Return on Investment in Birth-to-Three Early Childhood Development Programs

September 6, 2018
Heckman’s research proves that starting earlier has the greatest returns.
Nobel Laureate Economist James Heckman’s research makes the economic case for early childhood investments starting before birth.
Birth-to-three advocates can use Heckman’s ROI to advance investments that begin at birth.
Abecedarian Cost/Benefit Analysis
The Abecedarian Project

• The study looks at the ABC/CARE Project, a center-based birth-to-five early childhood education program in North Carolina during the 1970s.

• This was a random controlled trial with the goal of increasing achievement. Participants were children from low-income African-American families.

• Children received quality early childhood learning and care, which included early health and child-centric early learning and care each weekday for five years. It also included parental education.

• Outcomes for participants were charted well into adulthood, with the last sweep at age 35 to quantify gains in education, health, employment and sociability.

• Elements of ABC/CARE exist today through disconnected programs such as home visiting, child well-being, nutrition, early learning, child care and preschool programs.
The cost-benefit analysis (CBA)

• Starting early with high-quality programs for disadvantaged children pays off—cognitive fadeout often seen in preschool programs was not present here. Quality early learning produces permanent boosts in IQ and social-emotional skills.

• Providing health, early learning and care from birth produces a 13% return on investment per child per annum, significantly higher than just investing in preschool alone.

• These returns are higher than the 7-10% annual ROI for preschool because this program started earlier, and the cost-benefit analysis includes a first-time-ever calculation of health benefits.

• Quality child care pays off by helping mothers establish careers and grow income. Income gains over the first five years pay for the entire cost of comprehensive early childhood development.
Key policy applications

- **Comprehensive support for low-income children from birth-to-five** produces better outcomes for children and greater economic benefits to society than investing in any one element.

- **Early health care as an input is key to producing better health in adults**—the savings from preventing expensive chronic diseases in adulthood more than justify the cost of investment. These have now been fully quantified in the new ROI.

- **Child care has a two-generation effect when combined with quality early learning**: mothers grow their income while children gain the skills to succeed in school and life.

- **Policymakers get more for their money by starting at birth**—children without early learning arrive at preschool with achievement gaps.
Key policy applications

• **Starting earlier matters for low-income children**—they gain the most when we invest from birth-to-age-five in comprehensive, quality services.

• **Quality is important.** Quality is defined as working in partnership with parents, taking a highly developmental, child-centric and whole child approach to learning and care, providing health screenings and follow-up and helping children transition to K-3.

• **Low-quality care can be harmful**—especially for boys who have two parents in the household.

• **High-quality, reliable child care pays for the entire program before the child enters kindergarten.** The economic gains of freeing mothers to enter the workforce, build skills and earn income pays for the cost of the program in the short-term while long-term benefits for children accrue into adulthood.
How the data supports birth-to-three advocacy:

• **Health**: Justification for retaining and increasing child health and nutrition programs.

• **Quality**: Only access to quality will produce the return on investment. Many elements of quality already exist in many states in different programs—they can be put together for more effective outcomes.

• **Early learning and family support**: Economic argument for seeing child care as early childhood development and attaching quality early health and learning to child care benefits.

• **Family support**: A powerful way to reduce the effects of poverty on families and child development—boosting parental income and the child’s economic and social prospects.
Early health makes a big difference
Early health services

• Children had access to a doctor and nurse on staff at the center. Two nurses provided on-site coverage; one doctor came in for screenings.

• Children were given periodic screenings for physical health and developmental milestones.

• Identified health and developmental problems were referred to outside medical care—most likely publicly-provided or supported health care.

• Staff doctors and nurses coordinated the continuity of care and worked with the children and parents to ensure compliance to doctor’s orders.

• Nutrition was a key component to the health approach—children received healthy meals and snacks while in the center.
Health outcomes confirmed

- Better physical health from childhood through adulthood, particularly in fighting unhealthy behaviors and obesity.

- Females were less likely to start drinking at an early age; more likely to engage in physical activity and eat nutritious foods; and less likely to fall into pre-hypertension.

- Males had significantly higher levels of “good” HDL cholesterol and none had metabolic syndrome—hypertension, central obesity and dyslipidemia—while the prevalence in the control group was 25%.

- Health outcomes are attributed to early health, nutrition and learning—a healthy foundation advanced the building of cognitive and social-emotional skills that empowered them to build healthy lives as adolescents and adults.
Health effects of Abecedarian intervention at age 35

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Source: Campbell, Conti, Heckman, Moon, Pinto and Pungello (2012)
Key policy applications

• The 13% ROI figure includes the long-term cost-benefits that come from a comprehensive, high-quality program.

• The combination of early health and learning services are essential for preventing later adult chronic disease and promoting better health and healthier lifestyles in childhood and throughout adulthood.

• Cutting early health and learning services will likely lead to more costly health conditions later in life, beginning as early as age 35.

• Connecting services into a whole child approach and continuing those services through age five.
Quality matters in early learning and care
Early learning services

- Child care and early learning were the same thing, with children receiving highly developmental, child-centric engagement that built cognitive, social-emotional and behavioral skills.

- Treated children received early learning and care from birth-to-age-five, providing parents with reliable, enriching child care for 52 weeks a year—allowing them to enter the job market with confidence.

- Program was administered by highly-trained professionals in early childhood development who were assisted by trained paraprofessionals.

- Program helped children transition into formal schooling in grades K-3.
Early learning outcomes

• No cognitive fade out: Starting at birth and continuing to age five produced permanent gains in IQ and social-emotional skills—unlike any preschool program.

• Children had significantly better life outcomes than those who didn’t receive center-based care or those who received lower-quality care.

• Females saw positive effects on years of education, high school graduation, adult employment and income and parental income—results higher than the alternative of staying at home.

• Males had higher education, health, employment and income outcomes; lower adult hypertension, blood pressure and drug use—even when compared to alternative child care centers. Low-quality care has negative effects for males.
Two-generation outcomes driven by high-quality care

• Mothers entered the workforce, gained skills and increased their earnings and financial independence.

• Children received foundational skills that increased achievement in school and made them more productive in the workforce as adults.

• Increases in parental income alone paid for the cost of the entire program after just five years.
Key policy applications

• Quality early learning is essential for building skills that enable greater achievement and health.

• Policymakers who invest in high-quality early learning programs from birth can permanently boost IQ and social-emotional skills that create productive, independent adults.

• Child care functions as early learning in the real world—child care without high-quality learning is a huge missed opportunity.

• Investing early in education produces better economic, health and social outcomes in childhood and adulthood.

• Low-quality child care can be harmful to children, particularly males from two-parent families.
Key policy applications

- Policymakers should invest in high-quality child care for low-income families.

- Attaching quality to child care provides two generations of benefits—it helps parents grow their income and children grow smarter.

- Simply providing access to child care without early health and learning is a missed opportunity to promote upward mobility in two generations.

- Investing in high-quality child care quickly pays for itself in income gains among parents in the first five years and beyond.
Home visiting works
Nurse-Family Partnership, Memphis, TN

- NFP is a parental education and family health model. It is similar to HIPPY, Parents as Teachers and other home visiting programs used around the country.

- This is a random-controlled trial of a home visiting program in the United States—offering hard data to the increasingly accepted notion that home visiting programs work.

- A registered nurse visits the home to work with families during and after pregnancy up to age two. They have formal training and follow a detailed curriculum of activities specific to different stages of pregnancy and child development.

- Specialists provide medical, parenting and family education with the goal of helping parents provide their children with a strong start in life.
Memphis NFP outcomes

• Improved birth weight for males, which ultimately prevents developmental problems associated with low birth weights.

• By the time children reached age two, NFP improved home environments, positive parenting attitudes and maternal mental health.

• By age six (four years after the program ended), the home visiting program led to improved cognition skills for both boys and girls, and better social-emotional skills for girls. The impact on boys’ educational achievement continued to grow when assessed at age 12.
What it means

• Home visiting programs strengthen parenting skills and improve early health and development.

• Participation in home visiting programs can lead to improvements in maternal mental health, specifically reductions in anxiety and improvements on mastery/self-control as well as improvements in parenting skills.

• These key outcomes lead to a home environment that better supports the healthy development of young children.
Key policy applications

• Voluntary home visiting programs are a short-term investment in long-term outcomes for mothers, children and families.

• Home visiting programs help policymakers strengthen families through the natural desire of parents to be the best possible parents.

• Parents are often described as children’s first and best teachers; home visiting programs empower parents as teachers.

• Home visiting programs are used throughout the world to improve family and child outcomes—and there is evidence that they need not be expensive or intrusive in order to produce highly valuable outcomes.
How to use ROI data
Frames: rational and emotional

• Heckman’s economic ROI (13%) works better with policymakers than parents—and many voters.

• Be sure to stress that the return on investment only comes from investing at birth and combining quality early learning, care and health services for economically disadvantaged children.

• While parents/voters fully accept that investing early produces better education and life outcomes, they don’t see children as economic agents.

• For parents/voters, discuss life outcomes first, then cover ROI data: “These life-changing programs pay for themselves…”

• While policymakers want hard ROI, don’t forget to use the softer ROI of anecdotal success stories. There is an emotional ROI for them.

• Parents/voters: emotion + data; policymakers: data + emotion.
Tough questions and answers

• **ABC happened way back in the 1970s, how does it apply today?**
  Just because a trial has happened in the past doesn’t mean it’s not applicable—we have medicines and medical procedures based on past trials. ABC became one of the hallmark programs for public and private early childhood education programs. In fact, it was the basis for North Carolina’s Smart Start and NC Pre-K, which together have shown great gains in school readiness and achievement.

• **Weren’t the sample sizes too small and that’s why the results are so good?**
  No. From a statistical standpoint, smaller sample sizes should show less significant results, not more. Heckman and his team adjusted for the sample sizes and for any problems with the randomization in the treatment and control groups. We have data on the participants well into adulthood—something very few early childhood programs have. The school and life outcomes here are borne out by a wider body of studies of other, more contemporary programs.