

A 10-year strategy of increased coordination & comprehensive investments in early child development

Ajay Chaudry & Jane Waldfogel

abstract. The United States has a fragmented and inadequate system of early childhood care and education. Most children do not receive high-quality opportunities; only those whose families have the means to provide them receive their benefits. Market-based and privately financed services operate separately from publicly funded programs and serve different populations with different levels of quality. Often, there is little coordination between different programs that serve the same child over the course of her or his early years. This lack of coordination contributes to growing inequities in later educational and adult outcomes. We propose a 10-year strategy for a coordinated set of reforms to significantly improve and integrate the major public and private early childhood programs into a coherent whole. The goal is to better meet children's needs, with a special focus on leveling the development and learning gaps that exist before kindergarten. The strategy consists of paid parental leave, child-care assistance for children with working parents, universal early education that starts when children are 3 years old, and a re-envisioned role for Head Start to reach the most disadvantaged children with intensive services from birth.

The United States invests far less in children between birth and age 5 years than in older children and lags far behind what other countries with well-developed economies spend on early childhood programs.^{1,2} For example, in 2012, 54% of 3- and 4-year-olds in the United States were enrolled

in any type of preschool education, compared with 94% of 3- and 4-year-olds in Germany, 96% in the United Kingdom, and 100% in France. While U.S. families paid for the early education of more than half of the children enrolled in programs, more than 80% of children in Germany, the United Kingdom, and France were served through public funds. In addition, although the United States, on average, spends approximately 10% more on elementary and secondary education (kindergarten through 12th

Chaudry, A., & Waldfogel, J. (2016). A 10-year strategy of increased coordination & comprehensive investments in early child development. *Behavioral Science & Policy*, 2(1), pp. 47–55.

grade; K–12) as these countries, it spends less than half of what they do on preschool education.¹

In contrast to these peer countries that provide universal programs, the United States provides deeply fragmented early childhood education (ECE) experiences for its children. Among high-income families, 76% of 3- and 4-year-olds attend preschool; of these, 75% are in private programs. At the same time, among children in low- and middle-income families, only about half (49% and 54%, respectively) attend preschool, with the majority participating in publicly funded programs (80% of children from low-income families and 54% of those from middle-income families). For those who enroll in public programs, there is a range of different service systems (such as the federal Head Start program, state-funded prekindergarten programs in some states, and federal and state-funded child-care subsidies), but each system has its own set of eligibility rules and quality standards, and none are funded to the degree needed to fully meet the needs of the eligible population they are intended to serve. For children younger than 3 years, the gaps are even wider. As a result, on the first day of kindergarten, many American children are not ready for school.

The fragmented and inadequate investment in early childhood programs has continued despite an abundance of research across the biological, economic, and behavioral sciences showing that children's cognitive, social, and emotional skills develop the most rapidly during their early years and that this is a time when investments are particularly effective.^{4–6} Failing to invest adequately in young children's skill development hurts the ability of the United States to develop the highly skilled labor force that is crucial for competing in the global economy.

The wide disparities in young children's cognitive and social-emotional skills by parents' educational and income levels increase later educational and economic inequalities. Large disparities in reading and math skills between children from low or medium socioeconomic status families and children from higher socioeconomic status families are already present at the start of kindergarten. These disparities have been widening in recent decades^{8,10} and have lifelong consequences for children's outcomes.^{7,11,12} Studies that track children longitudinally find that reading and math scores in kindergarten and the early primary grades strongly predict later outcomes such as high school graduation,

college attendance, college completion, adult earnings, health, and criminal behavior.^{11,13,14} Studies also show that preschool programs can have lasting effects. For example, David Deming found that, compared with control participants, Head Start participants are over 8 percentage points more likely to graduate from high school, 6 percentage points more likely to attend college, 2 percentage points less likely to become teen parents, and 7 percentage points less likely to be in poor health in young adulthood.¹³

In this article, we make the case that it is urgent to address the wide and growing disparities in young children's cognitive and social-emotional skills by creating a comprehensive set of investments in early childhood. Many proposals for ECE focus on reforms to individual service systems (for example, prekindergarten or home visiting), a narrow population of children (for example, 4-year-olds or children of working parents), or a particularly significant problem in an existing service (for example, low-quality child care). We are concerned that, in isolation, these efforts might prove insufficient or could fragment services even more. We also believe that it is time for the United States, like the peer countries mentioned above, to move to a universal system of early care and education. Providing universal care and education in early childhood benefits all children, not just the disadvantaged. And, if the goal is to provide high-quality services to low-income children and early experiences on a par with those received by their higher-income peers, that goal is more likely to be achieved if middle- and high-income children are able to participate in universal programs and benefits.

A strong evidence base supports the effectiveness of early childhood interventions, including many studies using randomized controlled trials or other rigorous methods, enough for the country to move forward with needed reforms.^{15,16} At the same time, further research is needed to test rigorous models that can be developed at a significant and replicable scale.

In the next section, we discuss the principles that guide our approach. Following that, we lay out the four components of our 10-year strategy: *paid parental leave* to ensure quality caregiving from birth, *guaranteed child-care assistance* for families with working parents; *universal early education starting when children are 3 years old*; and a *re-envisioned role for Head Start* that focuses on the most vulnerable children in the most disadvantaged communities.

Principles to Guide Early Childhood Investments

Our approach is grounded in four principles based on what we see as the key challenges across the range of early childhood services and the core societal values that are relevant to this area.

1. *Access.* Ensure that all American children have access to the opportunities they need to reach their developmental potential and embark on a secure educational pathway. This means supporting evidence-based early childhood services that increase the social, emotional, and intellectual development of children from birth to age 5 years.

2. *Quality.* Public investments should provide high-quality care and education opportunities. Research indicates that higher quality care and education provide lasting benefits for children's development and outcomes^{15,17,18} but that much of the early care and education children receive currently is low in quality.^{19,20} High quality in early care and education is generally defined in terms of the program characteristics associated with positive effects on children's cognitive, social, and emotional development. These include both what are considered structural characteristics (such as the training and skill level of the teacher or caregiver and appropriate teacher-to-child ratios at given ages for children) as well as process quality characteristics (such as the amount and type of direct interactions children experience with their caregivers).

3. *Parental support.* Public investments must support parents, who have the primary responsibility for nurturing their children's early development. Parents have the greatest influence on children, both directly as a result of their parenting styles and indirectly through the early learning situations in which they place their children.²¹ This means that in addition to offering support for parenting skills, policymakers can help parents make good choices by improving the availability, quality, and affordability of developmental opportunities.

4. *Shared private and public responsibility.* All parents should be expected to contribute to the extent their resources permit, because they have the greatest stake in their children's future and are best positioned to make decisions regarding the most appropriate investments. At the same time, what parents can provide is constrained by their resources relative to the costs of high-quality care and education. In some instances in

which investments support a service that responds to broadly shared needs (for example, for public education or parental leave to care for newborn children), public financing and universal provision of services may offer the best approach. In other instances, it may be more efficient to expect market-based services to meet a range of family preferences and needs, supplemented by targeted public support to ensure access or assure quality.

A Four-Pronged, 10-Year Strategy to Expand and Coordinate Early Childhood Investments

On the basis of the evidence about what children need and effective interventions to meet these needs, we propose a coordinated strategy for investments in early childhood. Our approach builds on extensive research on children's early development, the effectiveness of program interventions, and the role of public policies in enhancing the development of the nation's children, including its most vulnerable children.^{15,22,23}

Parental Leave: Supporting Children and Parents from Birth

We propose that the United States institute paid parental leave as a national policy. The goal should be to provide a minimum of 12 to 16 weeks of paid leave to all new parents after the birth or adoption of a child.

The days and weeks following birth are a critical time when a newborn needs consistent, sensitive, and responsive care. However, many parents in the United States are unable to take time off from work to care for their children without risking the loss of their job or their family income. The United States is the only developed country that does not provide public financing for paid leave to parents with a newborn baby. As a result, three in 10 first-time mothers in the United States return to the workplace within 2 months of their baby's birth, and those with the least resources—those who are less educated, single, or younger—are the most likely to return to work early.²⁴

Extensive research elucidates the benefits of more generous parental leave policies. Several studies have shown that a quick return to work after childbirth is associated with early cessation of breastfeeding, more maternal depression, and poorer child health outcomes.^{22,25} The research to date on the potential

benefits of such policies has largely been conducted in other countries or in the few states that have implemented paid leave programs (California, New Jersey, and Rhode Island). These studies suggest several benefits for children and families, including longer durations of breastfeeding,²⁶ higher rates of vaccination and well-baby doctor visits,^{22,27} lower likelihood of mothers becoming depressed,²⁸ and improved educational outcomes for children.²⁹

Funding the reform

We propose providing paid parental leave as a form of federal social insurance through the Social Security system or a similar mechanism. There are several options for funding this insurance. One would be to marginally increase payroll taxes for employers and employees. Another approach would be to fund parental leave through general revenues as part of a tax reform effort, perhaps by limiting the value of itemized deductions for higher income taxpayers. (In drawing up the federal policy, Congress can learn from the three states that currently have paid leave policies, additional cities and states that are innovating in this area, and employers that have implemented parental leave programs.)

Assuring Families with Young Children Access to High-Quality Child Care

Given that most children's parents work, nonparental care is a common experience of young children in the United States today. Many parents struggle to find and afford high-quality care, especially for infants and toddlers. Yet studies using standardized and widely applied measures of quality^{3,19,30} find that most of the care received by American children during this period of rapid brain development^{6,31} is of low or mediocre quality.

Children from low- and middle-income families, on average, experience lower quality care, whereas higher income families primarily use higher quality early care and education arrangements that are unavailable or unaffordable for less affluent families.^{3,32} As a result, even though they spend a substantial proportion of their earnings on early care and education, low- and middle-income families are generally unable to purchase the highest quality services.

Although the United States does have programs that assist with child-care costs and help parents start or

continue to work,³³ they are limited in their reach and their level of support. The primary support for low-income families is the federal- and state-funded Child Care and Development Fund (CCDF), which combines federal block grants and state matching funds. Because of limited public funding, CCDF served only 15% of eligible low-income families in 2012.³⁴ The subsidies are so tightly rationed that many low-income working families do not get any assistance, whereas others get low-quality care, often for very short durations.^{35,36} Two additional federal tax programs—the Child and Dependent Care Tax Credit (CDCTC) and Dependent Care Assistance Plan—reach more people, but because only households with income tax liability are eligible for the benefits, poor and low-income households usually do not qualify for these programs. Even those who receive support get a modest subsidy relative to the costs of child care.³⁷

Funding the reform

Both the subsidy and the tax programs need to be updated and significantly expanded to better support low- and moderate-income families' access to high-quality, affordable child care. First, the federal government and the states should guarantee subsidies for licensed child care to low- and moderate-income families (that is, families with incomes of up to 250% of the federal poverty line, which was \$60,625 for a family of four in 2015) in which all parents residing with children under the age of 5 years are working. Second, the federal CDCTC should be expanded to provide support for a wider range of types of care and family income levels than the subsidy program covers. That is, it should include families whose incomes are above 250% of the federal poverty line for whom the cost of high-quality child care would still represent an unaffordable expense. Families would be expected to pay a proportion of their earnings for the cost of their children's care, and this proportion would increase progressively with income.

Begin Universal ECE when Children Are 3 Years Old

Mounting evidence in neuroscience, developmental psychology, and economics has shown how ECE can enhance children's skill development, school readiness, and longer term educational attainment and employment trajectories, with children receiving higher quality education and care demonstrating greater gains.^{6,13,17,38}

Understanding the importance of early learning, parents have been enrolling their children in school- or center-based ECE (more commonly referred to as *preschool*) at increasing rates and at earlier ages over the last 25 years. By 2013, 4.7 million 3- and 4-year-olds (that is, more than half of the children in this age group) attended preschool. However, as noted earlier, both access to preschool and its quality vary by family income.³ Publicly funded preschool increases access to ECE and narrows income-based disparities in access, but sizeable gaps still persist for children in both low- and middle-income homes. The majority of states spend a fraction of what is expended on K–12 education for preschool-age education, although the cost of ECE should generally be higher given the lower adult-to-child ratios in preschool.

Recent rigorous studies of large-scale public preschool programs in Boston and Tulsa—which have been identified as relatively high-quality programs—show substantial gains for a range of school readiness outcomes.^{39,40} These studies also indicate that ECE is beneficial for children in families of all income levels, with the greatest benefits accruing to children from more disadvantaged economic backgrounds, thus identifying ECE as a key opportunity to reduce the current sizeable gaps in school readiness. However, a recent evaluation of Tennessee's prekindergarten program found much smaller initial benefits, and these were no longer evident by the end of first grade. The findings may reflect the lower quality of the services in the Tennessee program, given that 85% of classrooms in a representative sample were found not to meet a standard of “good” overall quality.⁴¹ These results suggest that investing significantly to raise the quality of ECE programs is as critical as expanding access, particularly for children from low-income families, who stand to gain the most in reading and math from higher quality programs. Although delivering quality at scale remains a challenge, results from Boston indicate that the adoption of evidence-based, developmentally focused curricula together with classroom-based coaching may be one promising route to improving program quality.^{42,43}

As most higher income families now enroll their children in preschool by the time their children are 3 years old, the disparities in school readiness between children from high-income families and children from low- and middle-income families have widened. Given the

documented benefits of high-quality preschool for all children,^{15,44} we believe that high-quality, free, universal, public ECE in the United States should begin for children at the age of 3 years, to ensure all children have a common educational starting point.

Funding the Reform

Consistent with state and local government responsibility for primary and secondary education, we envision state and local governments taking the primary responsibility for funding, developing, and implementing universal early education. Many states are already investing in ECE because they believe that it will be cost-effective and improve educational outcomes in the long run. But it is also true that many states are struggling to find the funding to expand ECE given other pressing needs. Therefore, the federal government may need to support states through matching funds over the next 10 years to accelerate the building of high-quality, well-sequenced ECE programs that are integrated with elementary education. The federal government might also provide resources for research and development.

Remaking Head Start

The above three components will meet the needs of many American children in early childhood. But what about the most disadvantaged? Studies over several decades have documented how childhood poverty and low levels of family income and resources lead to worse child outcomes, particularly in cognitive and educational areas.^{45,46} Furthermore, early experiences of poverty;⁴⁷ persistent, chronic poverty;⁴⁸ and higher concentrations of poverty in the community⁴⁹ have been found to lead to even worse child outcomes than the experience of poverty alone.

Research indicates that intensive high-quality programs targeted to this population can address some of these disadvantages and improve child health and development. For example, the Abecedarian Project, a model program that served children in one highly impoverished community in North Carolina in the 1970s, showed very large positive effects for participants both in their school careers and through young adulthood on a wide range of important outcomes. Compared with a control group, Abecedarian participants were more likely to earn a 4-year college degree (23% versus 6%), more likely to be employed full time

at age 30 years (75% versus 53%), and less likely to become teen parents (26% versus 45%). They also showed significantly better health measurements (11% of participants had high blood pressure in their mid-30s compared with 44% for the control group; 11% of participants were severely obese in their mid-30s compared with 38% of the control group).^{50–52} Another program, the Infant Health and Development Program (IHDP), built on the Abecedarian Project's successful model at a larger scale by serving low-birth-weight newborns across eight urban study sites in the 1990s, offering frequent home visitation in the first year and full-day, high-quality early education beginning when infants were 1 year old and continuing until they turned 3 years old. IHDP significantly raised the cognitive skills of children who were from low-income families, such that income-based gaps in school readiness at age 5 years were substantially reduced.⁵³

The federal Early Head Start program—which offers home visiting and/or center-based care for children up to 3 years old—is the closest program to IHDP that has been implemented on a national scale, although its services are much less intensive and less consistently high quality.⁵⁴ An evaluation of Early Head Start in its initial years of implementation showed modest benefits in terms of improvements in children's cognitive and social-emotional development.⁵⁵

There are also several proven parenting programs.^{56,57} Although home-visiting programs have had a mixed track record, some have been found to be very effective in improving parenting and child outcomes in disadvantaged families.⁵⁸ For example, substantial evidence supports the benefits of the Nurse-Family Partnership program, which provides a series of home visits by trained nurses to disadvantaged first-time mothers in pregnancy and the first 2 years after they give birth.⁵⁹ Several other model programs have also been found to provide benefits in a comprehensive federal review of programs subject to rigorous evaluation.⁶⁰

On the basis of these findings, we propose a narrowly targeted, intensive, and comprehensive child development initiative for children who begin life in concentrated poverty or face particular adversities that need much more focused early attention and services. We believe that the nation's current Head Start and Early Head Start programs, together with the federal evidence-based home visiting programs,

can be reimagined and reintegrated to target the most disadvantaged children and families. Among the goals of this initiative is to help parents increase their ability to support the development of their children. Another goal is to provide early screening (in collaboration with Medicaid and pediatric services) to identify children with multiple and serious disadvantages and give them services or arrange services through community-based programs. Placed within the most disadvantaged geographical areas, Head Start centers would serve as community-based comprehensive service hubs that coordinate early learning with parenting supports, home-visiting services, specialized early intervention services, and medical care.

Funding the reform

Shifting Head Start to serve younger children, in conjunction with the expansion of universal preschool in the states, would require additional federal resources for Head Start even if the total number of children served through Head Start were held constant, because programs for younger children require greater funding per child.

Conclusion

The large and growing inequalities in the earliest years of a child's life, if not addressed, will add to the broader educational and economic inequalities that are a defining problem for this century. A huge gulf exists between the current set of fragmented and limited investments in early child development in the United States and what is needed for all children to have the opportunity to succeed.

The coordinated approach we propose would significantly change and integrate the current major public and private early childhood programs into a coherent whole to better meet the needs of all children while helping level the early development and learning gaps that are seen before kindergarten. Although better integration of existing services would make a substantial difference, to truly even come close to meeting the needs of all young children would require considerable additional investments, likely a multiple of what is spent now, which would be more in line with what is spent in other developmental stages (such as K–12 and postsecondary education).

We recognize that our proposal is costly. Raising public spending in early childhood to the roughly \$12,400 average expenditure per year per child in the United States⁶¹ on education for school-age children would require an additional \$223 billion annually, or 1.3% of the gross domestic product. Although our proposals would not amount to this much when fully implemented in 10 years, we believe that the United States cannot simply tinker at the edges. Because funds will be limited for the foreseeable future, we recommend starting with what is most needed or most ready for investment. That would include setting up publicly funded paid parental leave; implementing universal preschool, starting with 4-year-olds; and beginning to redirect Head Start funds to serve the most disadvantaged children starting at birth.

We note that there is also a need for investments to help reduce poverty and financial insecurity among families with children. We have not discussed important measures such as expanded child tax credits or a child allowance here, but we do acknowledge the need for such instruments.⁶⁰

It is our belief that together, such investments will make a meaningful difference in improving the life prospects of young children in America. If the United States invests in providing opportunities to overcome disadvantaged starting points, more children will be able to live up to their potential.

author affiliation

Chaudry, Robert F. Wagner Graduate School of Public Service & Institute for Human Development and Social Change, New York University; Waldfogel, School of Social Work and Columbia Population Research Center, Columbia University. Corresponding author's e-mail: ac1154@nyu.edu

supplemental material

- <https://behavioralpolicy.org/journal/>
- Supplemental Text

References

1. Organization for Economic Co-operation and Development. (2015). *Education at a glance 2015: OECD indicators*. LOCATION: Author.
2. Organization for Economic Co-operation and Development. (2015). *Enrollment in child care and preschool: OECD indicators*. LOCATION: Author.
3. Chaudry, A., Morrissey, T., Weiland, C., & Yoshikawa, H. (2016). *A strategic vision for addressing inequality in early childhood*. Manuscript in preparation.
4. Cunha, F., & Heckman, J. J. (2007). The technology of skill formation. *American Economic Review*, *97*(2), 31–47.
5. Shonko, J. P. (2010). Building a new biodevelopmental framework to guide the future of early childhood policy. *Child Development*, *81*, 357–367.
6. Knudsen, E. I., Heckman, J., Cameron, J., & Shonko, J. (2006). Economic, neurobiological, and behavioral perspectives on building America's future workforce. *Proceedings of the National Academy of Sciences, USA*, *103*, 10155–10162.
7. Duncan, G. J., & Magnuson, K. (2011). The nature and impact of early achievement skills, attention skills, and behavior problems. In G. Duncan & R. Murnane (Eds.), *Whither opportunity: Rising inequality, schools, and children's life chances* (pp. 47–70). New York, NY: Russell Sage Foundation.
8. Reardon, S. F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. In G. Duncan & R. Murnane (Eds.), *Whither opportunity: Rising inequality, schools, and children's life chances* (pp. 91–116). New York, NY: Russell Sage Foundation.
9. Bradbury, B., Corak, M., Waldfogel, J., & Washbrook, E. (2015). *Too many children left behind: The U.S. achievement gap in comparative perspective*. New York, NY: Russell Sage Foundation.
10. Reardon, S. F., & Portilla, X. A. (2015). *Recent trends in socioeconomic and racial school readiness gaps at kindergarten entry* (CEPA Working Paper No. 15-02). Available from Stanford Center for Education Policy Analysis website: <https://cepa.stanford.edu/content/recent-trends-income-racial-and-ethnic-school-readiness-gaps-kindergarten-entry>
11. Chetty, R., Friedman, J., Hilger, N., Saez, E., Schanzenbach, D., & Yagan, D. (2010). *How does your kindergarten classroom affect your earnings? Evidence from Project STAR* (NBER Working Paper No. 16381). Available from National Bureau of Economic Research website: <http://www.nber.org/papers/w16381>
12. Heckman, J. J., Moon, S., Pinto, R., Savelyev, P., & Yavitz, A. (2010). The rate of return to the HighScope Perry Preschool Program. *Journal of Public Economics*, *94*, 114–128. doi:10.1016/j.jpubeco.2009.11.001
13. Deming, D. (2009). Early childhood intervention and life-cycle skill development: Evidence from Head Start. *American Economic Journal: Applied Economics*, *1*, 111–134.
14. Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A., Klebanov, P., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, *43*, 1428–1446.
15. Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M. R., Espinosa, L. M., Gormley, W., & Zaslow, M. J. (2013). *Investing in our future: The evidence base on preschool education*. New York, NY: Foundation for Child Development.
16. Ruhm, C., & Waldfogel, J. (2012). Long-term effects of early childhood care and education. *Nordic Economic Policy Review*, *1*, 23–52.

17. McCoy, D. C., Yoshikawa, H., Ziol-Guest, K., Duncan, G. J., Schindler, H., Magnuson, K., . . . Shonko, J. P. (2015). *Long-term impacts of early childhood education programs on high school graduation, special education, and grade retention: A meta-analysis*. Manuscript submitted for publication.
18. Burchinal, M., Kainz, K., & Cai, Y. (2011). How well do our measures of quality predict child outcomes? A meta-analysis and coordinated analysis of data from large-scale studies of early childhood settings. In M. Zaslow, I. Martinez-Beck, K. Tout, & T. Halle (Eds.), *Quality measurement in early childhood settings* (pp. 11–31). Baltimore, MD: Brookes.
19. Mashburn, A., Pianta, R., Hamre, B., Downer, J., Barbarin, O., Bryant, D., & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*, 732–749.
20. Moiduddin, E., Aikens, N., Tarullo, L., West, J., & Xue, Y. (2012). *Child outcomes and classroom quality in FACES 2009*. Washington, DC: U.S. Department of Health and Human Services.
21. Waldfogel, J., & Washbrook, E. (2011). Income-related gaps in school readiness in the United States and the United Kingdom. In T. Smeeding, R. Erickson, & M. Jantti (Eds.), *Persistence, privilege, and parenting: The comparative study of intergenerational mobility* (pp. 175–208). New York, NY: Russell Sage Foundation.
22. Berger, L. M., Hill, J., & Waldfogel, J. (2005, February). Maternity leave, early maternal employment, and child health and development in the U.S. *The Economic Journal, 115*(501), F29–F47.
23. Duncan, G. J., & Magnuson, K. (2013). Investing in preschool programs. *Journal of Economic Perspectives, 27*, 109–132.
24. Laughlin, L. (2011). *Maternity leave and employment patterns of first-time mothers: 1961–2008* (Current Population Report P70-128). Retrieved from U.S. Census Bureau website: <http://www.census.gov/prod/2011pubs/p70-128.pdf>
25. Guendelman, S., Kosa, J. L., Pearl, M., Graham, S., Goodman, J., & Kharrazi, M. (2009). Juggling work and breastfeeding: Effects of maternity leave and occupational characteristics. *Pediatrics, 123*, e38–e46.
26. Appelbaum, E., & Milkman, R. (2011). *Leaves that pay: Employer and worker experiences with paid family leave in California*. Washington, DC: Center for Economic and Policy Research.
27. Daku, M., Raub, A., & Heymann, J. (2012). Maternal leave policies and vaccination coverage: A global analysis. *Social Science & Medicine, 74*, 120–124.
28. Chatterji, P., & Markowitz, S. (2012). Family leave after childbirth and the mental health of new mothers. *Journal of Mental Health Policy and Economics, 15*, 61–76.
29. Corneiro, P., Løken, K. V., & Salvanes, K. G. (2011). *A flying start? Maternity leave benefits and long run outcomes of children* (IZA Discussion Paper No. 5793). Retrieved from Institute for the Study of Labor website: <http://ftp.iza.org/dp5793.pdf>
30. Weiland, C., Ulvestad, K., Sachs, J., & Yoshikawa, H. (2013). Associations between classroom quality and children's vocabulary and executive function skills in an urban public prekindergarten program. *Early Childhood Research Quarterly, 28*, 199–209.
31. Shonko, J. P., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
32. Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly, 23*, 69–93.
33. Crawford, A. (2006). The impact of child care subsidies on single mothers' work effort. *Review of Policy Research, 23*, 699–711.
34. Chien, N. (2015). *Estimates of child care eligibility and receipt for fiscal year 2012* [Issue brief]. Retrieved from U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation website: <https://aspe.hhs.gov/sites/default/files/pdf/153591/ChildEligibility.pdf>
35. Henly, J., Sandstrom, H., Claessens, A., Pilarz, A., Gelatt, J., Kim, J., & Healy, O. (2015). *Determinants of subsidy stability and child care continuity: Final report for the Illinois–New York Child Care Research Partnership*. Retrieved from Urban Institute website: <http://www.urban.org/research/publication/determinants-subsidy-stability-andchild-care-continuity>
36. Herbst, C., & Tekin, E. (2010). Child care subsidies and child development. *Economics of Education Review, 29*, 618–638.
37. Tax Policy Center. (XXXX). Quick facts: Child and Dependent Care Tax Credit (CDCTC). Retrieved from http://www.taxpolicycenter.org/press/quickfacts_cdctc.cfm
38. Bartik, T. J., Gormley, W., & Adelstein, S. (2012). Earnings benefits of Tulsa's pre-K program for different income groups. *Economics of Education Review, 31*, 1143–1161.
39. Weiland, C., & Yoshikawa, H. (2013). Impacts of a pre-kindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development, 84*, 2112–2130.
40. Gormley, W. T., Gayer, T., Phillips, D., & Dawson, B. (2005). The effects of universal pre-K on cognitive development. *Developmental Psychology, 41*, 872–884.
41. Farran, D. C., Hofer, K., Lipsey, M., & Bilbrey, C. (2014, March). *Variations in the quality of TN-VPK classrooms*. Presentation at the Society for Research on Educational Effectiveness, Washington, DC.
42. Clements, D. H., & Sarama, J. (2008). Experimental evaluation of the effects of a research-based preschool mathematics curriculum. *American Educational Research Journal, 45*, 443–494.
43. Morris, P. A., Mattera, S., Cattells, N., Bangser, M., Bierman, K. L., & Raver, C. C. (2014). *Impact findings from the Head Start CARES demonstration*. New York, NY: MDRC.
44. Arteaga, I., Humpage, S., Reynolds, A., & Temple, J. (2014). One year of preschool or two: Is it important for adult outcomes? *Economics of Education Review, 40*, 221–237.
45. Dahl, G. B., & Lochner, L. (2012). The impact of family income on child achievement: Evidence from the earned income tax credit. *The American Economic Review, 102*, 1927–1956.
46. Duncan, G. J., Morris P. A., & Rodrigues, C. (2011). Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments. *Developmental Psychology, 47*, 1263–1279.
47. Ratcliffe, C., & McKernan, S. (2012). *Child poverty and its lasting consequences*. Washington, DC: Urban Institute.
48. Duncan, G. J., Ziol-Guest, K., & Kalil, A. (2010). Early-childhood poverty and adult attainment, behavior, and health. *Child Development, 81*, 306–325.
49. Wodtke, G. T., Harding, D. J., & Elwert, F. (2011). Neighborhood effects in temporal perspective: The impact of long-term exposure to concentrated disadvantage on high school graduation. *American Sociological Review, 76*, 713–736.
50. Campbell, F., Pungello, E., Burchinal, M., Kainz, K., Pan, Y., Wasik, B., . . . Ramey, C. (2012). Adult outcomes as a function of an early childhood educational program: An Abecedarian Project follow-up. *Developmental Psychology, 48*, 1033–1043.
51. Campbell, F., Ramey, C., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6*, 42–57.
52. Campbell, F. A., Conti, G., Heckman, J. J., Moon, S. H., Pinto, R., Pungello, E. P., & Pan, Y. (2014, March 28). Early childhood investments substantially boost adult health. *Science, 343*, 1478–1474.

53. Duncan, G. J., & Sojourner, A. J. (2013). Can intensive early childhood intervention programs eliminate income-based cognitive and achievement gaps? *Journal of Human Resources, 48*, 945–968.
54. Love, J., Kisker, E., Ross, C., Raikes, H., Constantine, J., Boller, K., . . . Vogel, C. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental Psychology, 41*, 885–901.
55. Love, J., Chazan-Cohen, R., Raikes, H., & Brooks-Gunn, J. (2013). What makes a difference: Early Head Start evaluation findings in a developmental context. *Monographs of the Society for Research in Child Development, 78*(1).
56. Dozier, M., Peloso, E., Lewis, E., Laurenceau, J. P., & Levine, S. (2008). Effects of an attachment-based intervention on the cortisol production of infants and toddlers in foster care. *Development and Psychopathology, 20*, 845–859.
57. Landry, S. H., Smith, K. E., Swank, P. R., & Guttentag, C. (2008). A responsive parenting intervention: The optimal timing across early childhood for impacting maternal behaviors and child outcomes. *Developmental Psychology, 44*, 1335–1353.
58. Avellar, S., Paulsell, D., Sama-Miller, E., Del Grosso, P., Akers, L., & Kleinman, R. (2015). *Home visiting evidence of effectiveness review* [Executive summary]. Washington, DC: U.S. Department of Health and Human Services.
59. Olds, D., Eckenrode, J., Henderson, C., Jr., Kitzman, H., Powers, J., Cole, R., . . . Luckey, D. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: 15-year follow-up of a randomized trial. *Journal of the American Medical Association, 278*, 637–643.
60. Garfinkel, I., Harris, D., Waldfogel, J., & Wimer, C. (2016). *Doing more for our children*. NY, New York: Century Foundation.
61. Kena, G., Musu-Gillette, L., Robinson, J., Wang, X., Rathbun, A., Zhang, J., . . . Velez, E. D. (2015). *The condition of education 2015* (NCES 2015-144). Retrieved from the U.S. Department of Education, National Center for Education Statistics website: <http://nces.ed.gov/pubs2015/2015144.pdf>