Early Care and Education Cost Estimates
For Shelby County, Tennessee

Report to the
First Years Institute ECE Initiative Planning Committee

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Executive Summary

The First Years Institute (FYI) contracted with the Human Services Policy Center at the University of Washington to provide ballpark estimates for a public-private financing approach to early care and education (ECE) for children age birth through five that:

- Builds on the private sector, maintaining a high degree of parental choice and provider flexibility;
- Provides access to high quality ECE for children of all income groups in the most cost-effective manner;
- Has mechanisms to assure high quality ECE services in return for improved financing. High quality is understood to require more qualified staff, lower child:adult ratios, support for those staff and better information for parents, as already indicated by the FYI ECE Initiative Planning Committee.

HSPC has developed a sophisticated approach to specifying detailed policies to assure access to high quality ECE, including a set of computer models to estimate cost and impact of different alternatives. This was applied successfully in four states (Ohio, South Carolina, Illinois, Mississippi), whose policy makers are using the results to improve their financing systems. With funding from a private foundation, HSPC developed a shortcut method of producing ballpark estimates without the time and expense required for the full scale modeling effort. This method entails considering which of the four test states selected packages of policies closest to those preferred by the Shelby County team and adjusting the cost estimates to reflect wage levels and income distributions for Shelby County relative to those of the selected test states.

HSPC met with the FYI ECE Initiative Planning Committee to understand their policy preferences and discuss which states' policies were most applicable. This yielded an agreement that the policies specified by Illinois and Ohio were quite consistent with those desired for Shelby County. These included having a majority of ECE teachers holding college degrees, receiving adequate compensation and ongoing professional development. They also included assisting low and middle income parents on a sliding scale related to income, while providing financial support to providers to assist them with the transition to a higher quality system. Provisions for family support services to low income families were included. HSPC generated cost estimates for three options, all of which would be voluntary:

A. ***Parent Provider Assistance Package (PPAP***), a market-based approach that would support about half the cost of high quality ECE through financial assistance to providers that is not related to a child's income; the remainder of the cost would to be supported by a mixture of public-private subsidies and parent co-payments, with the shares determined by family income. This is similar to the higher education financing system, where state funding covers about half the cost and students are charged the remainder in tuition, assisted by income-related scholarships, Pell Grants and loans.

    1. *Lower cost and coverage PPAP option*. This entails a smaller percentage of ECE teachers holding BA or MA degrees. The *annual* compensation for BA level teachers would be close to that of the *school-year pay and benefits* of an elementary school teacher (about $18-22 an hour). Teachers without a BA would be paid less. Since the hourly costs of providing ECE are lower, a smaller percent of middle income parents would require assistance to afford access.

    2. *Higher cost and coverage PPAP option*. This entails moving immediately to a strong majority of ECE teachers holding BA or MA degrees; BA or MA level teachers would be *paid for twelve months at a hourly equivalent level* close to what elementary school teachers during the school year (about $26-30 an hour). The higher hourly costs would necessitate partially assisting more middle income parents in order for the cost to be feasible in the market.

B. ***A public school type system***, which would replace the current ECE market with a publicly funded service, with all teachers having BA or MA degrees and receiving elementary teacher level compensation, and all children age birth through five eligible to attend for free, regardless of income.

There are approximately 81,000 children age birth through five in Shelby County, all of whom would have financial access to high quality ECE under these approaches. About three fourths of Shelby County families would be eligible for some amount of assistance under the PPAP approach; all would be eligible for free ECE under the public school type approach. Not all children would actually receive financial support, either due to family income exceeding the limit under PPAP, or due to parental choice to not use non-parental care or to not participate in the financing program. Under PPAP, approximately two-thirds of total financial benefits would go to families below twice the poverty line, or $38,700 income for a family of four. We estimate that while all 81,000 children would have financial access and benefit from improved quality of early learning, about 25,500 children would actual receive some amount of financial assistance.

The cost estimates are shown in the following table. The results suggest that the market-based PPAP approach could be implemented with a moderate level of investment equivalent to 7-17% of current public education spending (approximately $1.3 billion). It should be noted that the birth-five population is about 46% as large as the school-age population. The funding would not have to come through public education or its revenue sources. These estimates assume federal ECE funding continues at current levels; if it were to increase, local-state-private funds could be reduced.

Table 1. HSPC Cost Estimates for Providing Access to High Quality ECE for All Children Age Birth Through Five Years in Shelby County, TN

		Net Increase over Current Public Investment in ECE in Shelby County ($98 million; see Appendix)	
	Gross Cost of Assisting Families in $ Millions	**Increase in $ Millions**	**Increase as % Total K-12 Spending**
	Costs in Constant 2005 Dollars		
Current Public ECE Spending	$98	-0-	9 %
Lower Cost/coverage PPAP Option	$187	$89	+7 %
Higher Cost/coverage PPAP Option	$313	$215	+17 %
Free ECE for All – Higher Costs	$524	$426	+33 %

These cost estimates could be refined by a more detailed specification of policies, entailing a longer term engagement with HSPC to apply its ECE Policy Simulation Model.

A. Background and Purpose

The First Years Institute ECE Initiative Planning Committee has been developing a plan for providing access to high quality early learning experiences to all children age birth through five in Shelby County. As part of this effort, it is desired to have a ballpark estimate of the cost of such a system.

In this report, we provide estimates of the gross costs of providing access to high quality ECE for all children birth through five in Shelby County. We estimate the amount of subsidies currently available to offset these gross costs to provide an estimate of the likely increase in public and private funding to make access to high quality ECE affordable for all of Shelby County's young children. The estimates are based on adjusting our analyses for policies specified in Illinois and Ohio, which are similar to those envisaged by the FYI ECE Initiative Planning Committee.

B. Methods of Analysis in this Study: Overview

The Human Services Policy Center (HSPC) has developed a Policy Simulation Model (PSM) for estimating the costs of providing financial access to high quality Early Care and Education (ECE) services. The PSM has been successfully applied in four diverse states. The PSM approach allows users to specify a wide range of policies affecting both the services to be delivered and the mechanisms by which families of different income levels are to be assisted in affording those services. A lengthy process is required for HSPC to work with a group of policy makers and stakeholders to specify many different options, analyze the results and provide multiple rounds of the simulation to reach a consensus. However, to produce a rough estimate of costs, we have developed a simplified approach which lets us adapt our detailed analysis from other states to specified communities. In brief, we have selected in consultation with the First Years Institute ECE Initiative Planning Committee two states (Illinois and Ohio) for which we conducted the full policy simulation process, and whose policy specifications are consistent with those envisioned by the First Years Institute ECE Initiative Planning Committee.

Implementing equivalent policies in different geographic locations will have different costs, due to the different wage structures of ECE staff and the different income distribution of families needing assistance. To estimate program costs for providing access to high quality early learning for all children age birth through five in Shelby County, we have therefore (a) derived a cost per population specific to each age and income group in Illinois and Ohio, (b) adjusted that cost per population to reflect the ratio of wages of relevant professions in Shelby County to those same wages in Illinois and Ohio, and (c) applied these wage-adjusted costs to our estimate of the number of children age birth-five in each income group in Shelby County.

Our approach builds on HSPC surveys of current ECE utilization, encompassing all sectors (center-based care, formal family child care, and paid family, friend or neighbor care). This is more realistic than assuming that all working parents will use full time center-based care. It also takes account of the fact that one-third of non-employed parents use paid ECE, and access for

these children is important for educational or developmental reasons. In Illinois and Ohio, among children age birth through five years old, in a given week, about:

- 60% are in some non-parental ECE each week for at least 5 hours
- 30% are in center care an average of 25 hours per week
- 15% are in family child care an average of 28 hours per week
- 54% are in family, friend, and neighbor care about 11 hours per week

To the extent that ECE utilization patterns vary somewhat between Shelby County and these states, there may be some uncertainty in our estimates. However, a significant finding of our analyses has been that once high quality staffing standards are specified, and compensation levels are linked to those standards, the cost differences between center-based and family child care become minimal. Differences in utilization patterns therefore have less difference on costs.

C. Methods of Analysis: Details

1. Major Financing Considerations

a. No-fee vs. PPAP approaches

A central feature of our analysis has been to compare the costs of many different approaches to ECE finance, two of which we consider here. One set of estimates is based on a kindergarten or pre-K model, where service is offered for 4, 6 or 8 hours a day during the school year, and eligible children attend for free. The second set of estimates is derived from a more complex market-based approach. The latter approach was developed from our consistent finding that a partially means-tested approach bests balances the objectives of assuring access to all income groups, targeting funds to the most vulnerable children, and minimizing budgetary impact. This approach, which we call a Parent-Provider Assistance Package (PPAP), is somewhat akin to higher education financing. In higher education, close to half of costs are covered in institutional subsidies (mostly state appropriations), and the remaining costs are charged in tuition, with families eligible for sliding-scale assistance related to income (grants/scholarships and subsidized loans). Similarly, in PPAP, public subsidies would be paid to the ECE provider to cover up to half the cost for eligible children without regard to income. The remainder of the cost would be covered by a voucher, the amount of which varies with family income, with the remainder covered by parent co-payments.

b. Varying costs by teacher wage levels

While the child development research literature shows a correlation between education level and quality of caregiving, there is no clear threshold (Zaslow et.al. 2004). Further, it is not clear what compensation levels are required to recruit and retain ECE staff at different levels of qualification. School-based preschool programs tend to hire BA-level, certified teachers, and some argue that to have a stable work force, pre-K teachers must be paid at the same level as elementary school teachers. In a market-based system like PPAP, wages would be set at the

minimum level necessary to recruit and retain teachers with the desired set of skills. There is open debate in the field about whether this can be done at the wages paid to BA-level human services workers, such as social workers or medical technicians, at or some wage between that of human service workers and elementary school teachers. Another formulation that states have found helpful is to distinguish between annual and hourly equivalence to public school teacher salaries. Public school teacher salaries are paid for about nine months a year, while ECE staff work for twelve months. If nine-month teacher salaries are converted to an hourly basis, and paid for twelve months, they yield an annual ECE salary approximately one third higher than public school teacher salaries. The higher standard specified by several states reflects this higher annual wage; the lower standard approximates the result of paying ECE teachers the same annual salary as elementary school teachers, but spreading it over a calendar year. We therefore produced two sets of cost estimates for the PPAP approach, reflecting higher or lower wage levels. These can be interpreted as reflecting either hourly vs. annual equivalence to public school teacher compensation, or as reflecting the difference between school teachers and human service workers. In all cases, we estimate fringe benefits at the same percent used for public school teachers.

c. Costs of a High Quality ECE system.

Assuring all children in a community access to high quality early learning experience requires more than just the cost of direct services to children. It requires investing in professional development and quality monitoring of teachers, quality promotion and assessment systems for provider organizations, state and local governance structures, management information systems, improvement of some facilities, and regulatory and administrative structures that can handle large sums of money efficiently and can effectively assess and promote the quality of experiences. We have therefore built such quality promotion and assurance costs into our estimates. Professional development for staff, MIS and assessment systems, and facility upgrades are built into the per-child hourly costs of ECE, and constitute about 7% of direct costs. Administrative costs of about 9% are built in at the end, commensurate with the scope of the specified subsidies.

d. Demand adjustments. A special feature of our modeling is that we take account of the greater utilization of paid ECE as higher quality services are made available at lower net cost to parents. The costs of higher utilization were slightly offset by additional tax revenues from additional parental employment as a function of greater access to ECE.

e. Applying Illinois and Ohio policy specifications

Key features of the Illinois and Ohio policy specifications were deemed by HSPC and the First Years Institute ECE Initiative Planning Committee to be consistent with the approach envisaged for a Shelby County initiative. The Illinois and Ohio specifications include high quality early learning environments, family support at two levels of intensity (home visiting, support groups), professional development for all staff, and some upgrading of physical facilities. The Illinois

and Ohio specifications, based on modifying the recommendations of national expert panels convened by the *Universal Financing of ECE* project (Kagan et.al., 2002) are described in the following section.

2. Policies determining the nature of high quality ECE

We encouraged state teams to specify staff qualifications and child:adult ratios appropriate for promoting early learning in each age group. In general, older children require staff with higher formal educational requirements, implying higher compensation, but can have higher child:adult ratios. While there is general agreement in the field that the relevant age grouping are infants, toddlers and preschoolers, there are no generally accepted break-points defining these groups, particularly between infants and toddlers, and they vary across states. The categories specified by the Illinois and Ohio teams and used for this analysis are: infants = birth-11/17 months; toddlers = 12/18-35 months; preschoolers = 36-71 months. It is important to note that these are packages of policy specifications that interact in many complex ways; it is not possible to pull them out and focus on changing any one specification in isolation to the others. These are provided to illustrate the range of policy inputs that would be possible under the funding estimates provided in this report, rather than constituting a specific set of policies that would be applied in Shelby County.

The major policy specifications from Ohio and Illinois are:

- Clearly defined roles, qualifications and career pathways for all early care and education staff, including teachers, directors, family resource coordinators and nurses. It is considered important to have entry level positions requiring only a high school degree, with opportunities for professional development and advancement, in order to maintain cultural diversity in the ECE workforce.

- Average child-to-teacher ratios in center-based care would range from 8 to 10-to-1 for children age 3 to 5; from 5 to 6-to-1 for toddlers; and about 4-to-1 for infants (excluding directors and lead teachers).

- There would be additional allotments for family resource coordinators and nurses (1-2 per 100 children in Illinois) or enriched staffing for children with special physical or emotional needs (one additional teacher per group for half of special needs children, itinerant teachers for the other half). These additional allotments do not have a substantial impact on total funding needs, since they affect a small share of the population.

- For preschoolers, about 50 percent of center teachers would have bachelor's degrees or higher; for toddlers, the percent with bachelor's degrees would range from 20 to 37 percent; for infants, from 16 to 27 percent. Similarly 18-29% of preschooler teachers would have AA degrees, as would 25-49% of toddler teachers and 34-44% of those responsible for infants.

- Salaries would be related to professional qualifications and job responsibilities. Salaries for all levels of staff would increase with years of experience and additional educational credits.

All staff would receive health and retirement benefits at the rate of 26-30% currently used for public school teachers in Illinois and Ohio. At the higher salary standard, BA-qualified teachers would be paid the hourly equivalent of an elementary school teacher, about $26-30 an hour. At the lower standard, BA teacher's salaries would be paid the annual teacher salary of about $18-22 an hour. Teachers with AA or high school degrees would be paid commensurately less, but have the opportunity to earn more as they improved their qualifications.

- Professional development allotments of $700-1,250 per staff member would be provided for tuition and supplemental expenses, with an additional $900-2,300 per staff in institutional funding to develop and offer courses. It is assumed that three quarters of staff would use these allotments each year. Paid release time for professional development is factored into the costs, with reimbursement ranging from half to all of 45 total hours – the amount of time necessary to complete a 3 credit course.

- About $1,800 a year per child would be provided for non-personnel costs, such as food, supplies, equipment and insurance. There is some additional funding for new or rehabilitated facilities based on special analyses in Illinois.

3. Policies determining how parents will be assisted to afford high quality ECE

It should be noted that the policies described below were developed in an iterative process, and have been designed to meet multiple policy objectives. These include making the annual costs of high quality ECE described in the previous section affordable for families at all income levels, while targeting the majority of funds to low and moderate income children and limiting total budgetary costs. It is not possible to consider the policies for assisting parents separately from the policies affecting hourly cost, because the two must be balanced to achieve a feasible financing system.

a. ***Baseline***: HSPC received estimates of current public ECE expenditures for children age birth through five in Shelby County from the Consilience Group. We modified these to remove the cost of programs serving only children with special needs, since these are not included in our modeling.

b. ***Parent Provider Assistance Package (PPAP)***, a market-based approach that would support about half the cost of high quality ECE through financial assistance to providers that is not related to a child's income; the remainder of the cost would be supported by a mixture of public-private subsidies and parent co-payments, with the shares determined by family income. This is similar to the higher education financing system, where state funding covers about half the cost and students are charged the remainder in tuition, assisted by income-related scholarships, Pell Grants and loans.

   All the state teams we worked with determined that a subsidy covering part of providers' costs, regardless of family income, was a necessary part of an effective system. One reason was to assure a cash flow to providers to allow them to make the major changes in

staff qualifications and compensation required. The second was to assure that rapid increases in costs and fees did not price middle income families out of the market and make the system infeasible. Finally, it was felt that such a direct contractual relationship would help maintain accountability for achieving higher quality. However, the states varied in how this would be implemented. In Illinois, the provider subsidy was specified as the amount necessary to allow any child to have a half day of free ECE. In Ohio, it was treated as an unrestricted 25% of total costs, roughly equal to the increase in average provider costs attributable to higher quality requirements.

The remainder of costs were covered by an income-related voucher, with a relatively straight line reduction designed to maximize work incentives and equity. Maximum eligibility was calculated to assure that all families had access to high quality ECE at a reasonable share of after tax income, ranging from about 3 to 6% per child. In most cases, there were no parental employment restrictions applied to eligibility for assistance, since this is conceived of as an early learning initiative rather than a welfare program. Somewhat more than half of eligible families are estimated to participate in benefits, with higher participation among low and moderate income families, for whom the benefits represent a greater share of income.

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c. ***A public school type system***, which would replace the current ECE market with a publicly funded service, with all teachers having BA or MA degrees and receiving elementary teacher level compensation, and all children age birth through five eligible to attend for free, regardless of income. This is an illustrative option provided by HSPC, not recommended by the Illinois or Ohio Teams or the FYI ECE Initiative Planning Committee. It is modeled on the free kindergarten system, but with parents able to select among various types of ECE. A 100-percent-of-cost subsidy would be paid to providers, resulting in free ECE for all children in all types of care, regardless of income. We estimate a high subsidy participation rate, since there is no fee for parents.

d. Number of children benefiting

There are approximately 81,000 children age birth through five in Shelby County, all of whom would have financial access to high quality ECE under these approaches. About three fourths of Shelby County families would be eligible for some amount of assistance under the PPAP approach; all would be eligible for free ECE under the public school type approach. Not all children would actually receive financial support, either due to family income exceeding the limit under PPAP, or due to parental choice to not use non-parental care or to not participate in the financing program. Under PPAP, approximately two-thirds of total financial benefits would go to families below twice the poverty line, or $38,700 income for a family of four.

About 60 percent of children birth through five are in some form of non-parental care for more than five hours a week. We would expect this to increase to about 75 percent if high quality ECE were more financially accessible. Of the three quarters of Shelby County children eligible for some amount of PPAP assistance, we would expect about 56 percent to actually participate. Taking account of all these factors, we estimate that about 25,500 Shelby County children would receive assistance under a PPAP approach, and about 61,000 under a free public school approach. All 61,000 children using non-parental ECE would benefit from higher quality system of early care and education under either approach.

D. Shelby County costs of PPAP vs. a Public School Approach

Table1 shows our estimates of the gross and net costs of making high quality ECE accessible to all children age B-5 in Shelby County whose parents choose to use non-parental care that meets the quality standards. About 60 percent of families do not use any non-parental arrangements, particularly for infants and toddlers.

It should be noted that these are total subsidy costs, which could be borne by a combination of federal, state, local and private contributors. We show costs both in millions of dollars, and as a percent of total K-12 public school spending. The latter is shown to give a metric of the scope of public responsibility involved, not implying that the costs would necessarily be borne by the same sources as K-12, or disbursed through the public school financing system.

These costs include payments for all types of ECE that meet quality standards – center-based, FCC and FFN. The share for each is determined by the simulation model, taking into account current utilization patterns, the estimated cost of each type of ECE under the high quality policy specifications, and our estimate in changes in utilization patters as a function on increased financial accessibility under the PPAP policies.

Table 1. HSPC Cost Estimates for Providing Access to High Quality ECE for All Children Age Birth Through Five Years in Shelby County, TN

		Net Increase over Current Public Investment in ECE in Shelby County ($98 million; see Appendix)	
	Gross Cost of Assisting Families in $ Millions	**Increase in $ Millions**	**Increase as % Total K-12 Spending**
	Costs in Constant 2005 Dollars		
Current Public ECE Spending	$98	-0-	9 %
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Higher Cost/coverage PPAP Option	$313	$215	+17 %
Free ECE for All – Higher Costs	$524	$426	+33 %

These cost estimates could be refined by a more detailed specification of policies, entailing a longer term engagement with HSPC to apply its ECE Policy Simulation Model.

Table 2. Current Public Investments in ECE for Shelby County Data Provided to HSPC by the Consilience Group

[Funds for Programs Serving Solely Special Education Students Not Included]

Funding Source	**Birth to 5 Spending**
CCDBG	$57,102,427
Social Services Block Grant	$2,034,716
Child/Adult Care Food Program	$9,000,000
Pre-K Pilot State/Local Combined*	$1,212,250
Even Start*	$888,001
MCS Pre-K	$3,400,000
SCS Start Smart ECE Program	$263,000
Head Start	$23,000,000
Early Head Start	$1,040,322
TOTAL	**$97,940,716**

E. First Steps

The provision of high quality early learning starts with developing a well qualified and adequately compensated teacher corps; assistance to parents makes it possible to afford high quality staff. Building teacher capacity could therefore be the first step in a local initiative. Since individual teachers vary greatly in quality and move among centers, an approach that focuses on individuals might be most effective. A focus on individual teachers would also be consistent with a flexible, market-based approach.

A focus on individual staff also lends itself to establishing milestones for the effort and providing accountability for its success at modest cost. For example, in addition to making resources available for staff development, a registry of individual staff to see whether they have participated would be helpful to parents and provider organizations. A local sample survey of staff could be conducted periodically, asking what their qualifications are and in what professional development activities they have participated in the last year or two. This would allow the community to track the changes in staff qualifications and see what progress was achieved. Questions about barriers to improving qualifications could be helpful for making mid-course improvements in the plan. If resources were available, it would also be desirable to conduct field observations of teacher-child interactions on a sampling basis to assure that real quality, not just paper qualifications, were being achieved.

Surveyed staff could also be asked how many children, of what ages, they were responsible for in a typical week. This would yield data about how many children were being taught by teachers with higher or lower levels of qualification, providing a gauge of how deeply the quality initiative was penetrating the local market.

F. Conclusion

This analysis shows that it is possible to provide financial access to high quality early learning experiences for all Shelby County children age birth through five at a net cost equivalent to about 7 to 17 percent of public school spending, depending upon the option selected. Since the birth through five population is about 46 percent as large as the school age population, this seems to be a relatively modest investment to improve the chances for success in school and life for all young children.

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