

# Potential Monetary Value of Responsible Fatherhood Program Outcomes for Fathers and Children

A Framework for Monetizing the Future Stream  
of Two-generation Benefits and Avoided Cost

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## Introduction

For more than a decade, Responsible Fatherhood programs, funded by the Administration for Children and Families, have served low-income, primarily non-resident fathers to enhance their employment, parenting abilities, and healthy co-parenting relationships so that they can contribute to their children's financial and emotional well-being and be positively involved with their children (Osborne, Dillon, Craver, & Hovey, 2016).

Responsible Fatherhood programs typically provide services in three areas: parenting skills development, healthy relationships, and employment/economic stability development. In addition, a small number may also have connections with early learning programs that enhance child development and literacy skills.

Responsible Fatherhood programs have typically measured their success based on child support payments compliance. Financial stability is evidenced by improved employment and wage rates, number of hours worked, job retention rates, improved educational attainment, volunteerism, and lower criminal conviction rates. Indicators of parental responsibility and engagement include compliance with child support payments and improved parenting skills.

This report shows how to monetize the economic returns and avoided costs of these typical outcomes plus additional, potential, two-generation, long-term child development and family well-being outcomes of father engagement. Its goal is to be a catalyst for fatherhood researchers and programs to make an economic case to policymakers about the monetary value of investing in Responsible Fatherhood programs and broader father engagement.

### Report purposes, methods, and assumptions

This report provides and applies a framework for estimating the potential monetary value of non-resident father engagement, which broadly includes participating in Responsible Fatherhood programs, performing positive parenting behaviors and interactions with their children in activities that promote healthy child development, and enrolling their children in high quality early childhood education.<sup>1</sup>

It builds on models and methods used in studies completed by Wilder Research of Goodwill-Easter Seals FATHER (Diaz & Chase, 2010) and of the monetary value of investing in early childhood education and development in Illinois, Michigan, Minnesota, Ohio, and Vermont (Chase, Anton, Diaz, & Rausch, 2009; Chase & Diaz, 2015; Chase, Diaz, & Valorose, 2011; Diaz, 2017; Diaz & Chase, 2016; Pina, Diaz, & Chase, 2013).

Its model is similar to the cost-benefit model from the Washington State Institute for Public Policy (Washington State Institute for Public Policy, 2018) and the model for estimating the annual, aggregate costs of childhood poverty (McLaughlin & Rank, 2018).

We estimate the expected monetary value of the benefits of non-resident father engagement with their children based on a model of the value of the stream of expected future benefits for and from low-income families. The model draws from a body of research on fathers, responsible fatherhood and parenting programs, and high-quality early childhood education programs. We include the early childhood education research because most of the data available on the monetization of many relevant child outcomes have only been calculated for children who benefited from high quality early childhood education.

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<sup>1</sup>Throughout this report, the impacts of fatherhood, parenting, and early education or early learning programs assume the programs are high-quality.



This study is based on several assumptions and research findings about the potential benefits of participating in Responsible Fatherhood programs for fathers and their children as follows:

- Responsible Fatherhood program participation **potentially improves education, employment, and wage rates of fathers**, which is associated with increased lifetime employment, earnings, child support payments, and tax revenues and avoided or reduced costs of unemployment, welfare, food assistance, and arrests.
- Responsible Fatherhood program participation also **potentially enhances positive father involvement in the lives of their children**, which, in turn, improves their children's social-emotional and cognitive competence and academic achievement, which is associated with reduced special education and improved high school completion rates.
- When combined with high-quality early education for children, which is also associated with reduced special education and improved high school completion rates, the links **potentially lead to increased lifetime earnings for children, which is linked with reduced costs of welfare, crime, substance abuse, and health care.**

Sources of data include actual outcomes reported in evaluations of Responsible Fatherhood programs, including details from the Goodwill-Easter Seals FATHER evaluation (Diaz & Chase, 2010); expenditure and incidence data from state agencies of education, health, and human services; and graduation rates, poverty rates, crime rates, and other demographic data from the U.S. Census American Community Survey. These data pertain to Minnesota and other states where noted.

The impact parameters or effect sizes used to compute the estimated monetary values of benefits and savings or avoided costs are drawn from the published research on changes in various outcomes associated with high-quality early education, father involvement, and parenting programs. For example, early education participants are 31% more likely to graduate from high school than a comparable group of non-participating children. The specific sources for each computation and parameter are noted throughout the report. Only potential benefits and cost savings with sufficient supporting evidence are included in this report.

We combine the impact parameters identified in the research with data on the incidence rate of each outcome and demographic characteristics to estimate the actual or potential impact on the selected outcomes. For example, the average impact of early education on high school graduation is applied to Minnesota's average high school graduation rate for low-income students to determine the increased likelihood of graduation associated with receiving early education. All monetary values are per-person estimates associated with the change in outcomes among low-income children and adults.

The published research on father involvement and parenting programs shows some, but not all, of the potential child outcomes that have monetary value. Accordingly, to provide an estimate of the potential full benefits of Responsible Fatherhood programs per child,



we must first estimate the per-child monetary values on the full array of early education program outcomes and then apply the effect sizes for father involvement and parenting programs.

A dollar today is worth more than a dollar in the future. Accordingly, studies that look at benefits and savings that potentially are generated and accrue in the future commonly discount those monetary values of benefits and savings in future years to present values to reflect that time value of money. We report the monetary values as present values discounted at a rate of 3%, which is the standard currently used for a discount rate in similar studies.

The estimated value of each potential outcome of Responsible Fatherhood programs is independent and applies to only fathers who could reasonably achieve the outcome through successful participation, such as fathers who enter a program with no high school diploma, or with no job, or not paying child support. Accordingly, the values for each outcome do not automatically add up to the total estimated value of all potential outcomes and could only reach the total level depending on the extent to which each father achieves each outcome.

### Study limitations

While this study calculates the present values of current benefits and savings in future years to account for the time value of money, this study does not account for any potential changes in the incidence rate of each outcome and dollar value of social benefits over time. However, high school graduation rates and incarceration rates, for example, may improve or decline over time, thus changing the percentage of fathers and children with additional earnings and the value of the program outcomes. Therefore, the per-father and per-child present values throughout this report could overestimate or underestimate the present values of future benefits and savings.

Further, this study does not include all the potential cost savings associated with father program and early education program outcomes, largely due to the lack of research that measures or monetizes many potential outcomes. Therefore, to the extent that savings might be realized in other areas, the estimates presented here understate the total potential savings.

Finally, this study is based mostly on data from Minnesota. However, benefits and monetary values will vary from state to state, depending on the quality and intensity of fatherhood, parenting, and early childhood programs; demographic characteristics of the population served; and local social and economic conditions.

For perspective, according to Minnesota Compass (2018), Minnesota's median household income, the 12th highest in the United States, is about \$7,000 higher than the national average of \$60,000, and its poverty rate of 9.5% is below the national rate of 13.4%. On the other hand, the high school graduation rate in Minnesota is 83%, below the national rate of 85%, and ranks 36th. For low-income students in Minnesota, the high school graduation rate is 70%. Finally, according to the U.S. Census Bureau (2018a), Minnesota spent \$2,705 per capita on public welfare expenditures in 2016, ranking among the top five states.<sup>2</sup>

## Monetary value of Responsible Fatherhood program outcomes for fathers

This section draws from a return on investment study completed in 2010 by Wilder Research of the Goodwill/Easter Seals of Minnesota's FATHER (Diaz & Chase, 2010), with the monetary values adjusted for inflation. We analyzed the results of that study to estimate the per-father value of the outcomes achieved by successful participants.

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<sup>2</sup>Public welfare expenditures include cash assistance paid directly to needy persons, payments made directly to private health and welfare agencies for medical care and other services provided such as foster care, and payments to other governments for administration costs and support of private and private welfare agencies.



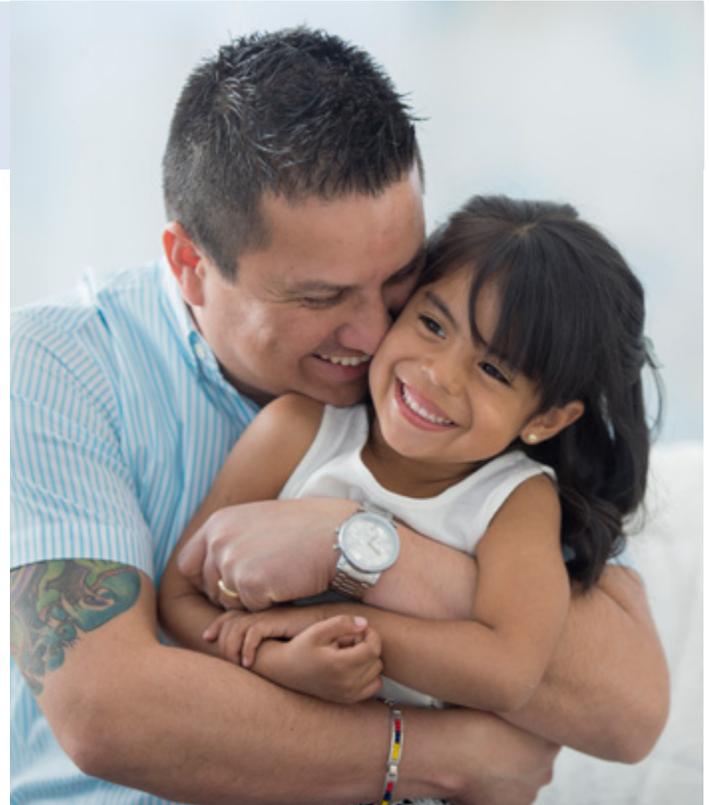
Fathers in that program ranged in age from 19 to 53, with an average age of 31. At the outset, approximately 45% of 380 participants in the study reported not having a competitive job; 43% did not hold a high school diploma or a GED; and 36% had criminal convictions in the past. These characteristics are similar to the over 10,000 fathers who were part of a non-custodial father child support and employment demonstration evaluation, with an average age of 35, nearly 70% with at most a high school education, and 44% who were not employed (Cancian, Guarin, Hodges, & Meyer, 2018). Similarly, an eight state study of 1,674 fathers reports an average age of 33; low education levels, ranging from 13% to 71% with no high school degree or a GED, and 45% of the fathers not employed (Pearson et al., 2003).

*The total estimated monetary value of successful participation in a Responsible Fatherhood program could potentially reach about \$177,000 per father.*

### Increased lifetime earnings

Educational attainment is the main determinant of lifetime earnings. A primary outcome associated with father participation in Responsible Fatherhood programs and engagement with their children is increased lifetime earnings for both father and child. This potential two-generational benefit is associated with the enhanced likelihood of completing a high school education or its equivalent.

In this section, we look only at the lifetime earnings for the fathers. The potential effects of father participation in Responsible Fatherhood programs and engagement with their children on the lifetime earnings of their children are described on [page 13](#).



#### *Increased lifetime earnings of fathers due to increased educational attainment*

Responsible Fatherhood program participants receive services to help them obtain their GEDs, and education is a main determinant of lifetime earnings. In one estimation, GED holders earn nearly \$9,500 more annually than non-GED holders (Wilder Research, 2010).

These calculations of increased lifetime earnings use present values based on the age when fathers attained their GED until age 65 and adjusted for inflation. The increase in the lifetime earnings per father due to attaining a GED reaches \$124,000 (U.S. Census Bureau, 2018b).

#### *Increased lifetime earnings of fathers due to increased wages*

To assess the economic benefit of participation in a Responsible Fatherhood program, we compared the changes in wages among fathers who received job placement services with changes in wages of the group of fathers who did not receive job placement services. The difference between these two groups, or the net gain in wages attributable to participating in the FATHER is \$3,130, a gain of more than 35% in annual income. The impact due to increased wages needs to be reduced by 20% to avoid double counting the educational impacts. After netting out the impact of educational attainment and assuming that employment impacts of the program would remain constant for the

next 10 years, and adjusting for inflation, the net present value of the long-term benefits due to increased wages of FATHER participants who received job placement services reaches approximately \$25,000.

In all, the increased lifetime earnings associated with successful participation in a Responsible Fatherhood program through attaining a GED and job placement services amounts to \$149,000 per father.

### **Increased child support payments**

Complying with child support obligations is a central expected outcome of involvement in Responsible Fatherhood programs. Based on a 2010 evaluation of the FATHER program in Minnesota, fathers were able to pay 51% of their child support obligation, averaging \$1,222 per year, attributed to job placement services provided by the program. That rate is comparable to rates reported in other evaluations of Responsible Fatherhood programs. For example, 41% of child support owed was paid in Arapahoe County, Colorado, (Pearson, Davis, & Venohr, 2011), and fathers who participated in eight programs in eight states paid 36% to 72% of what was owed (Pearson et al., 2003).

Assuming that these fathers will pay at least the same amount for at least eight years, based on their children's average age of 10, future child support payments that can be attributed to successful participation in a Responsible Fatherhood program is nearly \$10,000 per father. Discounted 3% per year and adjusting for inflation, present value amounts to \$9,878 per father, not counting any potential changes in child support payments due to decreases or increases over time in parental earnings.

### **Benefits to taxpayers of increased lifetime earnings of fathers**

The benefits to taxpayers consist of additional sales and income tax revenues due to increased income of participants in a Responsible Fatherhood program.<sup>3</sup>

To estimate the additional revenues from taxes, we applied the marginal tax rate and sales tax incidence rate in Minnesota to the total additional lifetime income due to increased education of participants (\$124,000) and increased wages (\$25,000).

The estimated long-term additional tax revenues per successful FATHER participant is \$8,002 in income tax and \$3,129 in sales tax for a total of \$11,131.

### **Value of increased community involvement and leadership of fathers**

Volunteer time spent working in the community by fathers has some monetary value. When this volunteerism can be reasonably attributed or motivated by their involvement in a Responsible Fatherhood program, part of the monetary value of this time can be estimated using a reasonable wage rate as a measure of the value of time. Another potential benefit, which is difficult to monetize, is the effect participating fathers may have on other fathers and potential fathers by being positive role models. Accordingly, we estimate only the value of the time allocated to community volunteerism and leadership work by fathers associated with the FATHER, and discount the resulting value using a conservative rate. If fathers volunteer 40 hours per year for five years at a value of \$15/hour, and applying a discount rate of 50% to account for the assumed net impact of the Responsible Fatherhood program, the value of a father's volunteer time reaches approximately \$1,500.

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<sup>3</sup>Not counted are potential savings due to reductions in the use of public benefits such as TANF, SNAP, and Medicaid by custodial parents following increases in child support payments. Also not counted are savings due to reductions in unemployment insurance claims. These additional potential benefits to taxpayers were found in an evaluation of the Texas Workforce Program known as NCP Choices (Schroeder & Doughty, 2009).



## Reduced recidivism per-father savings for crime victims and taxpayers

Recidivism is commonly defined as a conviction in a court for any offense following release to the community. Benefits of reduced recidivism are assessed in terms of reduced costs to taxpayers for law enforcement, adjudication, and incarceration, and reduced costs to the victims of crime. The economics literature provides sufficient evidence of the magnitude of the economic costs that recidivism and incarceration impose on society (Aos, Miller, & Drake, 2009). The benefits are usually estimated in terms of present value of crime-related costs avoided over the lifetime of an individual participant (Washington State Institute for Public Policy, 2007).

The relevant question for this prospective monetary estimate of Responsible Fatherhood program impacts is how many fathers who did commit crimes in the past or who might be at-risk for committing crimes without service intervention stayed out of the criminal justice system because of their involvement in the program.

A study by the Washington Institute for Public Policy (Aos et al., 2009) shows that interventions that seek to reduce recidivism produce reductions between 20 and 40%, with lifetime benefits of reduced recidivism ranging from \$1,835 for minor crimes to \$75,722 for victims of violent crimes and \$1,069 to \$28,713 for taxpayers, depending on the type of crime.

Based on national crime data that says 16% of crimes are property or violent crimes, we can use the upper amounts in the ranges to estimate the possible benefits for preventing 16% of repeat crimes and can use the mid-point amounts in the ranges for the rest (U.S. Department of Justice, 2008). About 36%, or 137 participants, had criminal convictions. Assuming a 65% rate of recidivism and that the project would reduce this rate by 20%, we can assume that about 27 participants would not commit new offenses due to the FATHER program. Four of these would probably be violent or property crimes.

Therefore, crime victims may receive estimated benefits of \$1.2 million in terms of saved costs, and taxpayers would accrue savings in the order of \$457,000 for these estimated 27 participants of the FATHER program that had a previous criminal conviction and did not commit a new offense because of the influence of the program, amounting to \$1.66 million. Adjusted for inflation, the present value per-father savings associated with reduced recidivism is \$3,637 for crime victims and \$1,390 for savings to taxpayers.<sup>4</sup>

## Summary

Figure 1: Per-father estimated monetary value of successful participation in a Responsible Fatherhood program

	Potential lifetime value for one father
Increased lifetime earnings	\$149,000
Increased child support payments	\$9,878
Increased taxes paid	\$11,131
Value of increased community involvement and leadership per father	\$1,500
Crime victimization savings	\$3,637
Recidivism savings to government	\$1,390
<b>Total estimated value of all potential outcomes</b>	<b>\$176,536<sup>5</sup></b>

<sup>4</sup>Not counted are the costs of bringing contempt actions against nonpaying fathers and incarcerating them, a practice that generates high public costs in some jurisdictions as reported, for example, by the South Carolina Center for Fathers and Families (See: [http://www.scfathersandfamilies.com/impact/2018\\_impact\\_report/](http://www.scfathersandfamilies.com/impact/2018_impact_report/)).

<sup>5</sup>To repeat, the estimated value of each potential outcome of Responsible Fatherhood programs are independent and apply to only fathers who could reasonably achieve the outcome through successful participation, such as fathers who enter a program with no high school diploma, or no job, or not paying child support. Accordingly, the values for each outcome do not automatically add up to the total estimated value of all potential outcomes and could only reach the total level of \$176,536, depending on the extent to which each father achieves each outcome.



## Potential monetary value of Responsible Fatherhood program outcomes for children **PART 1**

This section estimates the lifetime monetary values and cost savings within Minnesota as a result of increased child literacy and development due to increased participation of fathers in low-income children's lives and improved parenting skills.

The estimates are based on actual expenditure data, arrest rates, and other data for Minnesota as a whole and effect sizes and parameters from the existing research on effects of Responsible Fatherhood and other parenting programs.

### Background

Interventions to increase parenting skills seek to improve knowledge, skills, attitudes, and behavior of fathers that are related to early childhood developmental outcomes that have potential lifelong consequences.

The more stable economic conditions of the fathers and improvement in their parenting skills would likely have a positive impact on children's cognitive and social development that would contribute to their early learning success and to an ultimate path of future educational attainment and financial stability. That is especially the case when Responsible Fatherhood programs include "play and learn" parent-child experiences with a focus on literacy and health – key skills to improve children's school success.

An evaluation of the early childhood education components of the FATHER Project (Bischoff, 2010) found that these participants say they had:

1. Increased understanding of their children's developmental stages and health.
2. Improved their parent-child bonds and connections.
3. Become more active teachers for their children.

Studies have shown that fathering programs able to achieve high involvement of the participating fathers show small effects on parenting skills, positive father involvement and parenting with their children, and improved academic readiness skills of children (Fagan & Iglesias, 1999; Holmes, Hawkins, Egginton, Robbins, & Shafer, 2018). Moreover, in a study of father involvement with toddlers in Early Head Start, results showed better cognitive, language, and emotional developmental outcomes when the "social toy play" was more active and complex (Roggman, Noyce, Cook, Christiansen, & Jones, 2004).



Consistent and positive father involvement has been found to be a protective factor, particularly for children in impoverished environments. Specifically, father engagement has been linked to socioemotional and cognitive benefits, such as reduced aggression, improved peer relationships, and the capacity to cope with novelty and challenge. On the other hand, father absence or inconsistent presence has been associated with adverse developmental, educational, and behavioral outcomes (Dukes & Palm, under review; Fitzgerald & Bocknock, 2013; Lamb, 2010; Office of Family Assistance, 2018; Parke, 2013; Stroufe, Egeland, Carlson, & Collins, 2005).

Similarly, two meta-analyses found small to moderate effects (means of .20) of fathers' nurturing relationships and positive involvement in a variety of interactive developmental activities with their children on their children's prosocial skills and social outcomes as well as on their self-regulation and early academic achievement. However, the effects appear weaker for non-resident fathers (Adamson & Johnson, 2013; McWayne et al., 2013).

In an essay summarizing the economics literature on human development, James Heckman concludes that improving parenting and child skills is complementary and that parental engagement and positive parent-child interactions are the foundations of non-cognitive (social-emotional) skill development that shape a child's later life education, health, earnings, and crime outcomes (Heckman & Mosso, 2014).

Some studies have found that father involvement reduces time in foster care (Burrus, Green, Worcel, Finigan, & Furrer, 2012), and that children of parents in parenting programs are less likely to be arrested later in their life (Webster-Stratton, Rinaldi, & Jamila, 2011).

Finally, a study of teacher-assessed early prosocial skills found an inverse statistically significant association of early prosocial competence with receiving public assistance, ever being in juvenile detention, ever being arrested as a young adult, and substance abuse behaviors (Jones, Greenberg, & Crowley, 2015).

### **Increased lifetime earnings of children**

The sequence of positive parenting on children's lifetime earnings links positive parenting to improved test scores to increased likelihood of high school graduation to improved earnings (Krueger, 2003; Levin, Belfield, Muennig, & Rouse, 2007).

Students who are below reading proficiency are 1.9 times less likely to graduate from high school than proficient students (Hernandez, 2011). In Minnesota, low-income students have nearly a 58% chance of not graduating due to low literacy (Minnesota Department of Education, 2018a).

Efforts to improve reading through improved parenting have increased standardized test scores by 18% for low-impact programs to 36% for high-impact programs (Englund, Luckner, Whaley, & Egeland, 2004; Fan, 2001; Gomby, 2005; Izzo, Weissberg, Kaspro, & Fendrich, 1999; Love et al., 2002).

Using the effects of a low-impact parenting program produces a subsequent increase in the chance of graduating at approximately 10%.

Based on U.S. Census American Community Survey five year estimates (2016), a high school graduate will make approximately \$198,729 more than a high school dropout during her or his working life. By improving reading and test scores, and thereby increasing the probability of graduating high school, children of engaged fathers can potentially increase their lifetime earnings by about \$20,000.



## Increased taxes paid

Computed using effective tax rates (income, sales, and property) for state and local taxes, taxes on the additional income associated with responsible positive parenting could reach \$4,988, according to the Minnesota Department of Revenue (2018).

## Savings from reduced future arrests

As described earlier, father involvement improves social-emotional functioning. In turn, children who show satisfactory social-emotional functioning are less likely to be detained in a juvenile detention facility or be arrested by age 25 (Jones et al., 2015). The research on parenting programs shows that children in these programs are less likely to be arrested later in their life (Webster-Stratton et al., 2011).

We estimate the marginal cost of an incarceration in Minnesota at \$8,960 based on data from the Minnesota Department of Corrections (2016).

To estimate the potential savings associated with father involvement in parenting, we use an estimated incidence of crime for low-income children of 1.1%. This is calculated by multiplying the average rate of crime per youth (age 10-17) in Minnesota (0.92%), estimated from the Minnesota Department of Public Safety (2018), times the ratio of ever being arrested between low- and middle-income children (1.2) from Kent (2009). The savings associated with father involvement in parenting is about \$99 per child.

## Estimated other benefits to individuals and the public, cost savings for K-12 education, and cost savings to state government and taxpayers

To repeat, the published research on father involvement and parenting programs shows some but not all of the potential child outcomes that have monetary value. Accordingly, in the next section, to provide an estimate of the potential full benefits of Responsible Fatherhood programs per child, we first estimate the per-child monetary values on the full array of early education program outcomes. Then, in the following section (Potential monetary value of Responsible Fatherhood program outcomes for children – Part 2, page 21), we apply the effect sizes for father involvement and parenting programs to these other benefits and cost savings and provide a summary of the per-child estimated lifetime value of Responsible Fatherhood programs.

## Potential monetary value of high-quality early education program outcomes for children

Since many child outcomes that have potential monetary value have not been established in the research literature on father involvement and parenting programs, we draw on early childhood education research literature to estimate per-child monetary values. Once those are documented in this section, in the next section we apply the effect sizes for father involvement and parenting programs.

Our estimates of the lifetime monetary values and cost savings as a result of increased child literacy and development due to increased participation in high-quality early learning programs draws from several studies of the cost savings of school readiness in Minnesota completed by Wilder Research ([available here](#)).



The estimates fall into three categories:

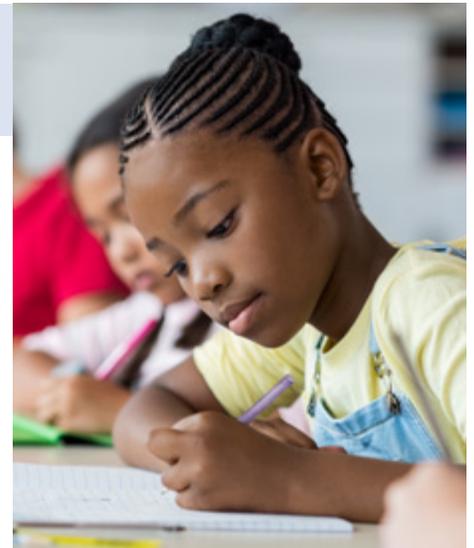
**Individuals and the public** – through increased lifetime earnings and productivity, value of improved health, and reduced crime victimization

**K-12 schools** – through reduced special education and grade repetition costs

**State government** – through reduced costs of juvenile and adult crime; through lower welfare, Medicaid, substance abuse, and unemployment costs; and through higher tax revenues

These estimates are based on actual expenditure data, arrest rates, and other data for Minnesota as a whole and effect sizes and parameters from the existing research on effects of early childhood education and parenting programs.

*The lifetime monetary value associated with early childhood education outcomes reaches an estimated \$85,000 to \$95,000 per child.*



## Background

Many studies show that high-quality early learning experiences pay off in the long run due to benefits related to increased education and earnings and reduced public costs associated with child welfare, public assistance, crime, and incarceration. (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Ehrlich & Kornblatt, 2004; Friedman, 2004; Garcia, Heckman, Leaf, & Prados, 2016; Karoly, Kilburn, & Cannon, 2005; Lynch, 2007; Lynch & Vaghul, 2015; Reynolds, 2007; Reynolds et al., 2011; Rolnick & Grunewald, 2003; Temple & Reynolds, 2005).

Several studies focus specifically on measuring the effects of early childhood interventions and quality early care and education on school systems, time spent in K-12 special education, and special education spending (Barnett, 1995; Belfield, 2004a; Belfield, 2004b; Conyers, Reynolds, & Ou, 2003; Harvey, 2006; Nores, Belfield, Barnett, & Schweinhart, 2005; Reynolds, 2007; Schweinhart, Xiang, Daniel-Echols, Browning, & Wakabayashi, 2012).

Other studies focus on the impact of early childhood education programs on specific areas of government spending, including criminal justice, public assistance, Medicaid, unemployment, child welfare, and health care (Aos et al., 2004; Mann & Reynolds, 2006; Nores et al., 2005; Oppenheim & MacGregor, 2002; Reynolds, Temple, Robertson, & Mann, 2002).

## Benefits to individuals and the public

### *Increased lifetime earnings of children*

#### Educational benefits from high-quality early education programs

The average annual earnings of jobless adults in Minnesota with less than a high school education is \$7,300, according to the Census Bureau. That amount increases \$8,200 with a high school education, \$9,300 for some college.

In Minnesota, 65% of low-income children graduate from high school (Minnesota Compass, 2018), and 51% of high school graduates enroll in college (Minnesota Department of Education, 2018a). Based on a meta-analysis of several



studies, high-quality early education boosts the odds that students eventually graduate from high school by 11.4% (McCoy et al., 2017).

We multiply this net effect by the estimated 69% of low-income students who do not enroll in college and multiply by \$198,729, which is the difference in lifetime earnings between individuals in Minnesota with a high school diploma and those without a diploma (U.S. Census Bureau, 2018b).

The lifetime monetary value of early education then is \$15,632 for high school graduates. That increases by \$7,756 to \$23,388 for individuals with some college compared with those with no diploma (U.S. Census Bureau, 2018b).

### **Benefits of reduced child abuse and neglect on future earnings of child**

One measure of the avoided costs of child abuse pertains to avoiding the child's lifetime value of lost productivity, estimated to be about \$161,000 (Fang, Brown, Florence, & Mercy, 2012). Assuming a 9% counterfactual rate of child abuse (Minnesota Department of Human Services, 2018), the lifetime value of preventing child abuse and neglect amounts to \$5,768 per child.

### ***Value of improved health***

Another way to estimate the monetary value of improved health is by using the quality-adjusted life year (QALY), which is a measure of both the quality and the quantity of life lived. It is used in economic evaluation to assess the monetary value of health interventions. One QALY equates to one year in perfect health (Chase & Diaz, 2019).

For this estimation, we set the value of QALYs to \$50,000. This is the most commonly used value used throughout the health literature (Neumann, Cohen, & Weinstein, 2014). Assuming that early education adds 0.6 QALY to the perceived value of an additional year of a healthy life (Garcia, Heckman, Leaf, & Prados, 2016), the added net present value of improved health is an estimated \$29,000.

### ***Crime victimization savings***

Crime victims suffer tangible and intangible losses that constitute social costs. Early education has been shown to reduce criminal behavior of participants and thus reduce victims' costs by 12% (Reynolds, Temple, White, Ou, & Robertson, 2011).

Estimates of the tangible and intangible lifetime victimization costs range from nearly \$109,000 (Reynolds et al., 2011) to about \$25,000 (Vermont Crime Information Center, 2014). Using the conservative crime victimization costs, we estimate the reduction in crime victimization associated with early education is \$1,550 in present discounted value.

## **Estimated cost savings for K-12 education**

### ***Special education***

The annual cost savings in special education are computed by multiplying the effect of early childhood development and education on reducing the incidence of non-normative disabilities among low-income children with the lifetime cost per child receiving special education. The lifetime savings are the result of assuming that the child no longer has the need to receive special education for up to 12 years.

The average annual costs of special education in Minnesota, \$14,367, is assumed to be in addition to the cost of educating students on a regular track and do not net out potential added costs of returning the students to regular classrooms (Minnesota Department of Education, 2018b).



We assume that early education reduces the incidence of the disability by 18% for low-income students, reducing the average use to .73 years (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004). The present value of the savings is \$1,207, after discounting the savings over 12 years.

### ***Grade repetition***

Early childhood education reduces the incidence of grade repetition within a range of 6% to 40 %, with an average impact of 21% (Anderson, Shinn, & St. Charles, 2002; McCoy et al., 2017; Reynolds et al., 2011).

The average expense per retained student in Minnesota is \$12,382 (Governing, 2018). On average, 1.2% of students are retained. The estimated savings due to reduced grade repetition associated with early education is \$117 per child.

## **Estimated cost savings to state government and taxpayers**

### ***Savings from reduced future arrests***

We estimate the marginal cost of an incarceration in Minnesota at \$8,960 based on data from the Minnesota Department of Corrections (2016).

Longitudinal studies have found early education reduces the likelihood of a low-income child to be arrested as a juvenile or an adult by about 27% and reduces the time incarcerated by, on average, nearly 46 days (Reynolds et al., 2011). The savings in incarceration costs associated with early education amounts to \$861 per child in present discounted value.

### ***Savings in health care expenditures***

That high-quality early education increases the likelihood of high school completion by 11.4% is well established (McCoy et al., 2017). Within the model of expected future benefits, increased academic achievement can lead to more access to health care and better health outcomes, with an average effect of 90% (Masse & Barnett, 2002; Oppenheim & MacGregor, 2002; Washington State Institute for Public Policy, 2018).

Potential savings in health care expenditures are based on average expenditures by educational level in the Midwest region computed from the Medical Expenditure Panel Survey (U.S. Department of Health and Human Services, 2018). In Minnesota, the present value of the difference in government health care expenditures for high school graduates compared with non-graduates is \$29,889.

Government (Medicaid) savings in health care costs associated with high school graduation amounts to \$3,066 per child in present discounted value.

### ***Public assistance (cash and food assistance) savings***

The chance of needing public assistance from age 18 to 24 is 9.3% (Reynolds et al., 2011). Early education would likely reduce the number of people receiving public assistance as well as the amount of public assistance they receive. Research on this topic (Heckman et al., 2009) shows that children with early education are 18% less likely to use public assistance than a control group and spend 57% less time on public assistance.

In Minnesota, public assistance is known as the Minnesota Family Investment Program (MFIP), which includes cash and food assistance. Based on average monthly payments of \$1,092, 60 months of average time receiving payments in Minnesota, and administrative costs, present value of savings can reach an estimated \$18,910 per child.



### ***Reduced costs of abuse, neglect, and out-of-home placements***

Programs that promote healthy child development can reduce out-of-home placements due to child abuse and neglect by 39% (Reynolds, Rolnick, Englund, & Temple, 2010).

We estimate that a single case of child abuse and neglect can cost taxpayers nearly \$14,900, while an average out-of-home placement can cost nearly \$16,900. Combining these data, applying the effect size, and discounting to present value, the savings to the state associated with healthy development are estimated to be \$616 per child in Minnesota.

### ***Substance abuse savings***

The substance abuse dependency rate in Minnesota is 4.5% (computed from Substance Abuse & Mental Health Data Archive), and the estimated health care lifetime costs per person associated with alcohol consumption is about \$98,000 (Cohen, 1998). Children who participate in comprehensive early education programs are less likely to present problems of smoking, alcohol, and illicit drugs abuse (Aos et al., 2004), and early education can save an estimated 29% due to reduction in substance abuse (Reynolds et al., 2011).

In Minnesota, the lifetime savings amount to \$4,427 per person for substance abuse related cost savings.

### ***Unemployment insurance savings***

Children participating in early childhood education are more likely to graduate from high school and, consequently, more likely to be employed and less likely to receive unemployment insurance than their counterparts with no early education. Moreover, when they receive unemployment benefits, they are likely to receive them for 20% fewer months on average than children who did not attend early education programs. The ultimate effect on unemployment is a reduction of 10% (Reynolds et al., 2011).

In Minnesota, the seasonally adjusted unemployment rate is 2.8%, with average total unemployment payments of \$7,389, lasting for an average of 20 weeks (Minnesota Department of Employment and Economic Development, 2018). Thus, discounted through adulthood, the state can save \$173 per child in present value.

### ***Increased taxes paid***

Some studies have illustrated the effect of early childhood education on increased tax revenues from increased earnings of participants themselves and from future generations due to higher educational attainment that can be attributed to early childhood interventions (Campbell et al., 2002; Nores et al., 2005; Oppenheim & MacGregor, 2002; Sum, Khatiwada, & McLaughlin, 2008).

Computed using effective tax rates (income, sales, and property) for state and local taxes, taxes on the additional income that the children as adults will pay associated with and their early education could reach \$3,899 to \$5,833, according to the Minnesota Department of Revenue (2018).



## Summary

Figure 2: Per-child estimated lifetime value of high-quality early education

<b>Benefits to individuals and the public</b>	<b>Per-child lifetime value of high-quality early education \$85,000 to \$95,000</b>
Additional lifetime income due to education	\$15,632 to \$23,388
Lifetime value of preventing child abuse on child's productivity	\$5,768
Value of improved health	\$29,000
Crime victimizations savings	\$1,550
<b>Cost savings to K-12 education</b>	
Savings in special education costs	\$1,207
Savings in fewer students repeating a grade	\$117
<b>Cost savings to government and taxpayers</b>	
Savings in reduced arrests and incarceration costs	\$861
Savings in Medicaid health care costs	\$3,066
Savings in MFIP cash and food assistance	\$18,910
Reduced costs of abuse, neglect, and out-of-home placements	\$616
Substance abuse savings	\$4,427
Unemployment insurance savings	\$173
Additional income tax and sales tax revenues	\$3,899 to \$5,833

Note. Total estimated value and gains are rounded.

## Potential monetary value of Responsible Fatherhood program outcomes for children **PART 2**

To repeat, our estimates of the potential monetary value of the benefits of Responsible Fatherhood programs follows a stream of expected future benefits. We assume that Responsible Fatherhood program participation potentially enhances positive father involvement in the lives of their children, which, in turn, improves their children's social-emotional and cognitive competence and academic achievement, which is associated with reduced special education and improved high school completion rates. Finally, improved academic achievement potentially leads to increased lifetime earnings for children and, in turn, to reduced costs of welfare, crime, substance abuse, and health care.

To estimate the potential monetary value of these other benefits and costs savings, we take the effect sizes of 10% to 20% for parenting programs and father involvement reported in the research background section above and apply it to the value of the other outcomes enumerated in the previous section on the monetized outcomes of participation in high-quality early learning programs.

As shown in Figure 3, the total estimated lifetime monetary value of successful participation in a Responsible Fatherhood program reaches about \$32,000 to \$38,000 per child.



Figure 3. Per-child estimated lifetime value of Responsible Fatherhood programs

<b>Benefits to individuals and the public</b>	<b>Per-child lifetime value of Responsible Fatherhood programs \$31,572 to \$38,053</b>
Additional lifetime income due to education	\$20,000
Lifetime value of preventing child abuse on child's productivity	\$577 to \$1,154
Value of improved health	\$2,900 to \$5,800
Crime victimizations savings	\$155 to \$310
<b>Cost savings to K-12 education</b>	
Savings in special education costs	\$121 to \$241
Savings in fewer students repeating a grade	\$12 to \$23
<b>Cost savings to government and taxpayers</b>	
Savings in reduced arrests and incarceration costs	\$99
Savings in Medicaid health care costs	\$307 to \$613
Savings in MFIP cash and food assistance	\$1,891 to \$3,782
Reduced costs of abuse, neglect, and out-of-home placements	\$62 to \$123
Substance abuse savings	\$443 to \$885
Unemployment insurance savings	\$17 to \$35
Additional income tax and sales tax revenues	\$4,988

Note. Total estimated value and gains are rounded.

## Discussion

This study is the first attempt to monetize the economic returns and avoided costs of a broad set of potential, two-generation, long-term child development and family well-being outcomes of responsible father engagement. While it is limited to available data pertaining to Minnesota and only to potential benefits and cost savings with sufficient supporting research evidence, this study makes a strong economic case for investing in Responsible Fatherhood programs and provides a prototype for future research.

The study estimates the monetary value of successful participation in a Responsible Fatherhood program could reach about \$177,000 per father and about \$32,000 to \$38,000 per child. By adding high-quality early childhood education, the potential monetary value per child grows to an estimated \$85,000 to \$95,000.

Keep in mind these values do not include all the potential cost savings associated with father program and early education program outcomes. For example, this study does not include potentially reduced health care and unemployment costs for fathers, savings in incarceration costs for nonpayment of child support, and reductions in the use of public benefits following increases in child support payments to custodial parents. In addition, this study doesn't include potential per-child cost savings, for example, from reduced non-instructional and health costs related to special education and preventable health problems and from not providing education to students in juvenile detention. These potential savings were not included due to the lack of research that measures or monetizes these outcomes. Therefore, to the extent that savings might be realized in other areas, the estimates presented here understate the total potential savings.



## Implications for policies and programs

This study shows the potential benefits of establishing and investing in comprehensive fatherhood programs. Comprehensive programs would include GED programming, job placement services, and diversion services as an alternative to incarceration. To promote positive father involvement associated with improved child development, fatherhood programs should also include parenting classes and play and learn groups. Strong links to early education programs would also boost child outcomes with lifelong positive value.

Finally, fatherhood programs should be aware of the potential monetary benefits they generate for fathers, their children, and the society as a whole and systematically collect appropriate data about their participants to generate accurate and robust outcome and return on investment studies.

## Implications for researchers

While this study calculates the present values of current benefits and savings in future years to account for the value of money over time, this study does not account for any potential changes in the incidence rate of each outcome and dollar value of social benefits over time. Future studies should consider methods for estimating those changes and ways to adjust the projected benefits and savings.

Future studies should also update the research literature to add new father and child outcomes with sufficient supporting research evidence to monetize them and consider comparative studies that account for variations from state to state in outcomes, demographic characteristics, and local social and economic conditions.

Further, this study describes the potential two-generation value of connecting Responsible Fatherhood programs and early childhood education programs. Future studies could carry out a rigorous evaluation of the extent to which connecting or integrating those programs achieves the expected results relative to separate programs and the absence of any programs. Since that would require an experimental evaluation with a control group, that may be difficult to accomplish. Nevertheless, Responsible Fatherhood programs could routinely collect and document data to enhance the scope of measuring their results pertaining to children. Such data would include, for example, before-, during-, and after- program participation data on child-development related parenting behaviors, behavioral indicators of the father-child bond, and the developmental status of their children.

Finally, while this study examines the potential monetary value of Responsible Fatherhood program outcomes for fathers and children, it is not a cost-benefit study that compares the value of those benefits to the costs of the programs to produce those benefits. Future studies could also calculate the return on investment by documenting the total costs to deliver the programs.



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