

# *A Stitch in Time*

Calculating the Costs of School Unreadiness



By Charles Bruner



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# Preface



**T**he early years of a child's development are critical to establishing a foundation for success in school and beyond. Recent research into brain development has created a great deal of excitement as it has revealed the importance of early relationships and experiences to building the social, emotional, intellectual and academic skills that individuals rely upon throughout their lives. And ensuring that children enter school ready to learn is now a well-established national goal. Preparing young children to acquire early literacy and other fundamental academic skills and abilities is now seen as critical to achieving the high educational expectations we have for our nation's students.

At the same time, there is growing concern about the quality of early care and learning opportunities experienced by many children and their readiness to enter the formal education system. For example, many of the nearly 60 percent of children five years or younger in child care on a regular basis are in programs of substandard quality. Additionally, the growing emphasis on high educational standards and achievement for all students and the increasing attention to the importance of early literacy development leads to questions of whether we are meeting the diverse needs of all of our young children in ways that will adequately prepare them for academic success.

Improving the accessibility and quality of supports and services for young children and their families, as well as other human services, thus remains an important challenge for states and communities across the country. Since 1996, the implementation of welfare reform has created new demands for job training, child care, and other transitional services among former recipients of income assistance. Higher goals for educational achievement, including boosting early literacy and other academic skills, require new investments in teachers, schools, and special programs. Health care costs continue to rise, despite a decade of financing reforms. And in many towns and cities, renewing the economic and physical assets of the most disadvantaged neighborhoods is a high priority. Yet as the economic prosperity of the late 1990s recedes and new priorities for investment have emerged with the tragic events of September 11, 2001, governments at all levels, corporations, and private philanthropies in many cases have fewer available resources with which to address these multiple needs.

Nevertheless, the growing body of research on early child development provides guidance on how to enable parents to manage their nurturing responsibilities while providing for their families' economic needs, as well as how to design programs and services that effectively foster healthy development and provide special support for vulnerable children and families. Across the country, many states and localities, with support from an array of business, philanthropy, and community partners, are engaged in innovative efforts to expand and improve programs and systems of supports and services for young children and their families. To a large extent, the greatest challenge is not in knowing what constitutes high-quality supports and services for young children and their families. Rather, it is in gaining and maintaining concerted attention and resources to planning, financing, implementing, and sustaining high-quality, coherent systems that connect all the disparate state and local programs, services and resources.

This series of products, developed with support of the Carnegie Corporation of New York, is intended to advance effective financing and governance of early learning supports and services in order to promote children's readiness for school. They present conceptual frameworks, an array of effective strategies, and the experiences of states and communities in advancing the early childhood agenda, financing and governing promising approaches, and implementing and sustaining initiatives to achieve positive results. The products are intended to be useful tools to policy makers, program developers, community leaders, and other decision makers who are looking for creative new ideas for policies, programs and systems reforms and practical information on how to implement them.

This monograph, *A Stitch in Time: Calculating the Costs of School Unreadiness*, presents valuable information and approaches states and communities can use to make the case for investments in early childhood by focusing on the investment potential of early childhood services to school readiness and other desired results. It synthesizes the literature and evidence on early childhood development and school readiness and its relationship to future social problems and costs, and presents several alternative approaches that can be used to estimate the cost of school unreadiness, along with examples from states and communities that have employed these approaches. It also provides guidance for developing a process within a state or community that can lead to better results for young children and their families. The Finance Project is deeply grateful to the author, Charles Bruner of the National Center for Service Integration Clearinghouse, as well as the Carnegie Corporation of New York, for making the development of this monograph possible.

Cheryl D. Hayes  
Executive Director

# Introduction



State and local policy makers—legislators, governors and their staffs, special task forces and community collaboratives—generally raise the same, fundamental questions about new proposals for funding:

- \* What problem are you trying to solve?
- \* Why do you believe your proposal will work?
- \* How much will it cost?
- \* What benefits will it produce and why do they justify the costs?
- \* How will we know, several years from now, whether it really made a difference?

These are all good questions, but they are not easy to answer, particularly when proposals call for comprehensive approaches to broad areas of concern.

This monograph seeks to assist states and communities in using available information and evidence to respond to these questions around a very important and broad area of concern—“school readiness.” The primary focus is on how states and communities can use the emerging evidence about the costs and benefits in making early childhood investment decisions.





## The Reason for a Focus on Early Childhood

There is increasing interest in the early childhood field among state and local policy makers for at least three reasons.

**HEALTHY DEVELOPMENT.** First, there is growing understanding of the importance of a child's early years to lifelong development and well-being. Research highlighting the significance of brain growth and development in the very early years of life has received a great deal of public attention recently. In particular, this research has shown the devastating consequences of extreme abuse and neglect in the earliest years to child health and well-being. In addition, there has been greater understanding of how children learn to read and the importance of the early years in developing reading readiness. The concept of "emergent literacy" has played an increasing role in policy development at the federal and state levels regarding early childhood services and supports.

**SUPPORTING WORK.** Second, the nature of family life for those with very young children has changed dramatically over the last 30 years. Since 1970, the proportion of families where both parents, or a single parent, work outside the home has more than doubled to over 60 percent of all families with very young children. In addition, the number of young children raised by a single parent has more than tripled. These shifts have profoundly changed how pre-school children are cared for as well as the nature of the

workforce. Such broad demographic changes require transformations in the manner in which government supports those very young children.

**PROVIDING OPPORTUNITIES.** Third, there are growing disparities in the development and well-being of children across the country, with much of these differences reflected in early life and opportunities.

Some children entering kindergarten today are more advanced and prepared than ever before, while others appear to lag farther behind.

How policy makers and government leaders respond to early childhood and school readiness issues will be based upon values and politics as well as science. But evidence of the importance of early childhood and the investment potential of early childhood proposals and strategies is also needed to inform debate and action.

## Organization of the Monograph

This monograph is organized into three parts. The first part synthesizes some of the developing literature and evidence on early childhood and school readiness and the relationship to future social problems and costs. The second part provides several alternative approaches to estimating the cost of school unreadiness and begins to address policy makers' questions around the investment potential of early childhood services to achieve school readiness. The third part provides some direction to developing a process—within a state or community—to produce state- or community-specific information on school readiness that can lead to action.

# Inventorying What We Know

**B**oth research and common sense tell us a great deal about the importance of early childhood to lifelong development and success. The child development literature emphasizes that the first years of life, from the prenatal period to entry into kindergarten (around age five or six), are critical. During this period, children develop their sense of self, as well as make tremendous advances in their cognitive, physical, emotional and social growth.

Despite the critical nature of the early years, there is no universal public system supporting children during this period, as there is for school-age children. Today, however, the role of government in supporting very young children and their families clearly is being re-examined. At both federal and state levels, there have been dramatic increases in support for child care. The public welfare system has changed its policy from allowing single parents with very young children to stay at home with their children to expecting them to enter the workforce. States have developed new pre-school programs to improve children's school readiness, and the Head Start program has been expanded to include an early Head Start program for younger children. A variety of home visiting and parenting education and support programs have been funded by states and communities, usually on a demonstration basis, to assist parents in nurturing and supporting their infants and toddlers.

Increasingly, policy makers have looked to research to aid them in establishing such programs and in determining government's overall role in supporting very



young children and their families. Some of this research explores the economic benefits to society of improved child development and well-being, as well as the individual benefits to the children and their families.

## The Importance of School Readiness to Lifelong Development

In 1990, the bipartisan National Education Summit convened by President George Bush and the nation's governors, led by Governor Bill Clinton, established eight national educational goals. Fittingly, the first goal started with the first years of a child's life:

*By the year 2000, all children will start school ready to learn.*

The National Educational Goals Panel (NEGP) was established to assess and report on state and national progress in achieving these eight goals. Since 1990, both

state and federal governments have been working to develop effective strategies to improve school readiness, including understanding and measuring its components.

**THE CONCEPT OF SCHOOL READINESS.** The NEGP identified three components of school readiness: (1) readiness in the child; (2) school's readiness for children; and (3) family and community supports and services that contribute to children's readiness. The second and third components recognize that a young child's future growth and well-being cannot be examined by looking at the child alone, but also require looking at the child's environment. In particular, the ability of very young children to thrive is highly connected to the well-being of their family and their immediate environment. Furthermore, if schools are unprepared for children and ill-equipped to address their needs, a child's school readiness alone will not be sufficient to assure future educational success.

While some may view school readiness in the child as related only to cognitive development, the NEGP, based on the research on child development and early education, developed a broader definition that included physical, social, and emotional well-being, as well as cognitive readiness, highlighting five dimensions of children's readiness for school, shown in Table One.

The research is clear that when children are behind in one or more of these dimensions at their time of entry into school, they are likely to experience difficulties in both school and other aspects of their life.

**FACTORS, CONDITIONS AND EVENTS AFFECTING THE READINESS OF THE CHILD.** There is a wide array of research and evidence from a number of fields—including medicine, brain research, child development, family studies, sociology and psychology—regarding factors, conditions, or events that contribute to the different dimensions of a child's school readiness. Much of this research and evidence focuses specifically on factors, conditions, or events that jeopardize or harm child development and readiness. Some is based upon evaluation of specific interventions designed to address a specific factor, condition, or event in order to

## TABLE ONE: FIVE DIMENSIONS OF A CHILD'S SCHOOL READINESS

**Physical well-being and motor development.** This dimension includes health status, growth, and disabilities. It also includes physical abilities like gross and fine motor skills, as well as conditions before, at, and after birth, such as exposure to toxic substances.

**Social and emotional development.** Social development refers to children's ability to interact socially. A positive adaptation to school requires social skills such as the ability to take turns and to cooperate. Emotional development includes a child's perception of him/herself, the ability to understand the emotions of other people, and the ability to interpret and express one's own feelings.

**Approaches to learning.** This dimension refers to the inclination to use skills, knowledge, and capacities. Key components include enthusiasm, curiosity, and persistence in completing tasks, as well as temperament and cultural patterns and values.

**Language development.** This dimension includes verbal language and emerging literacy. Verbal language includes listening, speaking, and vocabulary. Emerging literacy includes print awareness (e.g., assigning sounds to letter combinations), story sense (e.g., understanding that stories have a beginning, middle, and end) and writing process (e.g., representing ideas through drawing, letter-like shapes, or letters).

**Cognition and general knowledge.** This dimension includes knowledge about properties of particular objects and knowledge derived from looking across objects, events, or people for similarities, differences, and associations. It also includes knowledge about societal conventions, such as the assignment of particular letters to sounds, knowledge about shapes and spatial relations, and number concepts (e.g., one-to-one correspondence of numbers and objects, and the association of counting with the total number of objects).

Source: Child Trends Research Brief, *School Readiness: Helping Communities Get Children Ready for School and Schools Ready for Children* (August 2000).



prevent, correct, or mitigate the harm to the child.

This diverse body of research points to several fundamental and universal needs of children for healthy growth and development:

- \* *Competent and confident parenting*—at least one, and preferably two, parent figures who provide nurturing, protection, and stimulation that is constant and consistent through the early years and with whom the child bonds and forms attachments.
- \* *Health and nutrition*—adequate food and exercise for physical and mental growth, protection against and response to disease and injury, and early identification and treatment of special health care needs.
- \* *Guidance and instruction*—help and practice in developing large and small motor skills, pre-literacy cognitive development, and socialization with adults and other children.
- \* *Constant, stable, and appropriate supervision*—continuous adult oversight and support that enables the child to safely explore the environment.

Failure to meet any of these needs puts a child at risk of school unreadiness. Further, the more severe the failure and the greater the number of unmet needs, the greater is the risk to the child. In other words, adverse effects are interactive. This does not lead to a simple causal model, but rather suggests the need for a comprehensive and integrative approach.



**ASSOCIATION OF SCHOOL UNREADINESS CHARACTERISTICS WITH FUTURE SOCIAL CONCERNS AND COST.** In addition to impacting a child's readiness for school, failures to meet these basic needs are strongly associated with other future social concerns and costs. There is a large body of evidence on the connections between poor outcomes in the early years related to each of these dimensions and future child problems and concerns—not only upon school entry but often extending well into adult life. Table Two summarizes some of the connections between poor outcomes in the early years and future social costs that have been established through research.

Table Two provides the beginning of a framework for assessing the costs of school unreadiness but does not show the magnitude of the relationships nor the degree to which strategies can produce positive changes or corrective actions that would avert these related social costs. Further, it does not display the interactive effects that are known to exist between poor outcomes in the early years and future social costs.

**TABLE TWO: FAILURES TO MEET ESSENTIAL EARLY CHILDHOOD NEEDS AND ASSOCIATED PROBLEMS AND SOCIAL COSTS: RESEARCH-BASED RELATIONSHIPS**

<b>Problems and Costs</b>	<i>Failure Areas</i>			
	Competent Parenting	Health & Nutrition	Guidance & Instruction	Consistent Supervision
<b>Child health costs</b>				
Neonatal intensive care		X		
Chronic and severe conditions	X	X		
Mental retardation/disability		X		
Neurological/mental health	X	X		
<b>Child education costs</b>				
Special education	X	X	X	X
Grade retention	X	X	X	X
School dropout	X	X	X	
Aggressive behavior	X		X	X
<b>Child human service costs</b>				
Child abuse/neglect		X		
Foster care	X			
Juvenile delinquency	X		X	
<b>Adulthood costs</b>				
Adolescent parenting			X	
Welfare dependency	X		X	
Criminal behavior/incarceration	X		X	
Institutional/disability care	X	X	X	
Lost economic activity/tax base	X	X	X	
<b>Parent costs</b>				
Workforce absenteeism				X
Workforce productivity	X			X
Welfare dependency	X			

Source: Child and Family Policy Center, *Investing in Families, Prevention, and School Readiness: A Framework Paper*.

**A VISUAL “EQUATIONS FOR SUCCESS” MODEL.** The “Equations for Success” model shown in Figure One begins to describe this complex relationship. At the far left are the four universal needs of young children. In the cloud to the immediate right are a variety of differ-

ent events or conditions that could occur or exist between conception and school entry that would jeopardize meeting those universal needs. Any child is likely, over the course of the pre-school years, to experience a number of events or conditions that could jeopardize



his or her well-being, with a potential impact on any or all of the measures of school readiness. It is how well these events or conditions are addressed that will determine the extent to which the child starts school ready to learn across the five dimensions of school readiness depicted in the center of the figure.

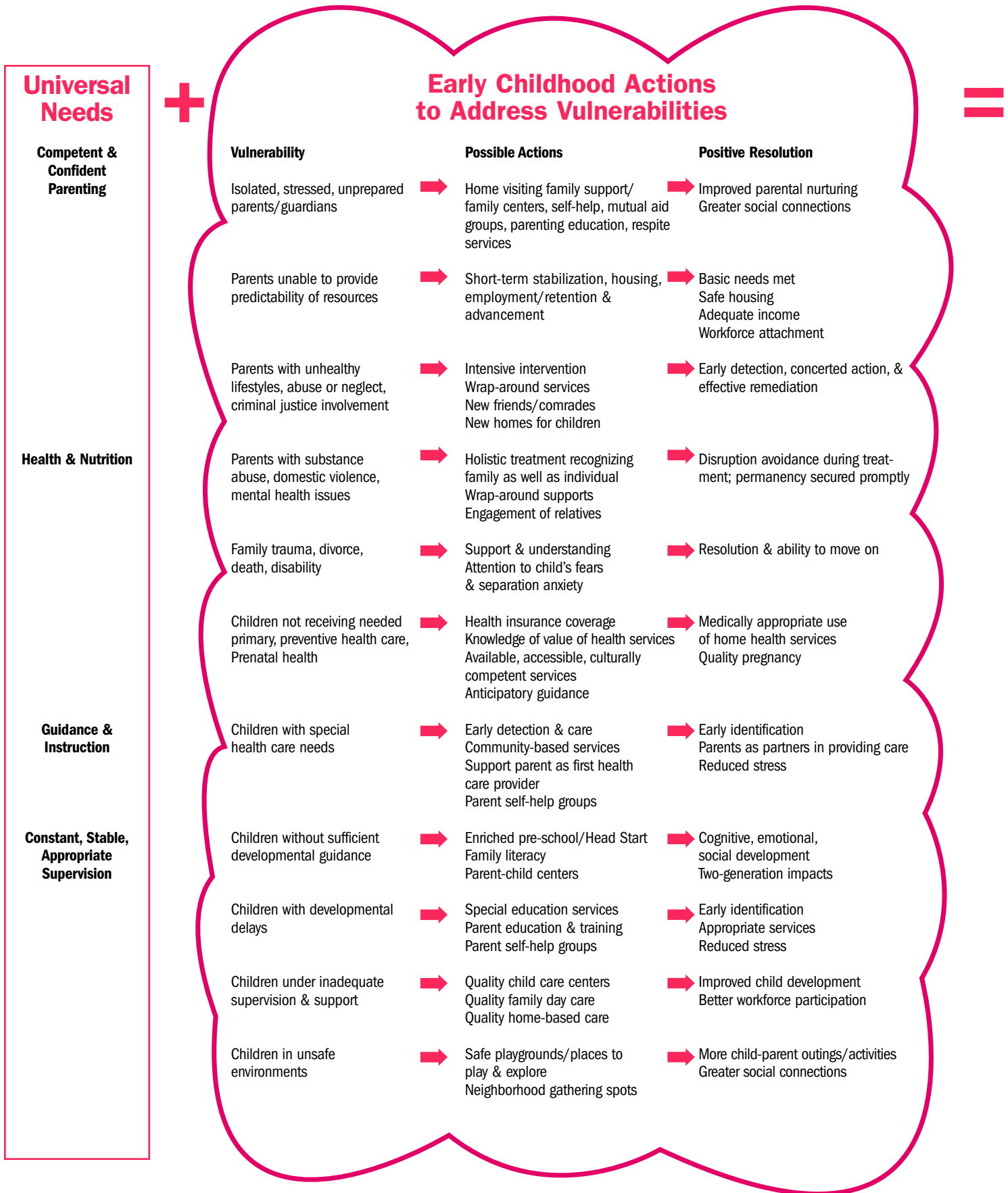
Associated with these vulnerabilities are possible actions that would effectively respond to the events and correct the conditions threatening school readiness and the results of those actions. The events or conditions, actions, and resolutions are depicted in a cloud to represent their interactive nature. If most of the vulnerabilities to meeting a child's universal needs are addressed successfully, a child will start school ready to learn.

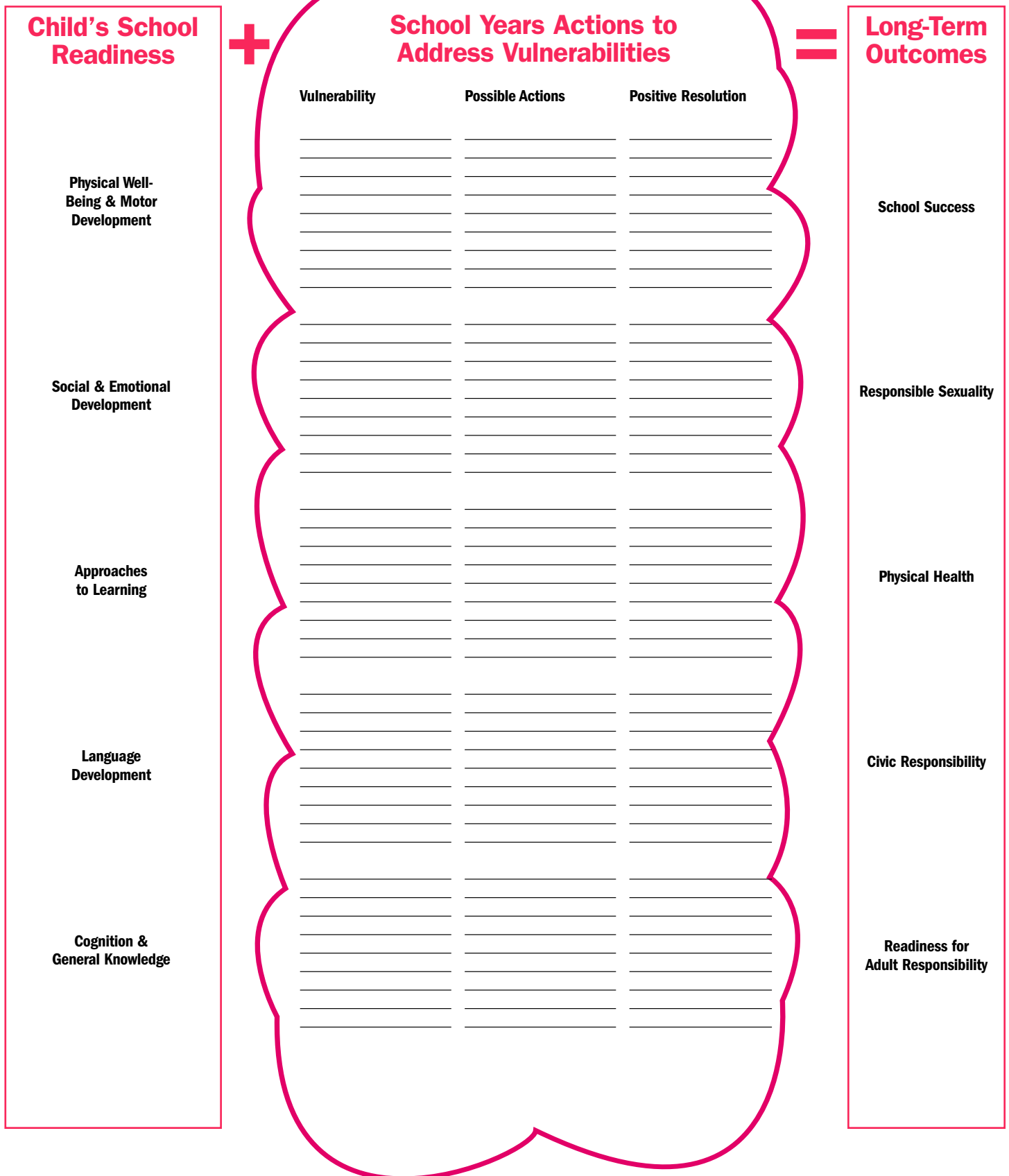
A similar cloud is depicted after school readiness to show that, even when children start school at an appropriate developmental level, other factors will be at play in determining their long-term success in preparing for adulthood. School readiness is not an inoculation against poor outcomes in future years, nor is the absence of school readiness on one or more dimensions a life sentence and absolute predictor of future problems.

The early childhood years are extremely important in a child's lifelong development, but they are not the only important areas for social policy and action. At the far right of the figure are long-term outcomes that society generally seeks for all children as they grow to adulthood. They also are those with substantial economic implications to society, and, in fact, where many of the most significant costs of school unreadiness have been shown to occur. While failure to address vulnerabilities in the early years (as represented in the first cloud) can have significant immediate costs (such as the costs of neo-natal intensive care or the costs of child placement due to abuse), studies have shown that the lifetime costs associated with poor educational status, lifelong health problems, and delinquency and crime are those that produce the largest public spending demands.



Figure One also suggests that effective strategies to improve school readiness need to address the types of events and conditions that may occur within the first cloud—either through prevention efforts that reduce the likelihood of their occurrence or through early intervention efforts that correct them or mitigate their impacts in a timely way.

**FIGURE ONE: EQUATIONS FOR SUCCESS: SCHOOL READINESS AND BEYOND**



In fact, most early childhood programs and strategies that have been developed by states and communities seek to address such concerns and should be measured on their ability to either prevent or correct them. Again, however, the “Equations for Success” model illustrates the fact that achieving very high rates of school readiness requires successfully addressing most of the concerns that can arise within that first cloud, not simply establishing a specific program to address one dimension of school readiness. In short, the model illustrates that there is likely to be no “silver bullet” to achieving school readiness, particularly given the diversity of very young children and families and their current strengths and needs.

### **Translating School Unreadiness into Future Social Costs**

Given the complexity and interactive nature of the “Equations for Success” model, there is not yet a single, established methodological approach for translating these relationships between poor outcomes in the early years, resulting school unreadiness, and future social concerns and costs into dollars and cents. A child’s growth and development during the early years of life does not lend itself to simple, linear regression models regarding causal relationships and their magnitudes, even if strong data existed regarding the strength of those various associations, which it does not.

Further, some poor outcomes that lead to a child’s unreadiness for school are preventable and others are not. Some congenital abnormalities are not preventable, and social policies will never prevent all accidents or traumas a child will experience. Policy still needs to address the needs of children with vulnerabilities that negatively affect their school readiness, and there may be very effective interventions to correct or remediate at least some of these poor outcomes in subsequent years. In estimating the costs of school unreadiness for the purpose of making the case for investments in prevention, however, this monograph will focus on only the costs associated with preventable poor outcomes in the early years and the resulting absence of school readiness.

Although there is not a single methodology for assessing the costs of school unreadiness, researchers have employed several different methodological approaches to estimate the costs of specific, different poor outcomes in the early years. Researchers also have calculated returns-on-investment from specific prevention efforts, both through longitudinal studies of programs and through simulation models. This work is discussed below.

**COSTS ASSOCIATED WITH SPECIFIC POOR OUTCOMES.** A variety of economic modeling efforts have sought to estimate the costs to society of specific conditions or concerns—child abuse, child poverty, school failure, substance abuse, and smoking. These have helped identify the size and therefore the importance to society of addressing those conditions or concerns (or simply “poor outcomes”). These analyses generally deal only with associations and not causal relationships, however. Even when they deal with causal relationships, they start at the point in the causal chain where the poor outcome occurs rather than at an earlier point. Since many of these poor outcomes have common causes, they cannot simply be compared with one another and added together to establish some cumulative impact. For instance, both child abuse and child poverty may be the result of a more fundamental condition of the parent’s inability to manage stress and provide a stable home environment. A calculation of the costs of child poverty may be capturing some of the same costs as the calculation of the costs of child abuse. Still, these analyses are helpful in showing the magnitude of the costs to society of various poor outcomes. Table Three shows the conclusions from some studies and reports employing modeling techniques.

**TABLE THREE: SOCIETAL COSTS ASSOCIATED WITH SPECIFIC POOR OUTCOMES**

<b>Behavior/Outcome</b>	<b>National Cost</b>
Cigarette smoking	\$50 billion annually in medical costs
Substance abuse and addiction	\$76 billion annually in state expenditures on effects of abuse and addiction
Low birthweight	\$4 billion annually in medical costs in first year of life
Child poverty	\$130 billion annually in lost economic productivity

Source for cigarette smoking (calculation for 1993) and low birthweight (calculation for 1988): Centers for Disease Control and Prevention. *An Ounce of Prevention...What Are the Returns?* 2nd Edition.

Source for substance abuse and addiction (calculation for 1998): National Center on Addiction and Substance Abuse. *Shoveling Up: The Impact of Substance Abuse on State Budgets*.

Source for child poverty (calculation for 1997): Sherman, Arloc. *Poverty Matters: The Cost of Child Poverty in America*.

An annotated listing of these and other studies and reports is provided in Appendix Two.

**GEOGRAPHIC COMPARISONS.** Several studies have contrasted the occurrence of poor outcomes within specific geographic neighborhoods (usually neighborhoods characterized by high rates of poverty) with the occurrence of these same poor outcomes in other neighborhoods. These studies then have used this information to assign expenditures by geographic area on specific social programs designed to address those poor outcomes. These comparisons have provided estimates of the savings in reduced public expenditures possible if those neighborhoods could improve their outcomes to a level comparable to the rest of the community. These analyses have helped show the magnitude of the costs of these poor outcomes within specific neighborhoods and help make a case for significant investments (or reinvestments) of public funds in those neighborhoods to reduce these disparities and their costs. An annotated listing of some of these studies also is provided in Appendix Two.

**RETURN-ON-INVESTMENT STUDIES.** Several programs working with young children or their families have been subject to rigorous long-term analysis that has tracked outcomes for those children into adulthood. A few of these have shown sizeable effects upon adult success and have calculated the public benefits of that success. This has led to a variety of estimates and claims of high

returns-on-investment from particular interventions. Some of these have a stronger research base than others, however. Table Four shows some of the commonly referenced claims regarding returns-on-investment from selected early childhood programs.

Even when the research base is strong, however, these programmatic returns-on-investment are very specific to program and context. The program upon which the research was based, for instance, may have focused on a specific population which constitutes only a portion of those who might be susceptible to poor outcomes in the early years. In addition, these programs generally have been of very high quality, employing dedicated and skilled workers and maintaining low staff-to-child ratios. In fact, there is little evidence that programs that do not maintain high standards produce positive effects, and there is evidence, particularly with respect to child care, that poor quality care actually produces harm and lack of school readiness.



**TABLE FOUR: COST-EFFECTIVE PROGRAMS FOR CHILDREN**

	<b>Benefits for Children</b>	<b>Cost–Benefit</b>
WIC—Special Supplemental Food Program for Women, Infants, and Children	Reduction in infant mortality & births of low birthweight infants.	\$1 investment in prenatal component of WIC has saved as much as \$3 in short-term hospital costs.
Prenatal Care	Reduction in prematurity, low birth-weight births, and infant morbidity.	\$1 investment can save \$3.38 in cost of care for low birthweight infants.
Medicaid	Decreased neonatal & infant morbidity & fewer abnormalities among children receiving Early Periodic Screening, Diagnosis, & Treatment (EPSDT) services.	\$1 spent on comprehensive prenatal care added to services for Medicaid recipients has saved \$2 in infant's first year; lower health care costs for children receiving EPSDT services.
Childhood Immunization	Dramatic declines in incidence of rubella, mumps, measles, polio, diphtheria, tetanus, and pertussis.	\$1 spent on Childhood Immunization program saves \$10 in later medical costs.
Home Visiting	Reductions in child abuse, improvements in child learning, and improvements in parental education and workforce attachment.	\$1 spent on home visiting saves \$4 in later welfare and child welfare spending.
Preschool Education	Increases in school success, employment and earnings, and self-esteem; reductions in teen parenting, juvenile delinquency, and adult criminal activity.	\$1 spent on high quality pre-school program (Perry Pre-School) produces \$7 gains in later educational costs, welfare costs, taxes from improved earnings, and reduced criminal activity and crime victim and justice system costs.

Source: Select Committee on Children, Youth, and Families. *Opportunities for Success: Cost-Effective Programs for Children Update*.

A fuller discussion and annotated references to these and other studies are provided in Appendix Two.

## Summary

While the current research base does not permit a definitive answer to the question, “What are the costs to society of school unreadiness?” there is a lot the research does show.

- \* First, *there are very significant public (and private) costs associated with a child's unreadiness for school*—costs that extend across multiple public service systems and responses.
- \* Second, *many of the poor outcomes associated with school unreadiness and future social costs are preventable* or, through early intervention, correctable, potentially with substantial savings as a result.
- \* Third, *a comprehensive approach is needed to produce the greatest gains in school readiness*. A focus on only one dimension (e.g., health or enriched pre-school) is less likely to address all the causal factors that contribute to school unreadiness and the contribution of that specific intervention to reducing school readiness may be diminished as a result (see Appendix One for a fuller discussion of this point).
- \* Fourth, *quality matters*. Programs that have demonstrated success and shown cost-benefits have been well-designed, employed skilled and dedicated staff, and have given attention to providing high-quality services.

## Using What We Know

**T**here is no single way to use the research and growing evidence that successfully addressing early childhood needs represents a cost-effective public investment. There are several ways to use different bodies of evidence to make the case for investment, however. Further, these can help identify the size of investments needed to impact outcomes on a statewide level and develop systems to track progress, build accountability, and reinvest savings. Several different approaches that can be employed are offered here, using, where possible, actual illustrations of data developed by states or communities.

### Estimating the Cost of Poor Outcomes in the Early Years

The costs of “poor outcomes” in early childhood are spread throughout state, local, and federal budgets. Most policy makers have little idea of the size of their overall costs to society, or a comparative sense of what government spends to address the consequences of these poor outcomes compared to what it invests to prevent them in the first place. Estimating these overall costs can bring much greater focus to the importance of early childhood (and school readiness) and to the relatively small governmental investments made in this area.

**RATIONALE FOR ANALYSIS.** The evidence is clear that problems and poor outcomes in the early years of life can have lifelong consequences. Children who start school with one or more risk factors are much more likely to experience problems later in life. These



include grade retention and special education services, child abuse and foster placement, chronic health conditions requiring continuing care, delinquency, unplanned and premature parenting, school dropout, emotional problems and mental health needs, involvement in the adult correctional system, and lack of employability and dependency in adult life. These relationships are shown visually in Figure Two.

These poor outcomes in the early years reflect a failure to address one or more of the vulnerabilities shown in the first cloud in Figure One and therefore are strongly connected to school readiness, as well as to government costs.

Not all problems that youth and adults experience can be traced back to early childhood, of course. Increased services and supports in early childhood cannot

**FIGURE TWO: RELATIONSHIP BETWEEN POOR OUTCOMES IN EARLY YEARS AND FUTURE GOVERNMENT COSTS**

Poor Outcomes in Early Years	Governmental Costs
Poor birth outcomes	Health care costs for chronic conditions
Early and chronic health problems	Health care costs for acute conditions
Poor bonding and attachment	Mental retardation and mental illness
Inadequate supervision	Child welfare and foster care
Poor cognitive development	Compensatory and special education
Undeveloped social skills	Juvenile delinquency
	Crime and adult corrections
	Dependency and welfare

eliminate all risk factors for children; many occur later in life (i.e., the second cloud in Figure One). Still, many problems and risks in the early years can be dramatically reduced, and improved school readiness can minimize the need for government expenditures in all the areas shown in Figure Two.

**POINT IN TIME ANALYSIS.** One step states or communities can take to estimate the size of the potential benefit from investments in early childhood is to examine their current budgets. They can identify the amounts they currently spend on poor outcomes that are at least partially preventable through effective early childhood interventions. As they do this, they also can examine the amounts they currently invest in developmental and prevention efforts for the early years of life.

This task requires a detailed analysis of state, federal, and local spending on a wide variety of health, education, human service, juvenile justice, and corrections programs. The results of an Iowa analysis, which broke public spending into early childhood prevention investments, spending on income maintenance and safety net programs, remediation and compensatory services, and public protection services,

are shown in Figure Three. The latter three bars collectively cover most of the governmental costs known to be caused, at least in part, by poor outcomes in the early years.

Figure Three shows that Iowa devoted less than 3 percent of all non-educational spending on children and families to prevention or early intervention efforts, compared to 97 percent dealing with negative consequences that at least partly could be attributed to school unreadiness. It also suggests that the potential for investment is substantial, as the combined expenditures on remediation, maintenance, and public protection exceeded \$2.1 billion annually (in a state with a population of 2.9 million). An investment in the tens, or hundreds, of millions of dollars could be justified if it could substantially reduce the need for such expenditures.

This Iowa analysis required that a number of decisions be made about where to include specific services. For example, the analysis had to determine what part of the Women, Infants, and Children (WIC) program represented a prevention-oriented service investment (e.g., its nutritional counseling component)



and what part represented a maintenance expenditure (e.g., the actual value of the WIC coupons). The Iowa study sought to establish a clear set of guidelines for determining how programs and expenditures were to be categorized, but many of these represented judgment calls that were at least partially subjective. (A detailed table describing Figure Three is provided in Appendix Three.)

The aggregation into the four categories — prevention, maintenance, remediation, and public protection — provided a way to convey a complex body of data in an understandable way to policy makers and the public.

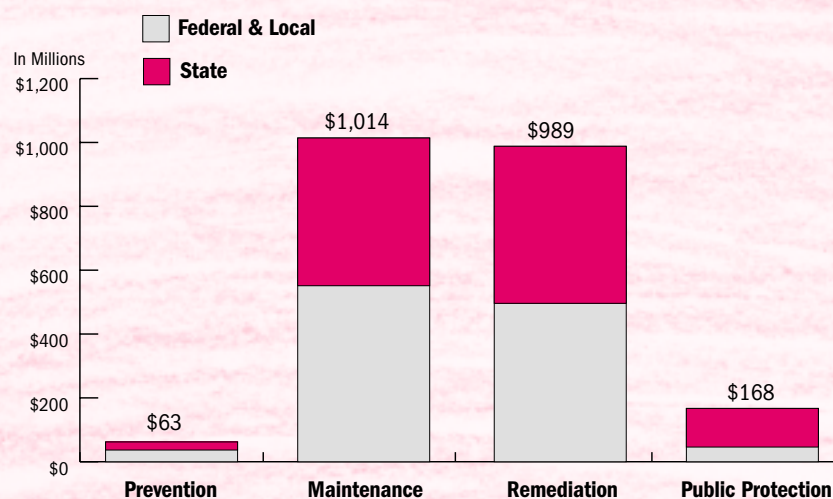
**LONGITUDINAL ANALYSIS.** An analysis is more powerful if it represents more than a single point in time and captures trend data on expenditures. A subsequent analysis of Iowa state budgets over a ten-year period showed that the largest rates of spending increase were in three areas — child welfare and juvenile justice services, Medicaid spending for the non-elderly, and prisons and community corrections. These all represent expenditures on problems that at least in

part could be averted through improved child outcomes in the early years. Many states have experienced very similar growth patterns in their budgets, and longitudinal analyses can be used to make the case for investments in prevention programs to help reverse these expenditure trends.

**PLACE-BASED ANALYSIS.** In addition to examining expenditures on poor outcomes for a state or community as a whole, it also is possible to examine these expenditures in smaller geographic areas. Several efforts have assessed the costs to society of poor outcomes within poor, or high-risk, neighborhoods and then compared these costs with the costs incurred in the remaining parts of the community. The differences can be quite profound, as shown in the example from Allegheny County, Pennsylvania, on the following page.

As the top half of Table Five shows, the rates of poor child outcomes and family conditions are much higher in Allegheny County's high-risk neighborhoods, some by a factor as much as seven-to-one. The bottom half of Table Five provides estimates of what

**FIGURE THREE: PUBLIC NON-EDUCATION SPENDING ON CHILDREN AND FAMILIES IN FY 1992**



Source: *Reinventing Common Sense, Kids Count Data Book, 1994.*

**TABLE FIVE: CHILD AND FAMILY WELL-BEING IN HIGH-RISK AND OTHER ALLEGHENY COUNTY NEIGHBORHOODS AND RELATED FISCAL OPPORTUNITIES**

	NEIGHBORHOOD COMPARISONS		
	High-Risk Neighborhoods	Other Neighborhoods	Ratio
<b>Overall Characteristics (1990 Census)</b>			
Population	222,865	1,113,585	
Child Population	52,923	229,260	
African-American Population	109,489	40,061	
<b>Child Outcomes</b>			
Low birthweight % (1996-7)	12.6%	6.5%	1.9:1
Child welfare serv./1000 ch. (1998)	84.6	12.1	7.0:1
Delinquency pet'ns /1000 ch. (1999)	52.5	8.2	6.4:1
Violent offenses/1000 ch. (1997)	13.1	2.9	4.5:1
Teen births/female teens (1996-7)	7.3	2.1	3.5:1
<b>Family Conditions (1990 Census)</b>			
Single parent family percentage	59.9%	19.7%	3.1:1
Population under 6 in poverty	55.0%	11.1%	5.0:1
Percent 25+ not high school grad.	33.2%	18.7%	1.8:1

PROJECTED SAVINGS FROM COMPARABLE OUTCOMES  
IN HIGH-RISK NEIGHBORHOODS WITH OTHER NEIGHBORHOODS

<b>Maintenance Savings</b>	
TANF (welfare)	\$ 29,300,000
Medicaid	\$ 69,900,000
Food Stamps	\$ 39,300,000
<b>Remediation/Public Protection Savings</b>	
CYS (child welfare)	\$ 48,900,000
Juvenile Detention	\$ 17,900,000
County Jail	\$ 14,500,000
Prison	\$ 43,400,000
<b>Additional Tax Revenue</b>	\$ 291,500,000
<b>Total Potential Savings</b>	\$ 554,700,000

Source: Bruner, Charles with Martha Townsend. *Investing in Family Centers: Opportunities for Positive Returns for Allegheny County*. (2000 Update of 1996 Report).

lowering the rates of those poor outcomes and conditions in the high-risk neighborhoods to the same levels as the rest of the county (by no means perfect, itself) would produce in savings in seven categories of public spending and increases in tax revenue.

The comparison serves several purposes. First, it helps identify neighborhoods for special attention and invites a more comprehensive approach within those neighborhoods, given the magnitude of the identified costs. Second, it provides a strong logical argument that at least this amount of social costs within high-risk neighborhoods is preventable, as it does not exist in the other neighborhoods. Third, it raises issues of disparities of opportunity that represent legitimate policy concerns for any egalitarian society.

The Allegheny County analysis also suggests that multiple approaches are necessary to significantly reduce these disparities and achieve societal gains. A second level of analysis in the Allegheny study examined the potential for expanding home visiting and family support programs to all children and families who might benefit from them. This could have been achieved with an additional investment of \$15 million (a major commitment), but, even posing a 3:1 return-on-investment in reduced social costs, would only make a small dent in the \$555 million in potential savings. While a significant gain, such a strategy, without other efforts as well, could be expected to improve school readiness and overall child outcomes within the high-risk neighborhoods only a small part of the way toward the rest of the community and to have only a small impact on community-wide measures of school readiness.

**DISCUSSION.** Analyses of the cost of poor outcomes can show the very high costs of poor child and adult outcomes to government and society. They can indicate the relatively small investment on the “front end” of the system, contrasted with the large expenditures on the “back end” of the system. They can begin to point to areas where gains might be identified and used as a basis for re-investment in additional early childhood

investments. They can start a more serious review of early childhood services and begin to make a fiscal case for investments in school readiness.

The first two of these analyses can generally be conducted using existing reports and information, although they are likely to require a good understanding of the state budget and of federal funding streams. They also will require obtaining and reconciling detailed information from a number of different sources. The last of these analyses requires some capacity to break down (or “geo-map”) administrative data to a sub-county level, which is becoming increasingly possible but often requires special analytic tools and programs. Further, there may be limited information on client addresses in some administrative systems, which is required to do such analysis.

Still, any of these analyses can be performed without collection of new information or data sets, drawing from existing information available at the state (or community) level. In addition, data from the American Community Survey (ACS) should greatly facilitate geographic analyses by providing much more timely general demographic information. The ACS is a continuous measurement survey that will take the place of the traditional once-a-decade census “long form.” By sampling on an annual basis, the ACS will be able to provide detailed information on an ongoing basis for all jurisdictions beginning in 2003.

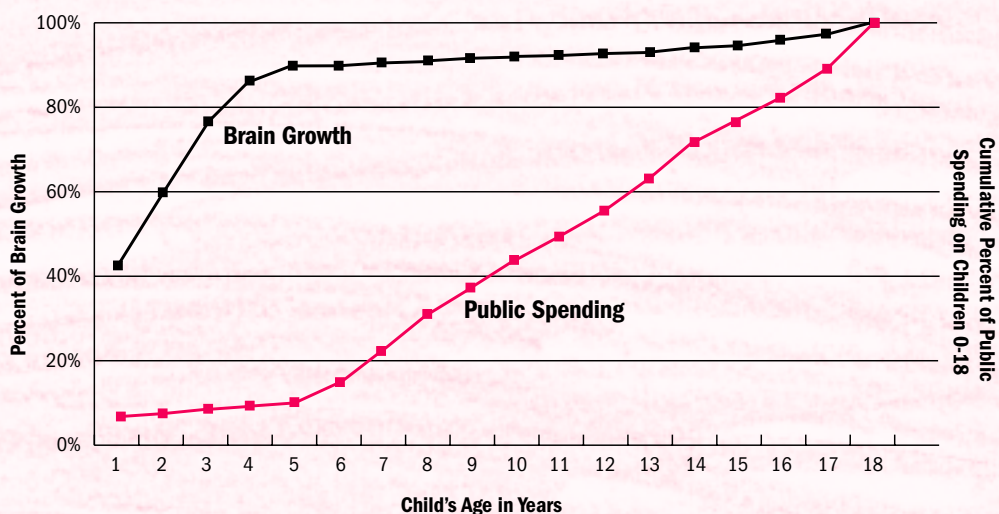
Estimating the costs of poor outcomes, as described above, does require that a number of assumptions and decisions be made—of what spending to include and under what category or designation to include it. The credibility and utility of such studies depend greatly on how and by whom these assumptions are made, a topic that will be discussed later.

### Contrasting Investments in Early Childhood with Investments in Later Years in Life

A second approach used to support early childhood investments involves an examination of public spend-

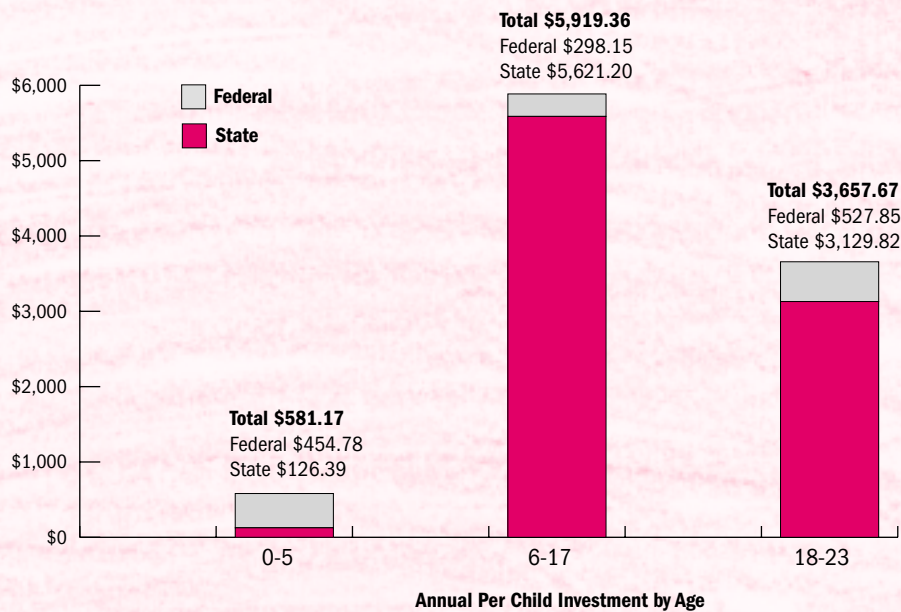


**FIGURE FOUR: CHILD DEVELOPMENT AND PUBLIC EXPENDITURES: ARE PUBLIC INVESTMENTS IN LINE WITH INVESTMENT OPPORTUNITY?**



Source: RAND figure developed as part of: Karoly, Lynn, et al., *Investing in Our Children*

**FIGURE FIVE: COMPARATIVE IOWA INVESTMENTS IN DEVELOPMENTAL & EDUCATIONAL SUPPORTS: BY CHILD OR YOUNG ADULT AGE, 2001 STATE FISCAL YEAR**



Source: Child and Family Policy Center Analysis. See Appendix Three for data sources.

ing by a child's age. By contrasting investments in children by age and brain growth and development, the RAND Corporation has produced a vivid, visual depiction of this investment imbalance, as shown in Figure Four.

States also can produce such investment charts by a child's age. Iowa has analyzed state, federal, and school district investments in educational and developmental supports for children by child age. The most recent analysis is shown in Figure Five.

As Figure Five shows, Iowa invests much more for school-age children and young adults than for children of pre-school age. Moreover, most Iowa spending on children of pre-school ages is from federal programs (such as Head Start and child care funding), rather than state programs.

**DISCUSSION.** The results from such analyses are usually quite striking, which is part of their power. Even in states with relatively large commitments to early childhood, the per capita investments for young children generally pale in comparison with those for school-age children and even youth and young adults. At the same time, the recognized cost of providing quality and developmentally appropriate full-time child care for very young children, particularly because of the need for low ratios between caregivers and children, is higher than current per pupil expenditures for K-12 students. Nationally, the most commonly cited figure for assuring quality child care for a three- or four-year-old is \$8,000 annually, with a figure substantially higher for infants and toddlers.

Again, these analyses can be completed using currently existing data, although that data often must be obtained from multiple sources. As with cost of poor outcomes analyses, the credibility and utility of such studies depend greatly on how and by whom the assumptions are made, a topic that will be discussed in the next section.

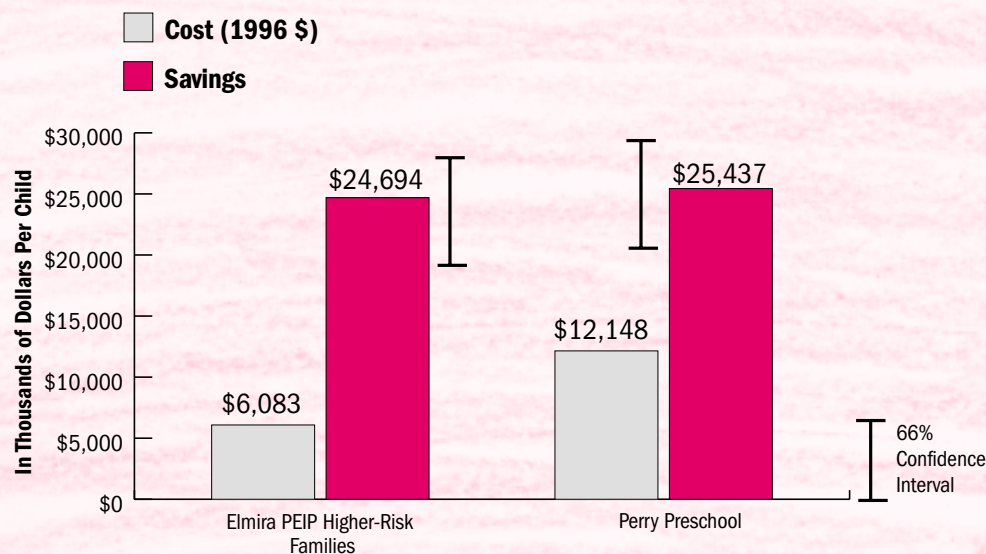


### Modeling Possible Returns from Specific Investments on Future Governmental Budgets

A final approach to making an investment case for early childhood services is to propose a specific model for adoption and project its potential cost-benefits. The Elmira Nurse Home Visiting Program (now called the Nurse Family Partnership Program) and the Perry Pre-School Project in Ypsilanti, Michigan, a comprehensive pre-school initiative, most often have been employed as examples of the returns-on-investment possible from early childhood services. Both have been subject to longitudinal analyses that have identified their impact on significant benefits and reduced future social costs. In general, such programmatic efforts require substantial investments per child. For the Nurse Family Partnership Program, the costs per family for home visiting are in the \$6,000 range. For the Perry Pre-School Project, the costs of pre-school and attendant parent involvement would require \$13,000 annually, in today's costs.

In addition, the Abecedarian Project, the IDHP program, the Chicago Pre-School Project, and the Early Head Start program have been recognized as having strong evaluations that indicate substantial cost-benefits. It should be pointed out, however, that evaluations

FIGURE SIX: RAND COST-SAVINGS ANALYSIS OF PEIP, PERRY PRESCHOOL STUDIES



Source: Karoly, Lynn, et al., *Investing In Our Children*

of many early childhood programs—particularly those involving home visiting or case management—have not shown significant long-term effects. This includes the federally-financed Comprehensive Child Development Program (CCDP), which expended over \$13,000 annually per family.

The returns-on-investment for the Nurse Family Partnership Program have been presented at \$4 returned for every \$1 invested, when applied to high-risk families (there were gains when applied to all families, but not at a level that provided positive cost-benefits to society). The Perry Pre-School Project presents a return of over \$7 for every \$1 invested, although the RAND Corporation, using a different methodology, places that figure at closer to \$2 for every \$1 invested (the RAND Corporation confirms the \$4 return-on-investment for the Nurse Family Partnership Program, although many of the returns are from welfare savings derived in pre-TANF years—See Appendix One for an extended discussion on this issue). Figure Six provides the RAND

Corporation chart outlining the cost-benefits for these two programs.

State policy makers have used return-on-investment analyses of both programs as rationales for investing in early childhood services, although the services developed often have been significantly different in comprehensiveness, intensity, and population served than the programs upon which the analyses were based. Again, program quality matters and an emphasis on skilled and dedicated staff and strong adherence to program guidelines is characteristic of all programs showing positive cost-benefits.

States or communities can use such models to explore what potential gains exist from taking specific approaches “to scale”—to serving the entire population that might benefit from the intervention. Conducting such an analysis requires the following:

1. Identifying the size of the target population that could be reached and served.



2. Determining how much currently is being expended on that population for related services.
3. Determining how much more needs to be invested to fully implement the model for the entire target population.
4. Estimating where the expected savings or returns-on-investment from the additional investments will occur, for future review of real program impact.

For example, an Iowa study posed a model of home visiting and family support very similar to the Nurse Family Partnership Program, concluding that 15,000 families with children aged 0-2 could benefit from and would use such a service, with a projected investment need of \$50 million annually to reach all families. It also found that, through over a dozen existing demonstration programs or other services,

over \$17 million in some level of case management, home visiting, and parent education services were being provided to this population, for an investment gap of approximately \$33 million. If the model were implemented and achieved a three-to-one return-on-investment, the study also concluded that it would reduce expenditures on remediation, maintenance, and public protection by \$150 million. This amount represents slightly more than 5 percent of the state's overall expenditures on at least partially preventable poor outcomes, suggesting that, while such a result would be cost effective, it would not address all, or even most, of the needs for the population.

**DISCUSSION.** It is simplest for policy makers to think in terms of specific program models, especially those that show evidence of substantial gains in child outcomes related to school readiness. Currently, however, only a few programs have definitive research findings regarding their cost-effectiveness, and most of these findings apply to a small subset of families and young children who are at-risk of poor outcomes in the early years. Even if these programs are brought “to scale” to serve all the families and children they have been determined to benefit, their impact on any specific outcome related to school readiness can only begin to meet the first educational goal, that all children start school ready to learn.

At the same time, such modeling can enable states and communities to move forward with a specific model and gather programmatic information on its impact that can show gains (demonstrating that change is possible) as well as point to other areas of needs and gaps in service for which interventions are required.

The RAND Corporation recently has produced a guide to assist program administrators in developing cost-benefit and return-on-investment analyses of their programs. This and other resources described in this monograph are listed and briefly summarized in Appendix Two.







## *Developing a Process for Action*

**C**learly, there is no foolproof way to estimate the costs of school unreadiness or develop a comprehensive or targeted strategy to improve early childhood outcomes and school readiness. There is, however, a growing menu of partial and alternative approaches that can address some questions and:

- \* Raise the issue of early childhood to greater focus as a state or community investment opportunity
- \* Secure political and financial support from diverse sources that would benefit from improved school readiness
- \* Develop specific estimates and expectations for programmatic efforts that are funded, based upon results related to school readiness
- \* Secure commitments for reinvestments of savings from those efforts
- \* Create more comprehensive approaches to early childhood, with a long-term focus upon establishing a system of early childhood that achieves the first National Educational Goal.

The most sophisticated and rigorous statistical modeling or budget analyses on early childhood may not produce the types of investments needed to improve school readiness. However careful any analysis, it can become subject to critique and potential dismissal for the assumptions it must make and for the missing data elements that are certain to exist.

The process used in developing early childhood investment plans and conducting cost-of-school-unreadiness analyses is ultimately as important as the



product that is produced. The process can lend credibility to the findings that are developed and the assumptions upon which they are made. The process also can enlist advocates for using the findings to make investments.

A report produced by the “usual suspects”—child advocates and the early childhood education practitioner community—can easily be dismissed as self-serving, however careful and rigorous the analysis.

Alternatively, engagement of the business community can add credibility to the findings and enlist new constituencies. Business people also have an action orientation that can lead to making immediate use of the findings in designing programs and strategies, even if there is no definitive proof.

**TABLE SIX: COMPARISON OF A TRADITIONAL PROPOSAL TO A BUSINESS PLAN**

<b>Proposal Format</b>	<b>Business Plan Approach</b>
<b>Needs Statement</b> <ul style="list-style-type: none"> <li>• Description of the nature and depth of the problem in society (may or may not be related to program)</li> </ul>	<b>Market Description</b> <ul style="list-style-type: none"> <li>• Definition (geographic and needs based) of the market to whom the product/service is directed</li> <li>• Number in market products are designed to reach</li> <li>• Share of the market</li> <li>• Characteristics of the program or service</li> </ul>
<b>Goals and Objectives</b> <ul style="list-style-type: none"> <li>• Vision and values</li> <li>• Mission and purpose statements</li> <li>• Proposed outcomes</li> </ul>	<b>Performance Targets and Consequences</b> <ul style="list-style-type: none"> <li>• Tangible results which the program or service will achieve</li> <li>• Cost benefits/returns on investment</li> </ul>
<b>Program Description</b> <ul style="list-style-type: none"> <li>• Description of activities</li> <li>• Description of service delivery mechanisms</li> </ul>	<b>Product and Advantages</b> <ul style="list-style-type: none"> <li>• Products and services</li> <li>• Evidence the product will achieve intended results</li> <li>• Comparative advantage over other products/services</li> </ul>
<b>Workplan</b> <ul style="list-style-type: none"> <li>• Detailed series of steps to implement goals/timeline and chart</li> <li>• Budget</li> </ul>	<b>Milestone and Thresholds</b> <ul style="list-style-type: none"> <li>• Process and content outcomes established to identify progress and ensure project is on course or make adjustments</li> <li>• Financial needs and projections</li> <li>• Strengths, weaknesses, opportunities and threats</li> <li>• Strategic plan and timetable for marshaling resources as well as contingencies if established milestones cannot be met</li> </ul>
<b>Proposing Group</b> <ul style="list-style-type: none"> <li>• Entity or entities responsible for project and their qualifications</li> </ul>	<b>Project Management</b> <ul style="list-style-type: none"> <li>• Key individuals responsible to ensure project success and their qualifications and skills relative to the project's needs</li> <li>• Governance, management, and administrative systems critical to success</li> </ul>
<b>Evaluation</b> <ul style="list-style-type: none"> <li>• Project assessment at conclusion of project</li> </ul>	<b>Learning and Development</b> <ul style="list-style-type: none"> <li>• Methods to make course corrections and continuously improve performance</li> <li>• Methods to improve products based on customer response</li> </ul>

Sources: Adapted by author from The Finance Project, *Sustainability Planning Workbook*; and Williams, Harold, et al., *Outcome Funding: A New Approach to Targeted Grantmaking*. For additional information on The Finance Project's sustainability work, including technical assistance capabilities, see [www.financeproject.org](http://www.financeproject.org).



The use of actuaries to validate data, a common business practice, can provide additional discipline in making assertions regarding data as well as providing greater credibility to the actual report findings.

## Developing an Early Childhood Business Plan

An effective approach to making an investment case for early childhood services is to develop an actual “business plan” that incorporates multiple investments and sets in place a process for tracking their impacts over time, with an expectation for re-investing savings accrued from reducing future social costs into program maintenance or expansion. The use of the term “business plan” can help enlist corporate interest as well as business thinking. The Finance Project and others, such as the Rennselaerville Institute, have proposed a business plan approach as an alternative to traditional human services funding approaches. Distinctions between a proposal and a business plan are shown in Table Six.

There are some strong advantages to applying “business plan thinking” to early childhood services. First, a business plan does not require definitive research and answers to questions before proceeding, but it does require a strong logic model that describes intended short- and long-term impacts. Second, a business plan also requires a method for continuously reviewing the implementation of the plan to insure that it makes corrections, when necessary, to achieve first its short-term, and then its long-term, goals. Both of these features provide a level of outcome accountability that policy makers are likely to seek in making investments, in hard-nosed terms but without requiring definitive answers before the investments are made.

Allegheny County, Pennsylvania, and Polk County, Iowa, both have developed “early childhood business plans.” Both drew upon much of the research and evidence cited in this monograph regarding the cost of bad outcomes and the potential returns-on-investment from early childhood services. In both instances, accounting firms were enlisted to review and verify the data and assess the potential for positive returns.



The Allegheny County plan has resulted in substantial private sector commitments to early investments, with strategies for subsequently drawing upon public sector funding, based upon returns from these investments. The Allegheny County Early Childhood Initiative raised more than \$20 million for its investments in high-risk neighborhoods. Initiative developers also learned a great deal in the implementation process and improved early childhood services substantially in the county’s poorest neighborhoods. In particular, Allegheny County policy makers discovered that expanding early childhood services (such as child care and enriched pre-school and family literacy programs) in poor neighborhoods required substantial upgrading of existing services as well as development of new ones. This required significant capital expenditures to create suitable service locations and significant human capital and workforce development efforts to build the workforce needed to provide effective services. On the other hand, policy makers also found that these investments had multiplier effects within these poor neighborhoods by creating additional economic activity. A business plan approach enabled substantial adaptation of original strategies in order to address these barriers and opportunities that would not have been possible with a more circumscribed, program model funding approach.



Business planning has a certain credibility with the corporate community that traditional human services needs assessments and resource inventorying do not. It speaks to the bottom line, and it has a rigor in continuously measuring progress and adapting strategies to achieve specific objectives.

In both Allegheny County and Polk County, business planning has shown promise in the early childhood arena in enlisting new constituencies and new thinking into the school readiness discussion. It also has identified additional challenges and opportunities in building early childhood systems to achieve school readiness, particularly in those neighborhoods with the most to gain by such systems.

**ENLISTING CHAMPIONS.** A key component of creating a successful and sustainable business plan involves enlisting a set of champions for using data and research to develop school readiness strategies as the first step in the process. This may be in the form of a select task force, a statewide steering committee, or a special panel, but it is important to secure individuals who will be advocates within their spheres of influence for the analyses and studies that will be completed. Ideally, a set of champions should include representatives from

the following spheres of influence:

- \* Corporate leadership, including large and small businesses
- \* Pediatric and medical community leadership
- \* Philanthropic (United Way, Community Foundation, etc.) leadership
- \* Faith community leadership
- \* Educational leadership
- \* Law enforcement leadership
- \* Celebrity support

The inclusion of the first group and the last two groups on this list is worthy of special attention. Brad Butler, former CEO of Proctor and Gamble, has been one of the leading forces in pressing for enriched pre-school programs for poor children, working with the Committee for Economic Development in the mid-1980s and early 1990s to focus attention and significant expansion of governmental activity in this area. Jim Ranier, former CEO of Honeywell, International, started first as a leader in Minneapolis in developing the *Success By 6* approach to school readiness and has successfully worked to expand that approach through United Ways across the country, enlisting corporate and

business leadership in the process. Corporate leaders have been instrumental in many states in developing early childhood agendas, because they recognize the long-term value of an educated workforce to economic development and growth and because they recognize the need for safe and reliable child care for the productivity of the current workforce.

Law enforcement also has played a strong leadership role, with a national organization of law enforcement officers, *Fight Crime: Invest in Kids*, promoting prevention efforts as a means to achieve public safety. Law enforcement officials can be passionate spokespersons on early childhood issues, as they see the consequence of family breakdowns and school unreadiness in juvenile and adult criminal activity that they must address.

Finally, both local and national celebrities sometimes can be enlisted to support early childhood services. Rob Reiner, actor and co-founder of Castle Rock Entertainment, formed the *I Am Your Child Foundation* and began a national public awareness and engagement campaign to communicate the importance of the prenatal period through the first three years of life. Through his involvement in the *I Am Your Child Foundation*, Reiner spearheaded a successful 1998 California ballot initiative, Proposition 10, to place a 50 cent tax on cigarettes to fund early childhood development programs for the state's youngest children.

In short, corporate and law enforcement leadership can bring a very different source of credibility, as well as hard-nosed and action-oriented thinking, to the process. Celebrities often can bring instant recognition and public visibility to campaigns, as well as substantial public relations expertise.

**SELECTING A COURSE OF STUDY.** The more powerful and influential the champions, the more likely they are to want to lead the process — not with details — but with overall drive and focus. They may not get into the minutiae of details around a study, but they will want to help determine the overall direction of the work and to monitor the progress. In short, this group should be

enlisted from the outset in determining what type of information should be collected and what type of analyses are needed (among the many presented here) to drive action. The group also can decide what information it needs before it can begin to make decisions.

**CONDUCTING THE WORK.** Once direction has been set, the actual data collection and analysis needs to be conducted in a timely fashion, with key decisions brought back to the group for review and action. Many assumptions have to be made in conducting these analyses, and the more they are decided upon and owned by the champions, the more they will be credible to the broader public.

**TAKING ACTION.** As work and analysis proceeds, an action plan also has to be developed that draws upon the ability of champions to produce change. Leaders can provide more than legitimacy for an agenda; they can bring that agenda into action, particularly through securing public (and private) funding.

This requires expert staffing and substantial technical support, but this staffing and technical support must balance its own knowledge and expertise with the expertise and power the champions possess. Success is dependent upon truly using the expertise and power of others. In the early childhood arena, where school readiness and parent employment and productivity are real concerns within the larger community of leaders, the opportunity exists for engaging and drawing from these spheres of influence.



# Appendices

## Appendix One:

### *Elaboration on Some Technical and Conceptual Issues in Cost of Failure for Public Services*

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Return-on-investment analyses can be conducted prospectively or retrospectively. The return-on-investment field largely has been developed for the business world. It often is applied prospectively—to aid in making business decisions on whether or not to develop or scale-up a new product for mass marketing or to identify which approach to building market share or streamlining production has the greatest potential for profitability. A return-on-investment model is developed by making assumptions about the investments that will be needed and the impact these investments will have on future market penetration, sales, internal production and operating costs, and profitability. As investments are made, their impacts can be tracked to provide a retrospective assessment of the actual size of the return-on-investment that occurs.

While not always straightforward, it is much easier to do return-on-investment analyses within a particular business than for public systems. In businesses, the end goal (the business's profit) can be defined with some precision and is measurable on one dimension (dollars and cents). Applying return-on-investment methodologies to public systems—or even to individual programs—is much more complicated. Not all the impacts of a public system investment or program

may be easily measured in dollars and cents. And, even when these benefits can be translated to dollars and cents, they may be spread across a multitude of potential programs and systems (not just the business's profit line).

Still, there are some very important principles that have been established in the return-on-investment field that hold in any applications that are made to public systems. Several of these are discussed below. In addition, concerns that need to be recognized when applying return-on-investment analysis to large and complex public systems are discussed below.

**DISCOUNTING FUTURE RETURNS.** Investments are made in the hope that there will be benefits, sometime in the future, which justify that investment. These future benefits may be years, or even decades away. In fact, investments in early childhood strategies generally are presumed to have their major social economic benefits when the child becomes an adult, a decade or more after the investment is made.

At the same time, judged solely in dollars and cents, there are alternative investments that could be made with the same funds. Even putting the funds into a money market account (a very conservative and safe investment, from the perspective of preserving one's capital) will nearly insure that the investment grows, over time, at a rate exceeding the rate of inflation. Investment in the stock market (considered a riskier investment, due to its volatility) historically has yielded



much higher rates of return, well above the rate of inflation. In fact, investing in the stock market must hold a very credible expectation for those higher returns, or investors would keep their money in those money market accounts.

To take future expectations into account, return-on-investment analyses set formulas that *discount* the value of a dollar earned in the future compared with the dollar invested today. This *discount* rate often is set as some percentage above the real (inflation-adjusted) value of the dollar—e.g., three, four, or five percentage points above the inflation rate.

In setting this rate, the investor must determine what return is needed to justify the investment, given the investment's risk and the investor's time frame for recouping the investment. The surer the investment, the lower the level at which the discount rate should be set.

Particularly in dealing with investments with long time horizons, small differences in the discount rate can have major differences in the calculation of the overall return-on-investment. The famous return-on-investment analysis conducted on the Perry Pre-School Program by High/Scope, for instance, used a discount rate of 3 percent in its calculations. Using that discount rate, High/Scope has estimated that its return-on-investment was over \$7 for every \$1 invested, when the financial impacts were tracked for 24 years and projected out for the lifetime of the individual, and a little over \$3 for every \$1 expended in taxpayer benefits when costs to victims of crime were excluded. In a re-analysis of the High/Scope study, the RAND Corporation excluded the costs to victims of crime and used a higher discount rate of 4 percent. They concluded that the return-on-investment was still strongly positive, but at the rate of \$2 returned for every \$1 invested, rather than more than \$3 for every \$1 expended. In other words, increasing the discount rate from 3 percent to 4 percent reduced the return-on-investment by more than one-third.

Most people have heard someone say that if Adam had invested one penny at 1 percent interest, he now would own the whole wealth of the world many times over. There is strong likelihood that as the subjects in the Perry Pre-School Program continue to be tracked into succeeding generations, the investments could continue to rise. While correcting for inflation and including a discount rate are designed to address this issue, estimates of benefits become increasingly prone to subjective judgments and speculations as they are extended into the more distant future.

It is important to note that a return-on-investment figure that is presented for one program or system cannot simply be compared with a return-on-investment figure presented for another program or system. It can be a useful tool for assessment and decision making, but it should not be considered as the sole means for determining program benefit. Even when it is used as a key element in decision making, the assumptions that went into constructing it should be evaluated very carefully.

**PAYBACK PERIODS.** Because of this, many investment analyses also consider investment payback periods—the length of time it takes to return the full initial investment. The shorter this payback period, the stronger the reason for making the investment.

A business may be considering a variety of investments to reduce its energy bills through conservation—a new and more efficient boiler, added insulation to its refrigeration equipment, installation of new windows, or erection of solar energy panels. It is likely to compare each of these in terms of how much energy savings it will produce compared with its initial costs and how soon the costs can be recovered in reduced energy bills. Some may have payback periods of three years or less, while others may have payback periods of five years or more. A few may even have a payback period of less than a year. (The latter are particularly attractive, as they can be financed within current annual operating expenditures.) Those with longer payback periods may still be



worth doing, but will likely show up farther down on the list of projects to complete. A business could even establish an energy account that would set aside savings from investments made in energy conservation realized from investments with shorter payback periods and use those savings to finance those with longer payback periods.

The energy conservation example is quite a straightforward one. Once a conservation improvement has been made, its impact on energy consumption and therefore on energy costs is likely to be fairly constant over a period of years (given variations in the weather actually experienced and the price of energy). In the business world, it sometimes is possible to make general assumptions regarding the constancy of such returns over time.

But in many instances, both in and out of the business world, this is not the case. The returns-on-investment may build over time, getting larger as a business continues to expand its market share. This is particularly true with prevention programs like the Perry Pre-School Project, where most of the economic gains occur in adulthood. The RAND Corporation also calculated the payback period for the Perry Pre-School Project, with the return of the initial investment taking nearly 20 years. While there were some savings to society in the adolescent years, in reduced school and college expenditures due to educational drop-out, the averted societal costs (in welfare expenditures, delinquency and crime, and reduced adult productivity and taxes) occurred only later in life. Unlike energy savings, the savings here did not accrue uniformly over time.

Again, it is important to examine payback periods as a factor in doing return-on-investment analyses, but it is not the only factor to be used in assessing different investments.

**METHODOLOGY VS. PERSUASION.** Many people make return-on-investment arguments to policy makers. In fact, the Perry Pre-School Project's return-on-invest-

ment analysis has been very influential in making the case for public investments in pre-school programs. It has been widely used to justify a number of state pre-school program investments and has been one of the anchor studies used by the Committee for Economic Development, a national business and education group, among others, to promote such investments. It has been influential in large part because its research was rigorous, the data it collected were credible, and the assumptions it made in developing its returns-on-investment were spelled out and defensible. In developing return-on-investment analyses or arguments, these elements need to be kept in mind.

However, state decision makers have become wary of return-on-investment analyses because they are often used quite loosely by advocates. It is common, for instance, for advocates promoting new state spending on roads or prisons to cite the number of jobs that spending will create and the multiplier effects that spending will have on the economy. It is just as common for advocates promoting tax cuts and reduced state spending to cite the benefits of keeping that money in the hands of citizens, the number of jobs the subsequent spending and investment will produce, and the multiplier effects these actions will have on the economy. In both cases, advocates may employ economic models to project the returns-on-investment from their proposals. Yet, one is based upon increasing state spending (investment) and the other on reducing it. Neither calculates the other side of the equation—what returns will accrue from the alternative use of the same dollar!

Again, return-on-investment modeling and analysis is an approach that can help decision makers better understand the potential of different alternative investments, but it can easily be misused if it is viewed solely as a marketing tool.

**RETURN-ON-INVESTMENT ANALYSIS AND COMPLEX PUBLIC SYSTEMS.** Many return-on-investment principles developed for businesses are applicable to similar analyses of complex public systems. In particular, dis-

count rates, payback periods, determinations of comparative investment risk, and general attention to methodological rigor all apply.

Yet there are additional challenges to strictly applying such modeling and analysis to complex public systems, where multiple factors are likely to influence desired outcomes (and their measurable societal costs and benefits) and these factors themselves may interact.

**Contextual Issues.** Improving parenting competence and confidence through an effective parenting education or home visiting program may have only a marginal improvement in a child's overall chance of success—if the child does not have access to enriched pre-school, attends school in a poor education system, does not have appropriate medication and care for his or her asthma, or lives in an unsafe neighborhood. Alternatively, simultaneously addressing all of those conditions may produce tremendous gains in the child's chances of very high achievement, but it also will be very difficult to untangle how much each of the changes in the child's environment contributed to that high achievement. There are likely to be interactive effects from multiple factors in the child's life. While businesses often have to deal with some interactive effects, they are much more pronounced in the complex human ecology of public programs and systems designed to build human capital.

**Systemic Analyses.** Some of the studies of the costs of failure, or costs associated with a particular issue in society—such as the analyses on school drop-out, alcoholism, child abuse and child poverty found in the annotated bibliography—make general calculations of how much society would save in subsequent costs by eliminating those problems. While these analyses are helpful in showing the magnitude and scope of the issue, their impacts cannot simply be summed up to say how much eliminating all these problems would impact society. Reducing child abuse also may improve school performance and reduce adult alcoholism, and these reduced costs may be included in the calculations of the costs of child abuse. At the same

time, reducing alcoholism or improving parental education also may reduce child abuse, and these reduced costs may be included in the calculations of the costs of alcoholism and school failure. In some instances, child abuse may be a causal factor in producing another condition, while in other instances it may be an outcome caused in part by that other condition. Statistically, disentangling the associations between highly interconnected events (multicollinearity)—let alone establishing cause and effect—is problematic and potentially subject to large errors.

**Programmatic Approaches.** It is easiest to adapt return-on-investment analysis to specific programs rather than to large systems of issues. Again, the Perry Pre-School Program is a good illustration of the effective application of return-on-investment analysis to a specific social program. The pre-school program showed positive returns-on-investment for the children it served in terms of reduced costs (associated with lower rates of adolescent parenting, school drop-out, welfare dependency, delinquency and criminal activity) and improved earnings, compared with the program's overall cost.

Like installing new, energy-efficient windows in a business, the program proved its worth with the children it served. At the same time, however, it did not put in a new boiler or solar panels or install additional insulation. The overall energy bill was reduced, but the overall savings were not necessarily optimized. Extending this analysis can highlight a number of important points regarding the use of return-on-investment analysis to both individual programs and larger systems.

Participants in the Perry Pre-School Program still had rates of adolescent parenting, school drop-out, welfare dependency and criminal activity that were much higher than those for the population as a whole. The program demonstrated it could reduce those risks by one-quarter to one-half, but could not address them fully. In the business analogy, installing energy-efficient windows reduced excess energy consumption

but did not eliminate it; other energy conservation measures would be needed to make the business truly energy efficient.

Moreover, the Perry Pre-School Program served a specific population—children identified with low I.Q.s and at least borderline mental retardation. In other words, the program was designed for windows, not for boiler replacements or insulation. Adding a triple or quadruple pane to the windows would be unlikely to further reduce energy consumption substantially, particularly compared with other energy conservation alternatives. The Perry Pre-School Program did not constitute a “silver bullet” that would address all issues leading to future adult success.

Even in this fairly straightforward program example, interactive and contextual effects apply. The gains from installing those windows will be impacted by whether some of the other conservation improvements are made. The new boiler would produce energy more efficiently, so the cost per unit of energy used would go down, reducing the value of the return-on-investment from the windows—not because the windows would reduce energy consumption any less, but because the overall costs for the energy consumed would be less. This example illustrates why the costs of failure from different systems cannot simply be added, but may be counting some of the same costs.

Alternatively, solar panels, after installation, might provide nearly free energy, thereby greatly diminishing, if not eliminating, the economic value of reducing energy consumption at all. If there were a large hole in the business’ roof, of course, putting in new windows would scarcely address the actual energy consumption. This illustrates the importance of contextual factors in examining returns-on-investment. Neither of these examples suggests that installing energy efficient windows is not often a very sound investment with a high rate of return, but they do indicate that the returns will be dependent upon the overall context. The Perry Pre-School Program

showed the impacts it did within a particular context; it could have different results if applied in a different context. If it is implemented in a high-rise housing project riddled with drugs and criminal activity and schools with long histories of poor performance, for instance, the program itself may be insufficient to produce sustained gains (i.e., there may be a hole in the roof, even though the windows are of high quality). Alternatively, of course, it may produce highly positive results, as it may prove to be one way to fix that hole in the ceiling. Without some field experience applying the program to such a neighborhood or to all children rather than just those with measured I.Q.s suggesting developmental delays, it is not possible to transfer its returns-on-investment to the new setting with any confidence they will occur.

A final analogy regarding using programmatic findings to develop policy is worth noting. The Perry Pre-School Program was a very high-quality early childhood program that involved a number of components, including enriched pre-school and home visiting and follow-up with parents, using a highly trained and dedicated staff and attendant curricula and materials. In today’s dollars, the cost per child for the Perry Pre-School Program would be over \$13,000 annually. In energy conservation terms, the program installed top-of-the-line, energy-efficient double-paned windows, using the best contractors available. There is no reason to believe that installing regular single-paned windows through lowest-bid contracting would reduce energy consumption or produce similar returns-on-investment. If one expects to achieve gains (in economic or other terms) similar to those that another program has achieved, there must be fidelity in program replication. A watered-down program will not simply get watered-down results (e.g., retain its return-on-investment rate, although the return is on a smaller amount invested); it may get no returns at all.

#### *Programmatic Efforts and the Fallacy of Composition.*

When an individual program can demonstrate a

strong return-on-investment, it means that as a business it has returned a strong profit. Businesses can increase their profits, however, through several means. They can expand the use of their product, reduce their internal costs of operation, or increase their market share. In the latter instance, the overall market may not grow, but the business may be successful in taking customers away from competing businesses.

In a stagnant economy, an effective program may be able to demonstrate its ability in getting its participants into jobs, but this may simply come at the expense of other individuals not getting those jobs. This has been referred to as the fallacy of composition. A successful effort to improve opportunities for a few people within society can simply displace others in those positions; the goal of social programs is rather to improve societal opportunities as a whole.

The goal is one reason for looking beyond a programmatic focus to a systemic one. A private business may be as satisfied with increasing its profits through increasing its market share as it is with expanding the size of the total market, but this is not the case for publicly-supported initiatives, which are designed to improve overall results through programmatic efforts. While programs are the vehicles through which many policies must be implemented, overall policy goals should be kept in mind as well as the individual program goals. It may not be possible to directly measure whether a program is simply getting its participants first in line for a particular benefit or building human capacity that produces an overall social benefit, but it is important to be cognizant of the difference and look at the program in that light.

The discussion above has raised a number of technical and conceptual issues about a very complex topic. Doing any analysis of the pros and cons of a particular public policy requires examination of interactive and contextual factors, and return-on-investment analyses are no different. Such analyses require that a variety of assumptions be made that can have a great deal of bearing on the final calculations.

Individuals involved in developing or using the analytic tools in this resource guide do not need to be experts in the nuances of return-on-investment modeling and analysis. They should, however, have some understanding of these underlying issues in order not to overstate or understate the value of such work. Important points to recognize from this discussion include the following:

- \* A return-on-investment calculation does not yield an absolute number that then can be simply compared with other return-on-investment calculations. Returns-on-investments are only one way to look at the cost-benefit of a particular strategy or program intervention.
- \* Returns-on-investments must be examined in context and their interactive factors must be explored. Potential savings from other budget areas cannot be transferred based upon calculations—they must be tracked and measured to ensure they are realized.
- \* Individual programs are very unlikely to be “silver bullets” that solve a complex social issue or concern, although they may contribute to that solution.
- \* When programs are put in place based upon research-based initiatives that have demonstrated positive returns, attention to fidelity of program replication is needed if there are to be realistic expectations that those gains will be reproduced. Ultimately, it is the program’s impact upon the system as a whole and not an individual program’s impact on its participants that needs to be assessed.



## Appendix Two: Annotated List of References and Resources

### I. General Overview of School Readiness and Lifelong Development Literature

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Substantial research on brain development and the importance of early childhood to lifelong development has emerged over the last several years. This research has implications for public policy. In addition, there has been substantial work to define “school readiness” and to develop indicators that can assess it. The following publications offer useful syntheses of the current research and thinking in the field.

Shonkoff, Jack, and Deborah Phillips (eds.). *From Neurons to Neighborhoods: The Science of Early Childhood Development* (National Research Council and Institute of Medicine, National Academy Press, Washington, D.C., 2000).

*Prepared under the direction of a national expert committee, this volume provides a comprehensive review of the brain development research and early childhood development literature, concluding with a variety of policy and practice recommendations for the field. It represents an excellent source document for the literature in this field.*

Zaslow, Martha, Julia Calkins, Tamara Halle, Jonathan Zaff and Nancy Margie. *Background for Community-Level Work on School Readiness: A Review of Definitions, Assessments, and Investment Strategies* (Child Trends Report to the Knight Foundation, Washington, D.C., 2000).

*This is a two-part report. The first part builds upon the work of the National Educational Goals Panel and describes in detail school readiness from three perspectives: the dimensions of school readiness in children, family and community supports that lead to a child's school readiness, and the readiness of schools for children. On the first perspective, it examines the five components of a child's readiness for school. The second part reviews the literature on the factors that contribute to school readiness across each of the three dimensions.*

### II. Studies Translating Poor Outcomes into Future Social Costs

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There have been a number of efforts to identify the range of long-term social costs associated with certain behaviors or conditions. These generally draw upon evidence of the relationship between a particular behavior or condition to subsequent outcomes and their costs. They have been used to make the case for developing strategies that can change the behaviors or conditions in order to gather public support for or attention to a particular issue. Most people have heard of studies that cite the costs of alcoholism or smoking to society in billions of dollars annually. Some of the studies that were used to construct Table Three are referenced below, along with a more general study that was used to construct Table Four.

#### COSTS OF DISEASES AND ILLNESSES

Centers for Disease Control and Prevention. *An Ounce of Prevention ... What Are the Returns? 2nd Edition* (United States Department of Health and Human Services, Washington, D.C., 1999).

*This volume outlines 19 strategies for preventing or addressing specific threats to health, providing very brief descriptions of the health impact of the disease, injury or disability; the effectiveness of known prevention strategies; the costs of the disease, injury, or disability; and the cost-effectiveness of the strategy. Included among the 19 strategies are sickle cell screening for newborns, childhood vaccinations for preventable diseases, WIC services to low-income pregnant women to avert low birthweight, fortification of the food supply with low-level folic acid for neural tube defects, and lead abatement to prevent childhood lead poisoning. The volume contains references to the cited research reports that make claims for specific returns-on-investment, including the medical costs of smoking and low birthweight.*

#### COSTS OF CHILD ABUSE

Gould, Marsha, and Tracey O'Brien. *Child Maltreatment in Colorado: The Value of Prevention and the Cost of Failure to Prevent* (Colorado Children's Trust Fund, Denver, Colorado, 1995).

*This study develops both direct and indirect cost estimates for child abuse and neglect. Direct costs include those related to investigating and treating abuse and neglect. Indirect costs include those related to outcomes to which abuse and neglect are known to be associated (violence, teen pregnancy, domestic violence, criminal behavior, substance abuse, mental illness, unemployment, welfare dependency, etc.). The study then suggests investments that could be made in home visiting services to prevent abuse and neglect, with projected impacts upon direct costs.*

#### **COSTS OF SCHOOL FAILURE**

National Governors Association. *School Readiness* (Washington, D.C., 1994).

*The National Governors Association commissioned the IBM Customer Business Development Division in Boulder, Colorado to model the potential additional tax revenues and reduced social spending resulting from improving high school graduation rates for at-risk youth from 46 percent to 65 percent and to 90 percent. The IBM team also modeled increased tax revenues from improved higher education attainment in Colorado and the economic impact of prisoner literacy training programs in terms of both increased tax revenues and reduced recidivism and social costs.*

#### **COSTS OF SUBSTANCE ABUSE AND ADDICTION**

National Center on Addiction and Substance Abuse. *Shoveling Up: The Impact of Substance Abuse on State Budgets* (Columbia University, New York, New York, 2001).

*This publication provides state-by-state estimates of the state budget costs of addiction, in terms of both health care and children and family services costs, across 16 categories of programs. It provides a very detailed analysis of spending and costs, estimating that states spent \$81.3 billion in 1998 dealing with the issue (13.1 percent of total state budgets), with 96 percent (\$78 billion) going to address the impacts of such abuse and addiction and only 4 percent going to prevent or treat it.*

#### **COSTS OF CHILD POVERTY**

Sherman, Arloc. *Poverty Matters: The Cost of Child*

*Poverty in America* (Children's Defense Fund, Washington, D.C., 1997).

*This report draws upon the work of Nobel Laureate economist Robert Solow and others in estimating the cost of child poverty in terms of lost educational achievement and the resulting decrease in economic productivity. On only this dimension (the report does not include costs associated with remediation or public protection spending), the report indicates a societal cost of \$130 billion annually.*

#### **COSTS ASSOCIATED WITH HIGH-RISK YOUTH**

Cohen, Mark, "The Monetary Value of Saving a High-Risk Youth," *Journal of Quantitative Criminology* Vol. 14 (1998), pp. 5-33.

*This article provides an econometric analysis of the value of saving a high-risk youth from three different paths: (1) becoming a career criminal, (2) becoming a heavy drug user, and (3) dropping out of school. It estimates that the costs for an individual, across all three areas, can be well in excess of a million dollars. It also presents a number of cautionary remarks regarding the direct use of such analysis in developing return-on-investment models for specific interventions.*

#### **COSTS ASSOCIATED WITH CHILDHOOD INJURIES**

Miller, Ted, Eduardo Romano and Rebecca Spicer, "The Cost of Childhood Unintentional Injuries and the Value of Prevention," *The Future of Children* Vol. 1, No. 10 (Spring/Summer 2000), pp. 137-162.

*This article presents data on the frequency, severity and costs of unintentional injuries during childhood, estimating that such injuries in 1996 produced \$14 billion in lifetime medical spending, \$1 billion in other resource costs, and \$66 billion in present and future work losses. The article describes a number of proven injury prevention strategies that have not been universally implemented that could produce substantial benefits and positive returns-on-investment.*

#### **COSTS OF CRIME**

Newman, Sanford, T. Berry Brazelton, Edward Zigler, Lawrence Sherman, William Bratton, Jerry Sanders,

and William Christeson. *America's Child Care Crisis: A Crime Prevention Tragedy* (Fight Crime: Invest in Kids, Washington, D.C., 2000).

*This report presents the case, from the perspective of the law enforcement community, for investing in quality child care services as a means to prevent later criminal activity. It draws from a body of longitudinal research on early childhood programs that have tracked participants and control groups to adulthood and identified any criminal activity that has occurred. The report is particularly notable for its survey of police chiefs, showing the depth of law enforcement's belief in investing in young children and their families as a crime prevention strategy. The national Fight Crime: Invest in Kids organization conducts public education and advocacy efforts at both the federal and state levels and is a resource for enlisting law enforcement in early childhood agendas.*

#### GENERAL DEMOGRAPHIC RELATIONSHIPS

Haveman, Robert, and Barbara Wolfe. *Succeeding Generations: On the Effects of Investments in Children* (Russell Sage Foundation, New York, New York, 1994).

*This book draws from two decades of longitudinal data to evaluate the impact of many background factors—including parent education, family structure, and neighborhood environment—to determine which are most strongly associated with child educational success, adolescent parenting and early adult employment. It concludes that parental education and neighborhood environment strongly correlate with child educational and social success.*

#### RESEARCH CONNECTING POOR OUTCOMES IN EARLY YEARS AND FUTURE SOCIAL COSTS

Child and Family Policy Center. *Investing in Families, Prevention, and School Readiness: A Framework Paper* (Des Moines, Iowa, 1993).

*This paper describes the research and evidence on the connection between poor outcomes in the early years (poor birth outcomes, insufficient nurturing in the early years, and inadequate developmental support) and future problems requiring social interventions and costs.*

### III. Development and Use of Data in Specific Locations

There is an excellent, very recent general overview of the use of data at various levels in order to inform early childhood policy. In addition, there are at least three examples of return-on-investment modeling efforts applied to specific poor neighborhoods experiencing high rates of poor child outcomes and their attendant social costs (including unemployment and welfare dependency, crime and delinquency, and social remediation expenditures in health and welfare). This approach recognizes the interrelationship among different factors that cause poor child outcomes and the opportunities across different social expenditures in addressing them.

Watson, Sara, Barbara Squires and Peter Schafer. *Think Global, Document Local: Using Data and Information Technologies to Move the Early Childhood Agenda* (Carnegie Corporation of New York/The Finance Project, 2000).

*This policy brief describes the use of data and information technologies by children's initiatives in specific localities and states across the nation, stretching from Rhode Island to Hawaii. Part I describes the difficult challenges involved in building capacity for data collection at the state, regional and local levels. Part II describes initiatives which have used data and information technologies to mobilize public support for improving early care and education. Part III illustrates the use of data and information technology to improve the planning and delivery of services. Part IV discusses issues that the early childhood field will face as it moves into the future.*

The Austin Project. *An Investment Plan for the Young: The Austin Project, First Phase* (Austin, Texas, 1992).

*Employing geo-mapping, the Austin Project distinguished between the intensity of problems faced in Austin's inner city areas and those faced in other parts of the community. It began to quantify the systemic benefits of reducing those problems, as well as suggested*

*the potential cost-effectiveness of investments in certain prevention programs.*

The Enterprise Foundation. *An Economic Model for the Transformation of Sandtown-Winchester: Discussion of Methodology and Supporting Data* (Baltimore, Maryland, 1996).

The Enterprise Foundation. *Neighborhood Transformation Investment Plan* (Baltimore, Maryland, 1996).

Downs, Anthony. *Observations on the Enterprise Foundation's Project in Baltimore's Sandtown-Winchester Area* (Memorandum to the Enterprise Foundation, n.d.).

*The residents in Sandtown-Winchester, with assistance from the Enterprise Foundation, are seeking to transform the entire neighborhood. As one aspect of this work, the Enterprise Foundation developed an assessment of the public costs incurred within Sandtown-Winchester, and a "business as usual" trend-line on these costs. It also identified the type of investments that could be made that would alter this trend-line, showing a positive overall return-on-investment through the year 2015.*

*Anthony Downs reviewed the methodology and provided a critique, accepting the use of "simple-minded quantification" as an appropriate tool for demonstrating the dimensions of the issue, while citing some of the limitations in applying internal rate-of-return analysis to complex public systems. He also raised issues related to the application of return-on-investment modeling to influence funding decisions.*

Bruner, Charles (with Stephen Scott and Martha Steketee). *Background Paper: Allegheny County Study: Potential Returns-on-Investment from a Comprehensive Family Center Approach in High-Risk Neighborhoods* (Child and Family Policy Center, Des Moines, Iowa, 1996).

Bruner, Charles (with Maria Townsend). *Investing in Family Centers: Opportunities for Positive Returns for Allegheny County. 2000 Update of 1996 Report* (Child and Family Policy Center, Des Moines, Iowa, 2000).

*These monographs employ geo-mapping to contrast the prevalence of "rotten outcomes" in Allegheny County's highest risk neighborhoods with the remainder of the county and then use these as proxies for public spending in six areas (AFDC, food stamps, Medicaid, child welfare, juvenile detention, and adult prisons). They describe the potential market for new investments as the amount of reduced public funding and increased tax revenues available if these neighborhoods were transformed to bear the characteristics present in the rest of Allegheny County. They do additional modeling with a specific investment strategy, family centers, to suggest that strategy's potential impact upon these outcomes and their social costs.*

#### *IV. Programmatic Early Childhood Return-on-Investment Analyses*

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An increasing number of early childhood programmatic interventions have been examined for their impacts upon children and families and the overall costs and benefits of these impacts. Some of these studies and syntheses of these studies' findings are provided below, as well as a Canadian modeling effort based upon this research.

Schweinhart, Lawrence, Helen Barnes and David Weikart. *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27* (High/Scope Educational Research Foundation, Ypsilanti, Michigan, 1993).

*This monograph is based upon a rigorous evaluation of a high-intensity early childhood education program in the early 1960s, with both a treatment and control group tracked over the next 20 years. The monograph projects a return-on-investment of approximately \$7 for every dollar invested. The majority of those savings are in reduced economic loss to victims of crime, as a result of lower crime rates among the treatment group. There are also savings in reduced welfare dependency and use of special education, and increased earnings and tax contributions. This research has been one of the most influential return-on-investment analyses in securing public investments. It has been widely cited in state and federal actions to develop and expand early childhood programs for disadvantaged children.*



Olds, David, et al., “Effects of Prenatal and Infancy Nurse Home Visitation on Government Spending,” *Medical Care* Vol. 31, No. 2 (February 1992), pp. 155–164.

*This is one of a number of research reports on the Elmira, New York, project to provide home visiting to high-risk families. It shows savings across AFDC, Medicaid, food stamps and child protection services that more than cover program costs. Olds has written and researched extensively on home visiting programs, including conducting a meta-analysis that shows mixed results for different programmatic efforts.*

Reynolds, Arthur, Judy Temple, Dylan Robertson and Emily Mann, “Long-Term Effects of an Early Childhood Intervention on Educational Achievement and Juvenile Arrest: A 15-Year Follow-Up of Low-Income Children in Public Schools,” *Journal of the American Medical Association* Vol. 285 (2001), pp. 2339–2346.

Reynolds, Arthur, Judy Temple, Dylan Robertson and Emily Mann. *Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Center Program: Executive Summary* ([www.waisman.wisc.edu/cls/cbaexecsum4](http://www.waisman.wisc.edu/cls/cbaexecsum4), June 2001).

*These articles describe the impacts of a broad-based alternative preschool program that was studied through a quasi-experimental design for children served in 1983 to 1986. The study followed these children and a cohort group through age 20. It found significant gains in high school completion and reduced juvenile arrest rates, child maltreatment rates, special education placement rates and grade retention rates. The return-on-investment study estimated a return to the general public of \$3.83 for every dollar invested, with savings to government of \$2.88 for every dollar invested.*

Karoly, Lynn, Peter Greenwood, Susan Everingham, Jill Hoube, Rebecca Kilbrun, Peter Rydell, Matthew Sanders and James Chiesa. *Investing in Our Children: What We Know and Don't Know About the Costs and*

*Benefits of Early Childhood Interventions* (RAND Corporation, Santa Monica, California, 1998).

*This book provides a detailed summary and synthesis of the literature on a variety of early intervention programs and their benefits, including the Perry Pre-School Program, the Elmira Nurse Home Visiting Program, and the Chicago Child-Parent Center program. It reanalyzes the data from both Perry and Elmira to confirm significant returns-on-investment for those programs when targeted to high-risk children, and concludes with an overall assessment of the knowledge base that cites needs for additional research and experimentation.*

Barnett, Steven, “Long-Term Effects of Early Childhood Programs on Cognitive and School Outcomes,” in *The Future of Children* Vol. 3, No. 3 (Winter 1995). This issue of *The Future of Children* is devoted to “Long-Term Outcomes of Early Childhood Programs,” pp. 25–51.

*This article reviews a variety of research studies on the effects of early childhood programs on the development of children from low-income families, focusing on cognitive and school outcomes. It includes a discussion of the costs, benefits, and financing of such programs, suggesting the scale at which investments may need to be made to fully realize benefits for vulnerable children.*

Huntington, Jane, and Fred Connell, “For Every Dollar Spent—The Cost Savings Argument for Prenatal Care,” *The New England Journal of Medicine* Vol. 331, No. 19 (November 1, 1994), pp. 1303–1307.

*This article reviews the literature on prenatal care and finds no evidence that initiatives to increase prenatal care show immediate savings by averting \$3 in neonatal expenditures for every \$1 invested, although they may show other benefits. The much-cited figure of \$3.38 saved for every dollar invested in prenatal care, drawn from a 1985 simulation by the Institute of Medicine, has become the rationale for many of the expansions of health care coverage for low-income pregnant women. The article calls into question simplistic applications of return-on-investment modeling to programmatic interventions.*

Select Committee on Children, Youth, and Families. *Opportunities for Success: Cost-Effective Programs for Children Update, 1990* (United States Government Printing Office, Washington, D.C., 1990).

*This report describes a number of programs in health, nutrition and education and draws upon the research and evaluation literature to argue that each is cost-effective. The dissenting views call into question the conclusions of the report. The report is a good illustration of how claims of cost-effectiveness can extend well beyond the evaluation and research base.*

Cleveland, Gordon, and Michael Krashinsky. *The Benefits and Costs of Good Child Care: The Economic Rationale for Public Investment in Young Children—A Policy Study* (University of Toronto at Scarborough, 1998).

*This monograph draws upon economic theory and extant early childhood research to explore economic arguments concerning the investment of public funds in the care of young children. Through economic modeling, the monograph concludes that there are positive returns from government subsidization of high quality care (valued at \$8,500 per year for full-time care) when these costs are compared with the benefits of improved child development and its public long-term economic benefit, as well as better attachment of parents (primarily mothers) to the work force and the economic benefit from that.*

Gomby, Deanna, et al., “Financing Child Care: Analysis and Recommendations,” in *The Future of Children*, Vol. 6, No. 2 (Summer/Fall 1996). This issue of *The Future of Children* is devoted to “Financing Child Care,” pp. 5–25.

*This article introduces other research studies in the volume and references reports regarding both the costs of providing quality child care and the current financing gap (\$80 billion) in child care. While it does not include cost-benefit information, the volume does provide a good introduction to financing issues as they relate to providing quality child care.*

## V. Conceptual Approaches and Guides to Investment-Based Budgeting

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There have been a number of different efforts to promote return-on-investment modeling or “cost of failure” analysis as a way to re-orient the manner in which state and local governments analyze expenditures for children and families. The following publications present conceptual models or guides to conducting such analyses.

The Conservation Company and the Juvenile Law Center. *Building Bridges: Strategic Planning and Alternative Financing for Systems Reform* (Philadelphia, Pennsylvania, 1994).

*This monograph offers a conceptual model for financing systems conversions that move from less to more cost-effective service strategies, exploring several options (such as public debt, internal “loan” funds and special purpose authorities) as a means of financing transition costs. It examines two conversions, one in the public sector (the juvenile detention facility in Broward County, Florida) and one in the private sector (the Saturn Project).*

Bruner, Charles (with Stephen Scott). *Investment-Based Budgeting: The Principles in Converting from a Remediation/Response to a Prevention/Investment Budget* (Child and Family Policy Center, Des Moines, Iowa, 1994).

*This monograph describes the rationale needed to convert from a remediation/response to a prevention/investment budgeting approach in state government and the challenges to financing the conversion costs. It constructs a payback curve for the Perry Pre-School Program that shows the relatively long time horizon needed to recapture initial investments when the focus is on prevention programs in the early years of life. The findings have implications for scaling up investments in prevention from savings accrued from initial investments.*

Center for Assessment and Policy Development, “Appendix 7: A Primer on Analyzing and Publicizing the Cost of Failure,” in *The Children’s Initiative Strategic*

*Planning Guide* (Bala Cynwyd, Pennsylvania, 1992).

*The appendix provides guidance to states that were involved in the Pew Charitable Trusts' Children's Initiative on how to (1) define the cost (current public costs) of "rotten outcomes" for children, (2) think about different audiences for that analysis, (3) develop a portfolio of materials related to the cost of failure, and (4) publicize results. It represents an early effort to incorporate return-on-investment analysis into initiative design and thinking.*

Brizius, Jack, and the Design Team. *Deciding for Investment: Getting Returns on Tax Dollars* (Alliance for Redesigning Government and National Academy of Public Administration, Washington, D.C., 1994).

*Written as a workbook, this publication provides a very linear approach to using outcomes and social costs to make decisions on investment strategies and to move to financial decision making based upon comparative investment values, assuming that such calculations exist or can be made.*

Karoly, Lynn, Rebecca Kilburn, J.H. Bigelow, Jonathan Caulkins, Jill Cannon and James Chiesa. *Assessing Costs and Benefits in Early Childhood Intervention Programs: Overview and Application to the Starting Early Starting Smart Program* (RAND Corporation, Santa Monica, California, 2001).

*This publication, which includes a separately published executive summary, sets out a conceptual framework for assessing a specific program's costs and benefits and then provides additional information on applying that framework to early childhood programs.*

Schorr, Lisbeth, Mark Greenberg, Michael Little, Heather Weiss, Cynthia Guy, and Charles Bruner. *Funding What Works: Exploring the Role of Evidence in Government Decision-Making*. (National Center for Service Integration and Center for Schools and Communities, Des Moines, Iowa, 2002).

*This resource brief explores how policy makers can use research on effective programs and service strategies in*

*making funding decisions. Particular emphasis is placed on the role of building that knowledge base through multiple approaches to research, including but not limited to randomized clinical trials.*

Bruner, Charles (with Stephen Scott). *Thoughts on Statistical and Substantive Significance: Are We Selling Limited Programmatic Efforts Short?* (Child and Family Policy Center and National Center for Service Integration, Des Moines, Iowa, 1994).

*This occasional paper provides an approach for assessing desired program impacts that can be employed by small-scale programs. It poses ways that these impacts can be connected to longer-term outcomes through modeling that can suggest their possible returns-on-investment.*

## VI. Business Plan Approaches to Planning and Implementation

Business plan approaches generally distinguish themselves from traditional funding proposals by placing a much stronger emphasis upon: (1) identification of specific markets where opportunities exist (rather than statements of need that may be detached from actual proposals); (2) product specifications that are connected to capturing those markets; and (3) implementation strategies that recognize the dynamic nature of implementation, the importance of personnel in that implementation, and the need for continuous review of implementation according to a set of benchmarks and milestones. The materials below provide The Finance Project's and Rensselaerville Institute's conceptual models and the application of business plan models in Allegheny County, Pennsylvania, and Polk County, Iowa.

The Finance Project, *Sustainability Planning Workbook*, forthcoming 2002.

*This workbook is intended to help program developers and community leaders 1) identify basic issues in sustaining promising initiatives; 2) address the strategic details; and 3) develop a comprehensive plan for how to do it. A wide range of programs and initiatives can use it — from broad-*

based system reform efforts to single-site direct service programs. The workbook is organized into five modules: Module 1 presents a framework for thinking about sustainability and a “taking stock” process that includes a self-assessment. Module 2 utilizes a logic model process in order to assist users in identifying what they want to sustain and what they mean by sustainability, based on the needs of their community. Module 3 walks users through the process of developing a financing plan. Module 4 helps users analyze their strengths and weaknesses, in the context of their external environment, to identify the range of strategies necessary to work toward sustainability. Module 5 helps users effectively present information about their initiative in a clear and compelling way.

The Finance Project, *Sustaining Comprehensive Community Initiatives: Key Elements for Success*, April 2002.

This strategy brief draws on concepts developed for The Finance Project’s sustainability self-assessment tools, sustainability workbook and other materials to succinctly present and discuss each of the eight elements of The Finance Project’s sustainability framework. The eight elements are: vision, a results orientation, a strategic financing orientation, adaptability to changing conditions, a broad base of community support, key champions, strong internal systems, and a sustainability plan. The brief also illustrates each of the sustainability elements with appropriate examples.

Williams, Harold, Arthur Webb and William Phillips. *Outcome Funding: A New Approach to Targeted Grantmaking*, 2nd Edition (The Renselaerville Institute, Renselaerville, New York, New York).

This publication challenges the value of traditional proposals and budgets in the public sector and poses a new model that draws upon a more business-oriented approach to investing. It includes a special chapter on funding innovation, with a strong emphasis on recognizing the dynamic nature of product or strategy development, the need to invest in people as well as products, and the need for continuous review and adaptation as implementation proceeds.

ECI Business Plan Committee. *ECI Business Plan: A More Effective Approach to Improve the Achievement Outcomes for “At-Risk” Children* (United Way of Allegheny County, Pennsylvania, 1996). — *The Early Childhood Initiative: Investing in Lifelong Success*. (United Way of Allegheny County, Pennsylvania, presentation packet, n.d.).

Developed as a special project by the United Way of Allegheny County with support from the Heinz Endowments, the Early Childhood Initiative (ECI) Business Plan was prepared by a committee of business and community leaders, with actuarial analysis by Ernst and Young and consulting assistance from McKinsey and Company. The business plan included a five-year plan calling for \$60 million in private investments over that period, eventually to be replaced by public-sector funding based upon returns-on-investment. Investments were designed to provide high quality child care and early education programs in up to 80 targeted communities in Allegheny County, reaching up to 7,800 new children. Over \$20 million in funding has been invested in the plan over the last five years. The RAND Corporation is completing an assessment of the implementation experiences of the ECI, and the Office of Child Development of the University of Pittsburgh is issuing a report on the impact of the programs financed by the Initiative upon the children served.

Bruner, Charles. *Polk County Early Childhood Business Case* (Child and Family Policy Center Report to the Human Services Planning Alliance of United Way of Central Iowa, Des Moines, Iowa, 2000).

This monograph examines investments in early childhood services and assesses the status of meeting the needs of Polk County’s youngest children across each of the four areas of universal need, in order to identify the market for early childhood investments and the investment gaps. It assesses possible returns-on-investment, based upon available research, and identifies the current level of spending on remediation, maintenance and public protection services that could be positively impacted by successful investments. It then sets out the next steps for turning the business case into a business



*plan through developing an implementation schedule. The accounting firm of McGladrey and Pullen verified the data and overall conceptual approach. The Polk County Early Childhood Business Case drew upon the ECI Business Plan approach but extended beyond it to cover issues of health, nutrition and parenting education and family support as well as early childhood care and education.*

**Appendix Three:***Explanatory Material for Selected Figures*

This appendix provides detailed information on the derivation of two of the figures provided in the text and the assumptions and calculations made in assigning public expenditures to different categories.

**IOWA DATA FOR FIGURE THREE ON RELATIVE EXPENDITURES ON PREVENTION, MAINTENANCE, REMEDIATION, AND PUBLIC PROTECTION**

PUBLIC SPENDING PRIORITIES BASED UPON EXPENDITURE ESTIMATES FOR STATE FISCAL YEAR 1992

ITEM	FEDERAL	STATE	COUNTY	TOTAL
<b>PREVENTION/EARLY INTERVENTION SERVICES</b>				
<b>HEALTH AND NUTRITION</b>				
Extension Service Family Support Workers	\$1,800,000			\$1,800,000
WIC Nutritional Counseling	3,118,832			3,118,832
Medicaid Enhanced Care Coordination	4,429,352	2,380,845		6,810,197
Medicaid EPSDT	359,445	193,207		552,652
Maternal and Child Health Block Grant	1,698,479			1,698,479
Community Health Centers	1,771,800	447,000		2,218,800
Substance Abuse Prevention	1,667,655	1,030,887	2,073,411	4,771,953
Healthy Families (1993 figures)		335,000		335,000
Infant Mortality Projects		165,000		165,000
<b>EDUCATION</b>				
Head Start	16,484,282			16,484,282
Public Law 99-457 Part H	723,000			723,000
Drug Free Schools/Education	4,065,615			4,065,615
Innovative Grants for At-Risk Youths		10,700,000		10,700,000
<b>HUMAN SERVICES</b>				
FaDSS	507,040	417,960		925,000
Child Abuse Prevention Grants	188,000	550,686		738,686
Adolescent Pregnancy Prevention Grants		670,000		670,000
Family-Centered Services		3,000,000		3,000,000
Juvenile Justice and Delinquency Prevention Grants	419,735			419,735
Community Services Block Grant	986,520			986,520
Family Support Subsidy		648,877		648,877
Mental Health Education/Consultation			1,284,606	1,284,606
Mental Retardation Diagnosis and Evaluation			36,297	36,297
Developmental Disabilities Diagnosis and Evaluation		52,871	20,945	73,816
<b>SUBTOTAL</b>	<b>39,285,104</b>	<b>20,592,333</b>	<b>3,415,259</b>	<b>63,292,696</b>

*Continued on Next Page*

**FIGURE THREE DATA: CONTINUED**

<b>ITEM</b>	<b>FEDERAL</b>	<b>STATE</b>	<b>COUNTY</b>	<b>TOTAL</b>
<b>CORE EDUCATIONAL SERVICES</b>				
K-12 Education/Foundation		980,098,541	903,230,654	1,883,329,195
Educational Excellence		91,179,251		91,179,251
Private School Textbooks		575,373		575,373
Chapter 2	5,232,596			5,232,596
<b>SUBTOTAL</b>	<b>5,232,596</b>	<b>1,070,853,165</b>	<b>903,230,654</b>	<b>1,980,316,415</b>
<b>MAINTENANCE AND BASIC NEEDS PROGRAMS</b>				
<b>HEALTH AND NUTRITION</b>				
Medicaid—Under 65	399,868,023	215,090,499		614,958,522
Indigent Care		27,173,929		27,173,929
Food Stamps	143,337,591			143,337,591
WIC Program	27,283,807			27,283,807
Maternal and Child Health Block Grant	5,095,438			5,095,438
Community Health Centers	3,196,047			3,196,047
<b>HUMAN SERVICES</b>				
AFDC Payments	87,633,805	44,577,574		132,211,379
Emergency Assistance	849,226	853,325		1,702,551
County Relief			11,160,281	11,160,281
Day Care Block Grant	7,754,522			7,754,522
Transitional Child Care		314,125		314,125
General Administration and Field Operations	19,200,710	21,290,223		40,490,933
<b>SUBTOTAL</b>	<b>694,219,169</b>	<b>309,299,675</b>	<b>11,160,281</b>	<b>1,014,679,125</b>
<b>COMPENSATORY, REMEDIATION AND REHABILITATION PROGRAMS</b>				
<b>EDUCATION</b>				
Chapter 1	44,738,270			44,738,270
Public Law 99-457 Section 619	3,800,000			3,800,000
Vocational Rehabilitation	15,736,549	3,361,735		19,098,284
Special Education	24,000,000	167,200,000	44,500,000	235,700,000
Area Education Agencies		113,737,902		113,737,902
<b>HUMAN SERVICES</b>				
Child Protection/System Improvements		1,074,953		1,074,953
State Supplemental Assistance	21,792,817	18,522,933		40,315,750
State Assistance to Counties for MH/MR/DD		11,810,333		11,810,333
State Cases/Local Purchases		4,451,978		4,451,978
Mental Health Institutes	2,188,607	16,942,045	17,274,635	36,405,287
Mental Health Services			50,031,636	50,031,636
State Hospital Schools	48,550,629	900,071	21,469,170	70,919,870

*Continued on Next Page*



**FIGURE THREE DATA: CONTINUED**

<b>ITEM</b>	<b>FEDERAL</b>	<b>STATE</b>	<b>COUNTY</b>	<b>TOTAL</b>
<b>HUMAN SERVICES (CONTINUED)</b>				
ICF/MRs	33,139,368		26,604,004	59,743,372
Mental Retardation Services			69,493,916	69,493,916
CSAP Treatment Funds	7,387,452	7,886,826	2,659,571	17,933,849
Promise Jobs	6,113,195	4,068,808		10,182,003
Developmental Disabilities Services			6,537,159	6,537,159
Services for Handicapped Children			121,915	121,915
Social Services Block Grant	31,900,000			31,900,000
Community Services Block Grant	2,959,558			2,959,558
General Administration and Field Operations	19,200,710	21,290,223		40,490,933
Foster Care (IV-E)	11,100,000	59,890,069		70,990,069
Home-Based Services (IV-B)	3,364,000	15,938,838		19,302,838
Adoption Services	2,704,000			2,704,000
PMICs	7,606,488	4,162,796		11,769,284
Toledo Juvenile Home		4,381,976		4,381,976
Court-Ordered Services		3,599,687		3,599,687
Juvenile Court Referee			661,176	661,176
Juvenile Court Appointed Attorney			4,259,012	4,259,012
<b>SUBTOTAL</b>	<b>286,281,643</b>	<b>459,221,173</b>	<b>243,612,194</b>	<b>989,115,010</b>
<b>SOCIAL CONTROL AND PUBLIC PROTECTION PROGRAMS</b>				
<b>JUVENILE JUSTICE</b>				
Eldora Training School		7,507,768		7,507,768
Juvenile Probation			940,150	940,150
Corrections Education		2,032,985		2,032,985
Indigent Defense of Juveniles		3,626,887		3,626,887
Youth Guidance		1,909,500	6,643,711	8,553,211
<b>ADULT CORRECTIONS</b>				
Adult Correctional Institutions		77,090,926	28,341,865	105,432,791
Adult Detention Services			1,441,938	1,441,938
Public Defender Services		6,500,000		6,500,000
Community Corrections		31,993,636		31,993,636
<b>SUBTOTAL</b>	<b>0</b>	<b>130,661,702</b>	<b>37,367,664</b>	<b>168,029,366</b>
<b>TOTAL</b>	<b>1,025,018,512</b>	<b>1,991,628,048</b>	<b>1,198,786,052</b>	<b>4,215,432,612</b>



## Notes:

**SCHOOL FOUNDATION AID:** The \$903,230,654 is the total statewide school levy minus the \$44,500,000 DOE identified as being used for additional services for children with disabilities. The total statewide school levy is \$947,730,654 before the application of any property tax credits, according to DOM.

**SPECIAL EDUCATION LOCAL COST:** This is the “excess funding for instructional purposes for children with disabilities” according to DOE’s special education consultant.

**MATERNAL AND CHILD HEALTH CARE BLOCK GRANT AND COMMUNITY HEALTH CENTERS:** (25% Prevention and 75% Basic Needs Programs). Most services are for basic medical coverage rather than for developmental support. Most participants seek such medical care because they do not have the resources to purchase health services.

**COMMUNITY SERVICES BLOCK GRANT:** (25% Prevention and 75% Remediation). Most funding under this block grant supports organizations that offer income support or other services for low income families, but community action agencies increasingly are doing more preventive developmental work.

**WOMEN, INFANTS AND CHILDREN PROGRAM:** (50% Prevention and 50% Basic Needs Programs).

**FAMILY-CENTERED PROGRAM:** (15% Prevention and 85% Remediation). Primarily used for families already experiencing serious child abuse and neglect concerns, but sometimes used to intervene earlier. For this reason, a proportion is put into prevention.

**YOUTH GUIDANCE:** The state’s \$1,909,500 is the state share of costs for juvenile detention. The county’s \$6,643,711 includes county costs at Toledo, county juvenile detention, and county shelter care costs.

**STATE SUPPLEMENTAL ASSISTANCE (SSA):** State and federal expenditures are based upon the following calculations with information provided by DHS. Total number of SSA bed days for FY 1992 is 1,680,248. The state cost per bed day is \$6.61. The client cost per bed day is \$12.97. (This is primarily the client’s social security and SSI minus the personal needs allowance. There is an insignificant part of this cost that comes from individual client trust funds.) The state and federal costs in the table result from multiplying the cost per bed day by the number of bed days for FY 1992.

**STATE CASES/LOCAL PURCHASES:** This can be considered as the state’s supplementation of the Social Services Block Grant.

**MHI COUNTY COSTS:** This number comes from the counties’ report to DHS on MH/MR/DD/BI. Task Force shows an FY 1992 county expenditure of \$24,458,012. The LFB data comes from the audited reports of the MHIs and, among other items, includes county payments for substance abuse at the MHI’s.

**GENERAL ADMINISTRATION AND FIELD OPERATIONS** (50% Basic Needs Programs and 50% Remediation). State administration of programs involves a variety of activities; half involve remediation.

**OTHER COMMUNITY-BASED SERVICES:** This is based upon the following calculations: Total Community-Based Services Expenditure for FY 1992 was \$3,822,587 according to LFB. The appropriations bill HF 479 earmarked \$670,000 for Adolescent Pregnancy Prevention Grants, and \$550,686 for Child Abuse Prevention Grants. The \$2,601,901 is what remains after these earmarked funds are subtracted.

**FIGURE FIVE: DATA FOR IOWA COMPARATIVE INVESTMENTS, BY AGE OF CHILD**

FY2001 Funding in Iowa for Education and Development— By Child/Student Age

PROGRAM	STATE FUNDING	FEDERAL FUNDING	TOTAL FUNDING
<b>Funding for Children 0-5 and Families<sup>1</sup></b>			
Community Empowerment	\$ 15,600,000		
Family Resource Centers	90,000		
Early Childhood Network	275,000		
At-Risk Birth to 3 Programs	839,400		
HOPES, Healthy Families	762,000		
ESEA Title I—Even Start		\$ 1,314,045	
Special Ed.—Inf. & Toddlers		3,446,438	
Special Ed.—Grants <sup>2</sup>		7,038,394	
Shared Visions	7,600,000		
Head Start		40,714,000	
Title One Grants <sup>3</sup>		2,771,090	
Child Care Subsidies <sup>4</sup>	5,050,752	49,359,438	
Total Funding	30,217,152	108,720,413	\$ 138,937,565
Funding Per Child <sup>5</sup>	126.39	454.78	581.17
<b>Funding for Children 6-17<sup>6</sup></b>			
Foundation Aid <sup>7</sup>	2,652,600,000		
Educational Excellence	80,891,336		
Alternative Schools	10,000,000		
Early Intervention	20,000,000		
Innovative Strategies	3,838,433		
Class Size Reduction	12,781,129		
Title I Grants <sup>8</sup>		52,650,705	
Special Education Grants <sup>9</sup>		63,345,544	
Total Funding	2,780,110,898	115,996,249	2,896,107,147
Funding Per Child <sup>10</sup>	5,621.21	298.15	5,919.36
<b>Funding for Young Adults 18-23<sup>11</sup></b>			
College Student Aid Com.	58,817,659		
Community College Alloc.	147,577,403		
Regents Alloc.	549,021,903		
Pell Grants		101,400,000	
Suppl. Ed. Opp. Grants		8,825,349	
Work-Study		13,440,777	
JTPA Title II-C		447,724	
Workforce Inv. Act		3,259,735	
Total Funding	755,416,965	127,403,377	882,820,342
Funding Per Young Adult <sup>12</sup>	\$ 3,129.82	\$ 527.85	\$ 3,657.67

**TABLE NOTES**

1. Funding includes support for three types of activities, with a break between each type: (1) a variety of home visiting, parenting education, and other programs designed to improve parenting confidence and competence and identify and address specific child needs, (2) enriched pre-school programs, primarily for disadvantaged children, and (3) child care subsidies for low income parents. All of this funding is designed to address the developmental needs of pre-school children.

2. Based upon an estimate that 10% of total special education grants from the federal government are used to serve pre-school children.

3. Based upon an estimate that 5% of total Title I grants to school districts are used to provide pre-school programs and other developmental services to pre-school children.

4. Includes state appropriation for subsidized child care and federal CCDF funds and transferred TANF funds providing child care.

5. Derived by dividing the dollar amount by the number of children 0-5 in Iowa according to the 2000 census: 239,064 children.

6. Includes funding spent on K-12 education only. Some employment and training, community college, and youth and recreational programs also could be included as developmental supports.

7. Includes both state and local funding that goes into the core K-12 educational system.

8. Based on an estimate that 95% of Title I grants are used for school-aged children.

9. Based on an estimate that 90% of special education grants to districts are used for school-aged children.

10. Derived by dividing the dollar amount by the number of children 6-17 in Iowa according to the 2000 census: 494,575 children.

11. Includes funding for college and community college education and some employment and training dollars. For each, an estimate is made of the total funding that serves young adults 18-23 compared with that which serves older students or individuals or is used for purposes other than classroom education. Except as noted, the figure used is 70%.

12. Derived by dividing the dollar amount by the number of young adults 18-23 in Iowa according to the 2000 census: 241,361 young adults.

## The Finance Project Resources on Early Childhood

*Partnering with Schools: Blending Funding for Early Learning Initiatives*, by Margaret Flynn and Cheryl D. Hayes (forthcoming Fall 2002)

*Sustaining Comprehensive Community Initiatives: Key Elements for Success* (April 2002)

*Thinking Broadly: Financing Strategies for Comprehensive Child and Family Initiatives*, by Cheryl D. Hayes (April 2002)

*Making Space for Children: A Toolkit for Starting a Child Care Facilities Fund*, by Amy Kershaw (October 2000)

*Federal Funding for Early Childhood Supports and Services: A Guide to Sources and Strategies*, by Hansine Fisher with Carol Cohen and Margaret Flynn (June 2000)

*Financing Family Resource Centers: A Guide to Funding Sources and Strategies*, by Sara Watson and Miriam Westheimer (April 2000)

*Voices of Experience: A Catalogue of Resources from the Starting Points Sites* (October 2000)

*Think Global, Document Local: Using Data and Information Technology to Advance the Early Childhood Agenda*, by Sara Watson (May 2000)

*Creating Dedicated Local Revenue Sources for Early Care and Education Initiatives*, by Barbara Hanson Langford (April 2000)

*State Early Care and Education Initiatives*, by Michelle Jones (March 2002)

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