activities	Outputs	Outcomes		
			Initial	Intermediate	Longer-term
	individuals with untreated addictions and mental health illness into the program	Number of program participants attending computer training programs Number of families utilizing library facilities with age appropriate toys and materials Number of classes conducted on the management of family resources and financial management Number of families attending sessions on the management of family resources and financial management Number of parents engaging in creative play with their children Number of families identified with untreated addictions and mental illness Number of parents provided with services for recovery or treatment	Parents know about the importance of enrichment activities for healthy child development Parents are aware of referral and support services for families with untreated addictions and mental illness Parents are knowledgeable about the importance and usefulness of comprehensive community based health services, outreach, and care coordination/case management Mothers understand the importance of pre-natal care	programs and safe housing Parents have frequent warm, close interactions with children Parents attend community Health Fairs Parents utilize library facilities with age appropriate toys, games and books Parents ensure that children have development screenings Parents use supportive services to treat addictions and mental illness Parents read regularly to children Children are being taught about discipline and limit setting in the home Mothers receive regular prenatal care Mothers do not use substances during pregnancy Parents engage in family planning	track child development milestones Parents provide a positive and nurturing home environment for pre-school children Parents have improved health (physical and mental) Mothers exhibit appropriate pre-natal behaviors Parents exhibit positive parenting and child-rearing skills Children are born healthy

Inputs	Activities	Outputs	Outcomes		
			Initial	Intermediate	Longer-term

[1] Child Trends' additions come from two sources: Zaslow, Halle, Zaff, Calkins, & Margie (2000). Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies. Washington, DC: Child Trends; and program descriptions from the DC Children and Youth Investment Trust Corporation web site (www.cyitc.org).

Table 1.3: Outcome Measures for Parents and Children in Early Childhood Development Programs

PARENTAL OUTCOMES AND PARENTING SKILLS AND BEHAVIORS

OUTCOME	INDICATOR	DESCRIPTION/COMMENT
INITIAL OUTCOMES		
Mothers understand the importance of prenatal care (initial outcome)	Enumeration of mothers who understand the importance of receiving prenatal care	Mother questionnaire
Parents are aware of services for families with untreated addiction and mental illness (initial outcome)	Enumeration of parents who are aware of referral and supportive services for the treatment of addiction and mental illness	Parent questionnaire
Parents are using supportive services to treat addictions and mental illness (initial outcome)	Enumeration of parents who seek and use services to treat addictions and mental illness	Parent questionnaire
Parents seek physical health and family planning services for themselves (initial/ Intermediate outcome)	Enumeration of parents who seek and utilize health care	Parent questionnaire
Parents are knowledgeable about developmental milestones (initial outcome)	Enumeration of parents who are knowledgeable about developmental milestones for children (social, emotional, cognitive, and physical)	Parent questionnaire
Parents are knowledgeable about child health needs (initial outcome)	Enumeration of parents who are knowledgeable about child health, nutrition, dental care and proper rest for their children	Parent questionnaire
Parents are knowledgeable about safety practices in the home (initial outcome)	Enumeration of parents who understand the importance of safety practices in the home and safe housing	Parent questionnaire
Parents are knowledgeable about effective parenting approaches (initial outcome)	Enumeration of parents who are knowledgeable about effective parenting approaches (i.e., age-appropriate discipline, limit setting)	Parent questionnaire
Parents understand the importance of seeking and using health services for their children (initial outcome)	Enumeration of parents who are knowledgeable about the importance of their children having regular health care, well-baby care, immunizations, and dental care	Parent questionnaire
Parents use service providers for their children (initial/ Intermediate outcome)	Enumeration of parents who use service providers, such as health care, well-baby care, immunizations, preventive health services, Healthy Start	Parent questionnaire
Parents understand the importance of home visits (initial outcome)	Enumeration of parents who are aware of the importance of home visits by family support workers for influencing positive child outcomes	Parent questionnaire
Parents understand the importance of enrolling their children in quality child care (initial outcome)	Enumeration of parents who are knowledgeable about child care quality and understand the importance of enrolling their children in quality care	Parent questionnaire
Parents are knowledgeable about ways to encourage literacy and learning (initial outcome)	Enumeration of parents who are knowledgeable about ways to encourage literacy and learning opportunities for their children, and who are knowledgeable about the importance of reading to their children	Parent questionnaire
INTERMEDIATE/LONGER-TERM OUTCOMES		
MATERNAL PREGNANCY BEHAVIORS Mothers exhibit appropriate pre-natal and post-natal behaviors; Children are born healthy		
Mothers receive regular prenatal care (intermediate outcome)	Enumeration of mothers who seek and receive regular, adequate prenatal care	Mother questionnaire
Mothers do not use substances during pregnancy (intermediate outcome)	Enumeration of mothers who smoke, drink, or use or abuse other substances during pregnancy	Mother questionnaire

Parents engage in family planning (intermediate outcome)	Enumeration of parents understand and engage in family planning practices; birth spacing	Parent questionnaire
Children are born healthy (longer term outcome)	Birth weight, gestational age; number of babies who received care in an intensive care unit, premature nursery, or any other type of special care facility upon birth	Birth outcome indicators of the children of mothers enrolled in the program. Maternal interview and child's medical records.
PARENTAL MENTAL AND PHYSICAL HEALTH Parents are mentally and physically health		
Parents are mentally healthy (intermediate/longer term outcome)	Enumeration of parents self identified or diagnosed as having mental health problems	Measures of psychological well-being; parent self-administration.
Families have a reduction in partner violence/conflict (intermediate/longer term outcome)	Conflict tactics scale (CTS2)	A scale used to measure the incidence and severity of intimate partner violence. A 7-point, 30-item questionnaire to assess the extent to which dating cohabiting, or married partners engage in psychological and physical attacks on each other and also use reasoning or negotiation to deal with conflict. Mother interview.
Parents have social support (intermediate/longer term outcome)	Enumeration of parents with social support from friends or family members (i.e., someone who can give them advice, someone they can talk to about problems)	Parent questionnaire
Parents have community support (intermediate/longer term outcome)	Enumeration of parents who feel that they can rely on others in their community for help	Parent questionnaire
Parents are physically healthy (intermediate/longer term outcome)	Enumeration of parents who report themselves as being physically healthy	Parent questionnaire
PARENTING Parents are knowledgeable about children's development and needs; Parents exhibit positive parenting and disciplining skills; Parents provide a positive and nurturing home environment for pre-school children		
Parents provide children with proper nutrition/diet (intermediate outcome)	Enumeration of parents who provide their children with proper nutrition/diet	Parent questionnaire
Parents use safety practices with children (intermediate outcome)	Enumeration of parents who use safety practices with children (i.e., seatbelts, reducing lead exposure, reducing second-hand smoke exposure, reducing accidents or unintentional injuries)	Parent questionnaire
Parents use effective parenting approaches (intermediate/ longer term outcome)	Enumeration of parents who use effective parenting approaches (i.e., age-appropriate discipline, limit setting)	Parent questionnaire
Child-rearing attitudes and beliefs about parenting	Adult-adolescent parenting inventory (AAPI)	A 32-item measure of attitudes about child rearing and beliefs about parenting. For adolescents and adults. Self-administered.
Quality of the home environment	Home Observation Measurement of the Environment (HOME)	An assessment of the quality of the home environment for child cognitive, social, and emotional development. Two versions: infants and toddlers (45 items) and preschoolers (55 items). For ages 0 to 6. Parent and child observed behavior and parent report. Examiner administered.
Confidence in parenting	Parenting Sense of Competence Scale (PSOC)	A 17-item questionnaire to assess attitudes about parenting and confidence in parenting ability. Parent questionnaire.
Dysfunctional parenting	Parenting Stress Index (PSI)	A measure to identify temperament and emotional problems in children and parents, and parent-child systems under stress and at risk for dysfunctional parenting. For ages 1 month to 11 years and adults. Examiner administered.
Parents have frequent warm, close interactions with children (intermediate outcome)	Enumeration of parents who have frequent warm, close interactions with their children (i.e., play together)	Parent questionnaire
Parents read regularly to children (intermediate outcome)	Enumeration of parents who read to their children regularly; Number of parents who take their children to a library	Parent questionnaire

Parents are involved in their children's education (longer term outcome)	Enumeration of parents who are actively involved in their children's classrooms, communicate frequently with their children's teachers, and know what their children are learning in school	Parent or teacher questionnaire
ABUSE AND NEGLECT Children are not abused or neglected		
Reduction in the number of children who are abused or neglected (intermediate/ longer term outcome)	Reported cases of abuse and neglect	Emergency care for treatment of intentional injuries, or ingestion of poisonous or otherwise harmful substances or objects. Mother questionnaire and child's medical records.
Child abuse and neglect	Enumeration of children receiving protective services	A record of cases of child abuse and/or neglect reported to child protective services. Substantiated records are those verified by child protective services or another agency responsible for the investigation of child abuse reports.
SERVICE UTILIZATION Parents use service providers effectively to coordinate services for their children		
Children take part in quality preschool programs (intermediate outcome)	Enumeration of children in quality (licensed, accredited, stable) preschool programs	Parent questionnaire
Parents attend community health fairs (intermediate outcome)	Enumeration of parents who attend community health fairs	Attendance rate
Parents ensure that children have developmental screenings (intermediate outcome)	Enumeration of children who have had developmental screenings before kindergarten entry	Parent questionnaire

CHILD OUTCOMES
(INTERMEDIATE/LONGER-TERM)

OUTCOME	INDICATOR	DESCRIPTION/COMMENT
COGNITIVE DEVELOPMENT: Children exhibit age-appropriate cognition and general knowledge		
Children learn, think, and solve problems at an age-appropriate level (intermediate/longer term outcome)	Enumeration of children who learn, think, and solve problems {better than, as well as, slightly less well than, or much less well than} other children their age	Parent or teacher questionnaire
Children exhibit age-appropriate pre-math and mathematics skills (intermediate/longer term outcome)	Enumeration of children with age appropriate pre-math and mathematics skills (i.e., can count to the total number in a set of objects, can solve problems using concrete objects)	Parent or teacher questionnaire
Children exhibit age-appropriate counting abilities (intermediate/longer term outcomes)	Enumeration of children who can count by rote to 10	Parent or teacher questionnaire
Children exhibit age-appropriate cognitive ability (intermediate/longer term outcome)	Kaufman Assessment Battery for Children (K-ABC)	A measure of cognitive ability for ages 2 years, 6 months to 12 years, 5 months. Four scales: sequential processing, simultaneous processing, achievement, and nonverbal. Provides subset and composite standard scores. Examiner administered.
Children exhibit age-appropriate reasoning abilities and short-term memory (intermediate/longer term outcome)	Stanford –Binet Intelligence Scale- Fourth Edition	An assessment of intelligence and cognitive abilities in verbal, abstract/visual, and quantitative reasoning and short-term memory. For ages two to adult. Provides standard scores. Administered by a certified examiner.
Children exhibit age-appropriate mental and motor development (intermediate/longer term outcome)	Bayley Scales of Infant Development (BSID and BSID-11)	A measure of infant mental (178 items) and motor (111 items) development. Used for accessing development progress, comparisons with peers, and eligibility of special services. Provides standard scores. For ages 2 to 30 months (BSID) or 1 to 42 months (BSID-II). Examiner administrated.
Children exhibit age-appropriate physical, social, and mental development (Intermediate/longer term outcome)	Developmental Profile 11 (DP11)	A measure of physical, social, and mental development of children. Cognitive, communication, social, self-help, and physical development scales. For ages zero to nine. Parent and teacher interview.
Infants exhibit appropriate mental development (intermediate outcome)	Catell Infant Intelligence Scale	An assessment of the mental development of infants including infant verbalizations and mother control. Applicable to a younger age range than the Stanford-Binet Intelligence Scale. Examiner administered.
LANGUAGE DEVELOPMENT Children exhibit age appropriate language and literacy development		
Children exhibit age appropriate language comprehension (intermediate/ longer term outcome)	Enumeration of children who understand simple directions, requests, and information	Parent or teacher questionnaire
Children communicate meaning effectively in their primary language (intermediate/ longer term outcome)	Enumeration of children who communicate needs, wants, or thoughts in their primary language	Parent or teacher questionnaire
Children's speech is easy to understand (intermediate/ longer term outcome)	Enumeration of children whose speech is easy to understand	Parent or teacher questionnaire
Children show an interest in books (intermediate/longer term outcome)	Enumeration of children who show an interest in books	Parent or teacher questionnaire
Children can recognize letters (longer term outcome)	Enumeration of children who can identify the letters of the alphabet	Parent or teacher questionnaire
Children can recognize their own name in print (longer term outcome)	Enumeration of children who can read their own name	Parent or teacher questionnaire

OUTCOME	INDICATOR	DESCRIPTION/COMMENT
Children exhibit age appropriate reading/pre-reading skills (intermediate/ longer term outcome)	Enumeration of children who have age appropriate reading or pre-reading skills (i.e., understand that written spellings represent spoken words, have book-handling skills, can read a simple storybook)	Parent or teacher questionnaire
Children are proficient in demonstrating early writing behaviors (intermediate/ longer term outcome)	Enumeration of children who exhibit early writing behaviors (i.e., scribble with intended meaning, can write their name, can write a few letters)	Parent or teacher questionnaire
Children exhibit receptive vocabulary skills (intermediate/longer term outcome)	Peabody Picture Vocabulary Test-Revised (PPVT-R)	An evaluation of the receptive vocabulary of individuals from age 2 years, 6 months through adulthood. No reading ability necessary. 175 plates with 4 pictures per plate. Provides standard scores. Also available in Spanish. Examiner administrated.
SOCIAL AND EMOTIONAL DEVELOPMENT Children exhibit age appropriate social and emotional development		
Children form and maintain friendships (longer term outcome)	Number of children who form and maintain friendships with peers	Parent or teacher questionnaire
Children use problem-solving skills with peers (longer term outcome)	Enumeration of children who use problem-solving skills to address social dilemmas with peers.	Parent or teacher questionnaire
Children work and play cooperatively with peers (longer term outcome)	Enumeration of children who work and play cooperatively with others in a give-and-take manner (i.e., share, take turns)	Parent or teacher questionnaire
Children interact positively with familiar adults (intermediate/longer term outcome)	Enumeration of children who interact positively with familiar adults (i.e., initiate conversations, seek help when needed)	Parent or teacher questionnaire
Children appropriately express a range of emotions (intermediate/longer term outcome)	Enumeration of children who appropriately express a range of emotions (i.e., happy, sad, angry, frustrated)	Parent or teacher questionnaire
Children control their tempers (intermediate/longer term outcome)	Enumeration of children who control their temper in an age-appropriate manner	Parent or teacher questionnaire
Children exhibit few childhood emotional problems (intermediate/ longer term outcome)	Enumeration of children with emotional problems (i.e., low self-esteem, worry a lot, appear lonely, act sad or depressed)	Parent or teacher questionnaire
Children exhibit few childhood behavioral problems (intermediate/ longer term outcome)	Enumeration of children with behavioral problems (i.e., fight with other children, do not respect the property of others, do not follow rules)	Parent or teacher questionnaire
Children work and play independently (longer term outcome)	Enumeration of children who are capable or working and playing independently	Parent or teacher questionnaire
Children exhibit age-appropriate behavioral development (intermediate/ longer term outcome)	Child Behavioral Checklist (CBCL) Adaptive Social Behavior Inventory	Checklist provides profile of behavioral problems (eight or nine scales) and social competence (three scales). Provides standard scores. 100-item version of ages 2 to 3. 113-item version for ages 4 to 16 with separate norms for ages 4 to 5, 6 to 11, and 12 to 16 by gender. Parent interview.
Children exhibit age-appropriate social behavior skills (intermediate/longer term outcome)	Developmental Checklist	A 24-item measure constructed specifically for the CCDP evaluation from the Work Sampling System by Meisels. The Checklist assesses adaptive social behavior in children five years or older. Parent interview.
Children exhibit age-appropriate adaptive and prosocial behaviors (intermediate outcome)	Scott and Hogan Adaptive Social Behavior Inventory (ASBI) Percent of families with appropriate parenting skills to anticipate and meet developmental needs of children	A measure designed to assess adaptive or prosocial behaviors in high-risk three-year-olds. 30 items organized into 3 subscales: express, comply, and disrupt.
APPROACHES TO LEARING Children exhibit age appropriate approaches to learning		

OUTCOME	INDICATOR	DESCRIPTION/COMMENT
Children follow simple rules and instructions (longer-term outcome)	Enumeration of children who follow simple rules and instructions	Parent or teacher questionnaire
Children are curious (longer-term outcome)	Enumeration of children who show curiosity and interest (i.e., ask questions, try new things)	Parent or teacher questionnaire
Children exhibit age appropriate task persistence (longer-term outcome)	Enumeration of children who persist in completing tasks, and use a variety of strategies to solve problems	Parent or teacher questionnaire
Children show creativity in play or work (longer-term outcome)	Enumeration of children who show creativity in their play and work (i.e., pretend, represent ideas through movement, respond to music)	Parent or teacher questionnaire
PHYSICAL HEALTH AND MOTOR DEVELOPMENT Children are physically healthy and exhibit age appropriate motor skills		
Children have a regular health care practitioner and regular check-ups (intermediate/longer term outcome)	Enumeration of children who have health insurance, a regular source of preventive care, a specific primary care provider, and preventive check-ups at a regular interval	Parent questionnaire
Children are being immunized at the appropriate ages (intermediate outcome)	Enumeration of children who receive immunizations at recommended ages	Parent questionnaire
Children are receiving regular dental care (intermediate outcome)	Enumeration of children who receive regular dental care	Parent questionnaire
Children are physically healthy in kindergarten and first grade (including number of illnesses, nutrition, fitness, dental health) (longer term outcome)	Enumeration of children whose overall health is rated by parents or teachers as {excellent, very good, good, fair, or poor}	Parent or teacher questionnaire
Children exhibit the appropriate motor development skills at specific milestones (gross and fine) (longer term outcome)	Enumeration of children who demonstrate gross motor skills (i.e., running, climbing stairs, skipping) and fine motor skills (i.e., using scissors or pencil)	Parent or teacher questionnaire
EARLY SCHOOL PERFORMANCE/SUCCESS: Children are successful in kindergarten and first grade		
Children exhibit improved school success (longer term outcome)	Enumeration of children with improved school success in kindergarten and first grade (reduced special education placement and reduced retention in grade)	Parent or teacher questionnaire; school records
School performance	Child classroom adaptation Index (CCAI)	An 11-item rating scale measuring children's functioning and performance in the classroom. Teacher self-administered.
Early school learning	Metropolitan Readiness Test	An assessment of underlying skills important for early school learning. For grades K-1. Examiner administered.
School achievement	Metropolitan Achievement Test	An assessment of school achievement. Tests in reading, comprehensive, mathematics, and language. For grades K-12. Examiner administered.
School achievement	Stanford Early School Achievement Test	An assessment of school achievement at the kindergarten and first-grade levels. Examiner administered.

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