

The Economic Benefits of High-Quality Early Care Ray Noonan, Nicole Updegrove, and Daniel Long, Ph.D.

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All children should have the opportunity to reach their full potential, which includes entering kindergarten ready to learn. At the same time, parents should be able to go to work with the comfort that their children are safe, nurtured, and learning. For many families, child care is a crucial component of this vision. Access to high-quality, affordable early childhood education boosts the state's economy—in the short term by letting parents continue to work and in the long term by improving lifelong outcomes for children, thereby better preparing the next generation for work and for life. Nobel Prize-winning economist James Heckman has estimated that quality early care and education programs can generate \$7.30 of benefits for every \$1 spent.¹

Although child care represents a key foundation for the state economy, Connecticut lacks sufficient child care resources.² The state's economic climate threatens to exacerbate these needs. In addition to a projected \$5 billion deficit over the next two years, Connecticut faces rising income inequality, vast disparities in education and employment, and a shrinking share of high-wage jobs.³

Policymakers have responded to these challenges by proposing to roll back child care supports. Despite evidence supporting the importance of the first years of a child's life, the state currently underfunds Care 4 Kids, the state's early care subsidy for low-income families, by \$33 million.⁴ Over the next two years, the Governor proposes cutting these subsidies by an additional 10 percent.⁵ Budgets proposed by the Democratic and Republican legislative leadership, while providing more funding for child care than the Governor, would still leave thousands of families waiting for support.⁶ A more sound fiscal strategy would protect investments in our youngest children to ensure that they can succeed in school and beyond.

This research brief is the first in a two-part series exploring the current state of early care and education in Connecticut. In this brief, we:

1. Estimate the value of Connecticut's current early child care system to children, parents, and our state economy;
2. Illustrate the cost of failure to fully fund the Care 4 Kids subsidy; and
3. Discuss how much a universal high-quality child care system would contribute to Connecticut's economy.¹

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The Economic Impact of Early Care

Research illustrates that access to child care benefits Connecticut’s economy in both the short and long term. In the short term, early care allows more parents to work, generates income for the early care workforce to reinvest in the state, and contributes to the cash flow between child care providers and other businesses.⁷ In the long term, child care promotes the social and cognitive growth of children, increases a child’s level of education as an adult, and increases lifetime earnings—helping to address the disparities outlined above—ultimately increasing state income tax revenue and reducing expensive social ills, such as crime and chronic health problems.^{8,9}

Short-Term Economic Impact of Early Care

Part of early care’s economic short-term impact (over the next year) stems from enabling parents to work and from employing child care workers who then contribute to the economy. The University of Connecticut reported that in 2002, the child care industry contributed \$1.28 billion to the state economy by allowing parents to work.¹⁰ In 2015, more than 250,000 adults in Connecticut lived in households with a high need for child care—either single-parent working households or two-parent households where both parents worked.¹¹ Furthermore, nearly 29,000 adults were employed in the state’s early care industry, earning an average wage of \$14,700 per year.¹²

Despite the well-documented benefits of the child care industry, Connecticut has recently made it more difficult for low-income working parents to afford child care. Last fall, the state closed Care 4 Kids, the state’s child care subsidy for low-income working parents, to almost all new applications.¹³ Most proposed budgets would keep the program closed from July 2017 to January 2019.¹⁴ We estimate that if policymakers follow through with these proposals, then they could **force more than 1,500 low-income parents to leave their jobs to care for their children.**¹⁵ Many of these parents are already struggling to get by in the low-wage restaurant, retail, and nursing home industries.¹⁶ Jeopardizing the economic security of these families could remove **\$34.7 million** in annual income from the economy.¹⁷ This is in addition to the estimated **\$17.4 million** in lost annual income from the **783 low-income parents that will have to leave the workforce** by the end of Fiscal Year 2017.

Keeping Care 4 Kids Closed Would Cost Economy Millions	
Estimated Consequences of Care 4 Kids Closure	
July 2017 – January 2019	
Decrease in labor force	1,566
Total lost annual income	\$34,763,146
September 2016 – June 2017	
Decrease in labor force	783
Total lost annual income	\$17,381,573
See technical appendix for details.	

The short-term impact of the early care industry extends to the goods and services that it purchases from other industries. The University of Connecticut study estimated that in 2001, the formal early care sector spent \$640 million on other industries, including grounds maintenance, craft products, and toys, among other goods.¹⁸ About \$427 million of this spending was estimated to purchase goods produced in Connecticut.¹⁹

Long-term Economic Impact of Early Care

In the second brief in this series, we will explain in detail the Abecedarian Project and CARE Project, two high-quality early care programs serving disadvantaged populations.²⁰ For our purposes here, the programs provided individualized continuous care and included staff from the local community, free transportation to and from the centers, and on-site medical care.²¹ Nobel Prize-winning economist James Heckman estimated that these programs generated \$7.30 of benefits for every \$1 spent, thanks to improved educational, behavioral, and economic outcomes over participants' lives.²² (The second brief also discusses a third program, the Perry Preschool Project, which was not included in Heckman's economic valuation. Heckman estimated returns for the Perry Preschool Project to be even higher; we use the \$7.30 figure to provide a more conservative value estimate.²³)

Applying this analysis to Connecticut, we calculate the long-term economic value provided by the state's early care system. These long-term benefits come in many forms, such as increased earnings for parents and children; increased employment and high school graduation rates; fewer arrests; less drug use; fewer instances of high blood pressure or hypertension; and higher rates of healthy activities, such as physical exercise or eating nutritious food.²⁴

We estimate the long-term economic benefits of Connecticut's child care system in three scenarios: (1) if all children currently enrolled in NAEYC-accredited programs are receiving high-quality care; (2) if Care 4 Kids remained closed for Fiscal Year 2018; and (3) if the state provided enough high-quality care to fulfill its residents' needs.

(1) If all children currently enrolled in NAEYC-accredited programs are receiving high-quality care

Early care and education programs accredited by the National Association for the Education of Young Children (NAEYC) are among the highest quality programs in the state, so if any Connecticut programs meet the standards of the best national models, we would expect them to be NAEYC-accredited ones. In the second brief in this series, we compare the quality of NAEYC-accredited programs with that of the Perry Preschool, Abecedarian, and CARE projects. Here, we estimate the economic benefits the state is gaining from these high-quality programs if they do meet the standards of the flagship programs and thus bring \$7.30 in returns estimated by Heckman.

We calculate that if NAEYC-accredited programs do meet the high standards of the flagship programs, these programs alone at current enrollment contribute **\$2.35 billion** to Connecticut's economy over the long term in the form of increased earnings, employment, graduation rates, and health outcomes, as well as reduced crime.²⁵ About 77 percent (\$1.81 billion) of this comes from high-quality preschool; the other 23 percent (\$537 million) comes from high-quality infant-toddler care.

Calculation

Using Heckman’s Abecedarian/CARE study, we assume that \$1 invested in high-quality child care today returns \$7.30 in long-term benefits to society. We count child care institutions accredited by the NAEYC as high-quality and use the average cost of care in 2015 from USA Child Care Aware (\$14,079 for infant/toddler care and \$11,669 for preschool care).²⁶ Thus, we calculate long-term benefits of Connecticut’s infant/toddler care system by performing the following calculation:

$$\begin{aligned} \text{long term benefit} &= \# \text{ enrolled in NAEYC accredited care} * \text{avg. cost} * \text{return on investment} \\ \text{long term benefit} &= 5,232 * \$14,079 * \$7.30 = \boxed{\$537,727,694} \end{aligned}$$

For preschool care, the calculation uses the same formula. There are 21,273 preschoolers enrolled in NAEYC-accredited care:

$$\text{long term benefit} = 21,273 * \$11,669 * \$7.30 = \boxed{\$1,812,112,850}$$

Adding these two numbers results in a total long-term benefit of \$2,349,840,545 for the state — from just the 34 percent of child care enrollment that is NAEYC-accredited. This figure does not include *any* benefits from child care centers that are not NAEYC-accredited.

Our calculation exceeds the University of Connecticut’s \$1.9 billion estimate because we estimate long-term effects, while the University of Connecticut focused only on its immediate impacts.²⁷ That said, spending \$1 in early care today does not immediately produce \$7.30 in returns tomorrow, nor do those returns all come in the form of a deposit in a bank account. Rather, these returns accumulate over decades and come as increased incomes, reduced crime rates, fewer instances of heart disease and diabetes, and other benefits.

(2) if Care 4 Kids remained closed for Fiscal Year 2018

On the other hand, keeping Care 4 Kids closed for Fiscal Year 2018 (July 2017 to July 2018) would cost **\$81.9 million in long-term benefits for Connecticut—almost twice the short-term savings**.²⁸ Using the average monthly decline in children enrolled in Care 4 Kids since the program was closed, we estimate that about 2,650 fewer children will be enrolled in Care 4 Kids in July 2018 compared to July 2017. See Figure 2 for the magnitude of what is lost.

Calculation

As detailed in the technical appendix, we estimate that if Care 4 Kids remains closed from July 2017 to July 2018, then the program will lose 1,525 infant and toddler enrollees and 1,129 preschool enrollees. We assume that children in families receiving Care 4 Kids are equally as likely to be enrolled in NAEYC-accredited programs as the overall population of children in care. Thus, since 5,232 of 17,143 (30.5 percent) total infant and toddler care enrollees are in NAEYC-accredited programs, we assume that 30.5 percent of Care 4 Kids infant and toddler enrollees are in NAEYC-

accredited programs. Similarly, since 21,273 of 60,062 (35.4 percent) preschool care enrollees are in NAEYC-accredited programs, we assume that 35.4 percent of Care 4 Kids preschool enrollees are in such programs.

We use the same formula as before to calculate the long-term benefits lost because fewer children enrolled in Care 4 Kids. For infants and toddlers:

$$\begin{aligned} \text{long term benefit} &= \# \text{ enrolled in NAEYC accredited care} * \text{avg. cost} * \text{return on investment} \\ \text{long term benefit} &= (1,525 * \frac{5,232}{17,143}) * \$14,079 * \$7.30 = \boxed{\$47,834,960.86} \end{aligned}$$

For preschoolers:

$$\text{long term benefit} = (1,129 * \frac{21,273}{60,062}) * \$11,669 * \$7.30 = \boxed{\$34,062,725.31}$$

Adding these two numbers shows that keeping Care 4 Kids closed from July 2017 to July 2018 would cost the state \$81,897,686.17 in long-term benefits.

(3) if the state provided enough high-quality care to fulfill its residents' needs

Residents' need for child care outstrips the available slots. Data from the United Way of Connecticut and the Office of Early Childhood show that Connecticut needs more than 50,000 additional slots to provide enough child care for every young child who needs it.^{29, 30} **Providing enough high-quality child care to meet Connecticut's need would provide \$13.4 billion in long-term benefits to the state economy.**

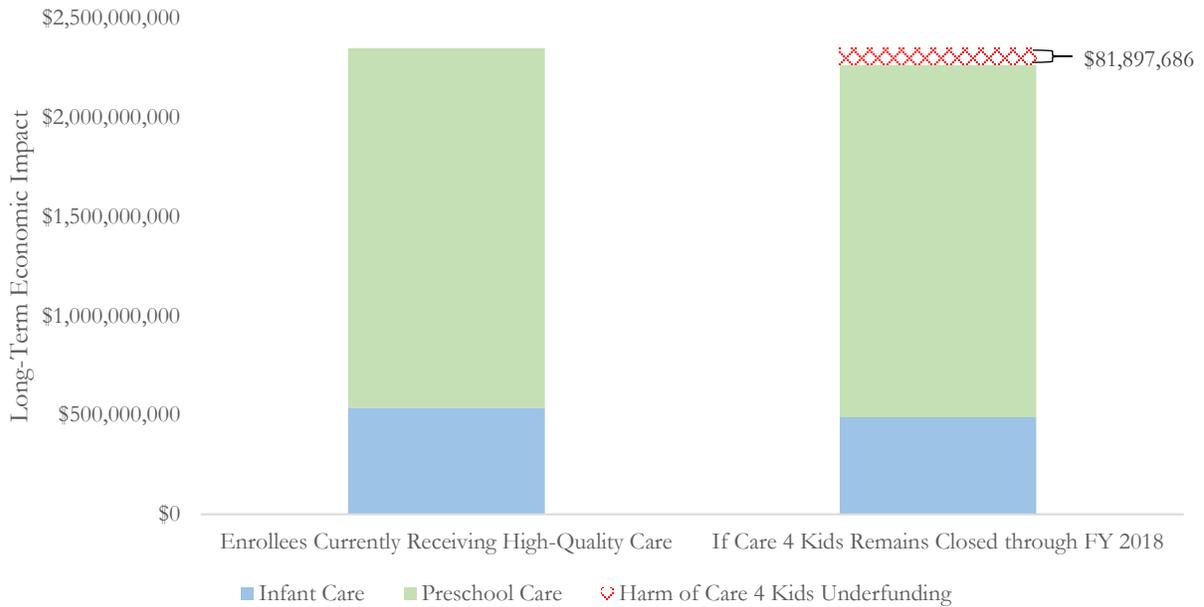
According to the Office of Early Childhood's Unmet Needs report, Connecticut needs 69,124 slots for infant/toddler care and 73,688 slots for preschool care to meet demand. At an average annual cost of \$14,079 for infant/toddler care and \$11,669 for preschool care, we can calculate the long-term benefits of providing quality care for all of these slots:

$$\text{long term benefit} = (69,124 * \$14,079 * \$7.30) + (73,688 * \$11,669 * \$7.30) = \boxed{\$13.38 \text{ billion}}$$

These calculations likely underestimate the overall value of Connecticut's child care system for two reasons:

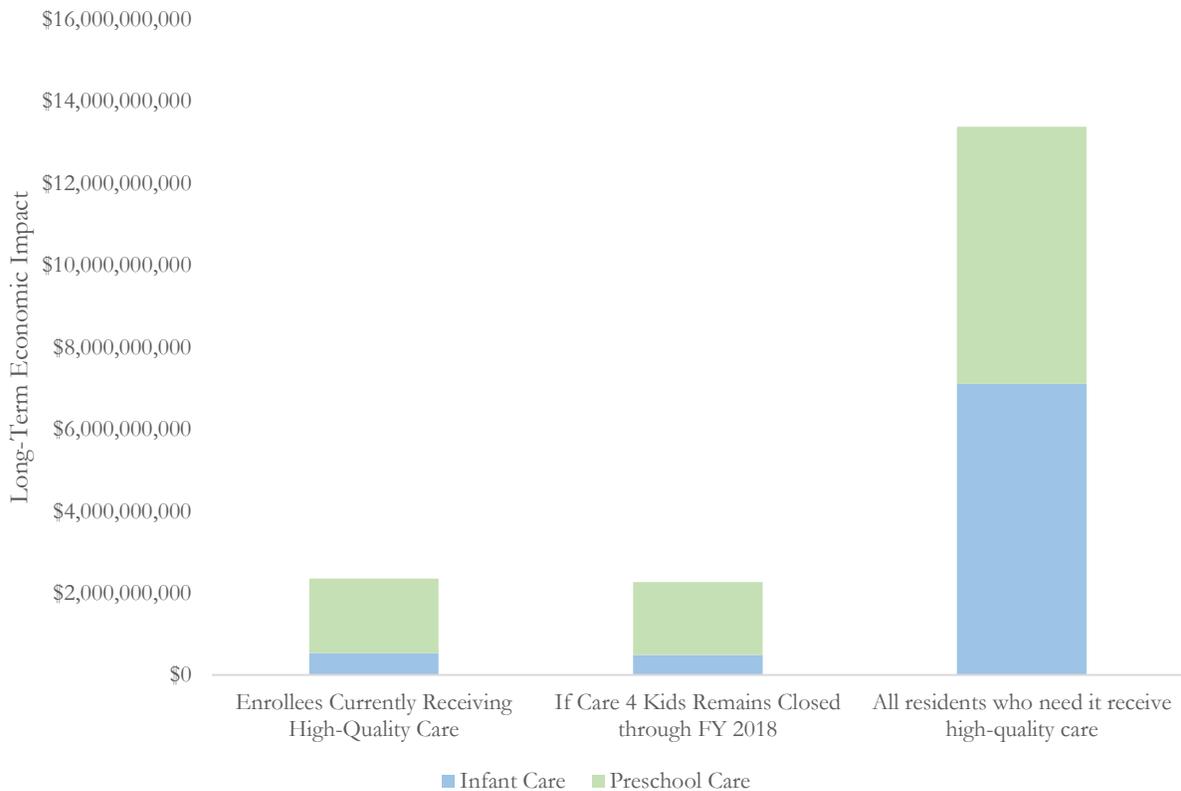
1. They do not account for child care's immediate economic benefits—stimulating the economy by freeing parents to work and putting more money in their pockets.
2. They assume that lower-quality care has no long-term economic benefit. In reality, it likely provides more modest benefits.

Figure 1. Proposed Care 4 Kids Cuts Would Cost State \$81.9 Million



Source: Connecticut Voices for Children analysis.

Figure 2. Fully Meeting Child Care Need Would Contribute \$13 Billion to State



Source: Connecticut Voices for Children analysis

Conclusion

Building thriving communities tomorrow requires strong foundations today. An essential component of Connecticut's fiscal foundation is its early care system. Our current early care system contributes billions to the state economy. Policymakers' proposed underfunding of Care 4 Kids brings an estimated long-term price tag of more than \$120 million, negating the short-term cost savings for the state.

Moreover, if Connecticut instituted a high-quality early childhood education system for all who need it, it would contribute over ten billion dollars more to the state economy. Building a strong, coordinated system would require a number of comprehensive reforms: a vast expansion of state-supported programs, blending and braiding funding streams and program requirements, investing in infant and toddler care, helping teachers pursue higher education, increasing teacher compensation, and constant quality assessment and improvement. The best available research shows that such investment would more than pay for itself in returns for our workforce and our economy.

Technical Appendix: the Impact of the Care 4 Kids Closure

We calculate the number of parents who would not be able to work if Care 4 Kids remains closed by drawing upon research from Andresen and Havnes.³¹ According to Andresen and Havnes, research of the U.S. child care system generally finds that an increase of 1 percent in the price of child care leads to a 0 to 0.36 percent decrease in the labor supply.³² We take the midpoint of these estimates and assume that a 1 percent increase of the price of child care leads to a 0.18 percent decrease in the labor supply. This is a conservative estimate for two reasons:

- The literature tends to examine single and two-parent households,^{33,34} whereas Care 4 Kids families are more likely to be single-parent households.³⁵
- Child care cost increases are more impactful for low-income families, so we would expect a higher percent of parents to leave the labor force than that which we put in our calculations.

Using the 0.18 estimate to calculate the number of parents who would not be able to work if Care 4 Kids remains closed, we calculate (1) the extent to which keeping Care 4 Kids closed increases child care prices for otherwise eligible parents, and (2) the number of parents affected by keeping Care 4 Kids closed.

We calculate the extent to which keeping Care 4 Kids closed increases child care prices by comparing average child care costs to Care 4 Kids subsidies. For infant/toddler care, we use full-time center care costs and Care 4 Kids subsidies in north-central Connecticut.³⁶ According to 2-1-1 Child Care, the average cost of full-time infant/toddler center care is \$286 per week.³⁷ According to Care 4 Kids, the 2017 reimbursement rate for full-time infant/toddler center care in north-central Connecticut is \$201 per week.³⁸ Thus, the percent increase in the cost of infant/toddler care without Care 4 Kids is $\$286/(\$286 - \$201) = 336.47\%$. For preschool care, we calculate the percent increase in cost to be $\$234/(\$234 - \$160) = 316.22\%$. Thus, we estimate the predicted decrease in the labor force among parents eligible for Care 4 Kids with infants or toddlers to be $336.47\% * 0.18 = 60.56\%$. For those with preschoolers, the predicted decrease is $316.22\% * 0.18 = 56.92\%$.

To estimate the number of parents affected by keeping Care 4 Kids closed, we first calculate the decrease in number of children in quality care if the budget maintains the closure of Care 4 Kids to most new applicants through mid-Fiscal Year 2019 (the end of December 2018), as described in the Governor's proposed budget. We first calculate a rate of decline in Care 4 Kids enrollment to extend from July 2017 (when the new fiscal year begins) to January 1, 2019. We base this rate of decline on Care 4 Kids enrollment for infants, toddlers, and preschoolers from April 2016 to April 2017. This is a conservative estimate for two reasons:

1. This represents a period during which the program was closed only for 8 of 12 months. In reality, we expect the future annual rate of program enrollment declines to be higher.
2. In August 2016, the program closed only to Priority Group 4. Priority Groups 2 and 3 remained open until December 2016. Thus, we expect the future rate of declines in enrollment to be greater than it was during this year.

Furthermore, we examined infants, toddlers, and preschoolers only in *regulated care settings*. We examined only regulated care settings because without Care 4 Kids subsidies, children whose parents cannot afford regulated care will still be cared for by someone – most likely a family member or friend without professional training in early childhood education. The major difference is that the

provider – whether a parent now staying home from work, or someone else – will no longer receive financial support from the state.

This calculation also requires an assumption that Care 4 Kids-eligible children who do not receive subsidies will be unable to attend quality care settings. Given that center-based toddler care in Connecticut costs an average of \$11,669 per year and that a family of three affected by the subsidy closure earns at most \$45,609 per year (the maximum eligibility threshold), this seems like a safe assumption.^{39,40}

We calculated the average monthly decline as follows. Note that all figures represent regulated care settings.⁴¹

	Infant/Toddler	Preschool
Care 4 Kids enrollment, April 2016	5,973	5,942
Care 4 Kids enrollment, April 2017	4,448	4,813
Number of months between April 2016 and April 2017	12	
Average monthly decline	$(4,448 - 5,973) / 12 =$ -127.08	$(4,813 - 5,942) / 12 =$ -94.08

We then extended that monthly decline from July 2017 to January 1, 2019 (through December 2018):

	Infant/Toddler	Preschool
Care 4 Kids enrollment, April 2017	4,448	4,813
Number of months between April 2017 and July 2017	3	
Projected decline from April 2017 to July 2017	$3 * -127.08 = -381.25$	$3 * -94.08 = -282.25$
Projected enrollment, July 2017	$4,448 - 381.25 = 4,066.75$	$4,813 - 282.25 = 4,530.75$
Number of months between July 2017 and January 2019	18	
Projected decline from July 2017 to January 2019	$18 * -127.08 = -2,287.5$	$18 * -94.08 = -1,693.5$
Projected enrollment, January 2019	$4,066.75 - 2,287.5 = 1,779.25$	$4,530.75 - 1,693.5 = 2,837.25$

(Note that Care 4 Kids remains open to current TANF beneficiaries (Priority Group 1). As of December 2016, one-sixth of Care 4 Kids recipients qualified for the subsidy through TANF eligibility. We assume that at least that many infants, toddlers, and preschoolers in regulated care will still remain eligible for and receive Care 4 Kids by the end of December 2018. In December 2016, there were 5,286 infants and toddlers and 4,887 preschoolers enrolled in regulated care settings through Care 4 Kids. One-sixth of these children is 881 infants and toddlers and 814.5 preschoolers. These figures represent a “floor,” below which we do not expect enrollment to drop. However, the enrollment we project on January 1, 2019 is higher than this floor, so we use our projected enrollment.)

Once we calculate the predicted decline in number of children in regulated care, we assume 1.5 children per Care 4 Kids-eligible family and 1 parent affected per family (in two-parent families, it is unlikely that both parents stop working if the family loses its subsidy). Using the predicted percent decrease in the labor force that we calculated earlier, we calculate the number of parents no longer able to work because Care 4 Kids would remain closed:

	Infant/Toddler	Preschool
Projected decline from July 1, 2017 to January 1, 2019	-2,287.5	-1,693.5
Number of parents affected	(2,287.5 decline in enrollment / 1.5 children per family) * 1 parent per family affected = 1,525	(1,693.5 decline in enrollment / 1.5 children per family) * 1 parent per family affected = 1,129
Percent decrease in working parents	60.56%	56.92%
Number of parents no longer able to work because Care 4 Kids remains closed	1,525 * 60.56% = 923.61	1,129 * 56.92% = 642.62

To calculate the amount of income lost because these $923.61 + 642.62 = 1,566$ parents leave the labor force, we use Census Public Use Microdata Sample data to calculate the average individual income of parents in working families (Priority Group 4) eligible for Care 4 Kids. We define eligible households as those with (1) at least one child less than 5 years old, (2) all parents in the household working, and (3) household income within the Care 4 Kids income eligibility guidelines.⁴² We calculated the average individual income to be about \$22,195 per year. Thus, the amount of income lost because Care 4 Kids would remain closed to Priority Group 4 parents is equal to $(923.61 + 642.62) * \$22,195.48 = \underline{\$34,763,146}$. Because Care 4 Kids is also closed to Priority Groups 2 and 3, the closure affects even more parents and removes even more income from the economy.

To estimate the decline in enrollment from when the state closed Care 4 Kids through the end of Fiscal Year 2017, we perform similar calculations to the above. Fiscal Year 2017 ends on June 30, 2017.

	Infant/Toddler	Preschool
Number of months between September 2016 and June 2017	9	
Predicted change in enrollment, September 2016 to June 2017	$9 * -127.08 = 1,143.75$	$9 * -94.08 = 846.75$
Predicted number of parents leaving the workforce	(1,143.75 decline in enrollment / 1.5 children per family) * 1 parent affected per family = 762.5	(846.75 decline in enrollment / 1.5 children per family) * 56.92% reduction in workforce = 564.5
Number of parents no longer able to work because Care 4 Kids remains closed	$762.5 * 60.56\% = 461.81$	$564.5 * 56.92\% = 321.31$
Total lost income	$(461.81 + 321.31) * \$22,195 = \mathbf{\$17,381,573}$	

To calculate the estimated enrollees lost from July 2017 to July 2018, we calculate a decline of (12 months * 127.08 enrollees lost per month) = 1,525 for infants and toddlers and (12 months * 94.08 enrollees lost per month) = 1,129 for preschoolers.

Citations

- ¹ Jorge Luis Garcia et. al. *The Life-cycle Benefits of an Influential Early Childhood Program*. December 2016: https://heckmanequation.org/assets/2017/01/Garcia_Heckman_Leaf_etal_2016_life-cycle-benefits-ecp_r1-p.pdf.
- ² Daniel Long and Nicole Updegrave. *Care 4 Kids in Connecticut: The Impact of Program Closure on Children, Parents, and Providers*. March 2017. Retrieved from: <http://www.ctvoices.org/C4Kclosing>.
- ³ Ray Noonan and Derek Thomas. *The State of Working Connecticut 2016*. September 2016. Retrieved from: <http://www.ctvoices.org/sites/default/files/econ16sowctfullreport.pdf>.
- ⁴ Daniel Long and Nicole Updegrave. *Care 4 Kids in Connecticut: The Impact of Program Closure on Children, Parents, and Providers*.
- ⁵ Derek Thomas et al., *The Governor's Budget – A Comparison to Current Year Appropriations*. February 2017. Retrieved from: <http://www.ctvoices.org/sites/default/files/Governor's%20Budget%20FINAL%202017.pdf>.
- ⁶ Ray Noonan, Derek Thomas, and Ellen Shemitz. *A Better Approach to Budgeting: Concerns about the Austerity Approach of State Budget Proposals*. May 2017. Retrieved from: <http://www.ctvoices.org/sites/default/files/Three%20Austerity%20Budgets%20Narrow.pdf>.
- ⁷ Connecticut Center for Economic Analysis. *The Economic Impact and Profile of Connecticut's ECE Industry*. September 2004. Retrieved from: <http://www.ctvoices.org/sites/default/files/ece04econimpactfull10.pdf>.
- ⁸ Jorge Luis Garcia et. al. *The Life-cycle Benefits of an Influential Early Childhood Program*.
- ⁹ Sneha Elango, Jorge Luis Garcia, James Heckman, and Andres Hojman. *Early Childhood Education*. November 2015. Retrieved from: <https://heckmanequation.org/resource/early-childhood-education/>.
- ¹⁰ Connecticut Center for Economic Analysis. *The Economic Impact and Profile of Connecticut's ECE Industry*. September 2004. Retrieved from: <http://www.ctvoices.org/sites/default/files/ece04econimpactfull10.pdf>. In March 2017 dollars. Inflated using CPI-U. The original report used 2001 dollars. Page iii and 16.
- ¹¹ Connecticut Voices analysis of Census 2015 5-Year Public Use Microdata Sample data.
- ¹² *Ibid.*
- ¹³ Daniel Long and Nicole Updegrave. *Care 4 Kids in Connecticut: The Impact of Program Closure on Children, Parents, and Providers*.
- ¹⁴ Ray Noonan et al., *A Better Approach to the State Budget: Analyzing Four Budget proposals*. May 2017: <http://www.ctvoices.org/FourBudgets2017>.
- ¹⁵ Connecticut Voices analysis of Census 2015 5-Year Public Use Microdata Sample data. See technical appendix for details.
- ¹⁶ *Ibid.*
- ¹⁷ *Ibid.*
- ¹⁸ In March 2017 dollars. Inflated using CPI-U. The original report used 2001 dollars. *Ibid.*, Page 11.
- ¹⁹ *Ibid.*, page 12. The UCONN study reports that \$214 million of the \$321 million (in 2001 dollars) in goods purchased by the ECE industry are produced in Connecticut. Using their estimate of \$460 million in purchases by the formal ECE industry, we calculate \$307 million in purchases produced in Connecticut by the entire ECE formal sector ($214 / 321 = x / 460$). \$307 million in 2001 dollars is \$427 million in March 2017 dollars.
- ²⁰ Jorge Luis Garcia et. al. *The Life-cycle Benefits of an Influential Early Childhood Program*. Appendix A, Page 1. Retrieved from: http://www.nber.org/data-appendix/w22993/abc_comprehensivecba_appendix-pub_2016-12-19a_jld.pdf.
- ²¹ *Ibid.*, page 16-20.
- ²² Garcia et. al., *The Life-cycle Benefits of an Influential Early Childhood Program*.
- ²³ James Heckman et al. *The Rate of Return to the High/Scope Perry Preschool Program*. 2010.
- ²⁴ *Ibid.*, page 20-24; The Heckman Equation. *Abecedarian & Health: Improve Health Outcomes with Quality Early Childhood Programs that Include Health and Nutrition*. Retrieved from: <https://heckmanequation.org/resource/research-summary-abecedarian-health/>.
- ²⁵ Jorge Luis Garcia et. al. *The Life-cycle Benefits of an Influential Early Childhood Program*. Page 20-24. Enrollment as of January 1, 2016 according to United Way.
- ²⁶ Child Care Aware. *Parents and the High Cost of Child Care*. 2016: http://usa.childcareaware.org/wp-content/uploads/2016/12/CCA_High_Cost_Appendices_2016.pdf.

²⁷ The CCEA says that they “do not estimate the economic impact of these long run effects of ECE. The focus here is on the immediate or current impacts of ECE as an economic sector in the Connecticut economy.” See Connecticut Center for Economic Analysis, *The Economic Impact and Profile of Connecticut’s ECE Industry*, page 3.

²⁸ The Governor saves \$33 million in fiscal year 2018 by underfunding Care 4 Kids. His budget cuts an additional \$9.7 million in fiscal year 2018. Thus, his total estimated savings for fiscal year 2018 are \$33 million + \$9.7 million = \$42.7 million.

²⁹ Report provided via email by Valerie Grant, 211 Child Care, United Way. Data are point-in-time counts from January of each year.

³⁰ Child Trends and Azavea. *Unmet Needs Report*. 2016 draft.

³¹ Martin Eckhoff Andresen and Tarjei Havnes. *Child Care and Parental Labor Supply: A New Look*. August 2016: <https://www.sv.uio.no/econ/personer/vit/martiea/anewlook.pdf>. This study examines both U.S. and international research. Page 5 of this study summarizes the U.S. research on the effects of the cost of child care on parental labor supply and finds elasticities between 0 and .36. Blau and Currie (2004) and Akbundu and Plantenga (2015), see references below, provide additional U.S. research on estimates of the effect of child care costs on labor supply.

³² *Ibid*.

³³ David Blau and Janet Currie. *Preschool, Day Care, and Afterschool Care: Who’s Minding the Kids*. August 2004: <http://www.nber.org/papers/w10670.pdf>

³⁴ Yusuf Emre Akgunduz and Janneke Plantenga. *Childcare Prices and Maternal Employment: a Meta-Analysis*. November 2015. Tjalling C. Koopmans Research Institute Discussion Paper Series 15-14.

³⁵ Connecticut Voices analysis of Census 2015 5-Year Public Use Microdata Sample data.

³⁶ Upon recommendations of Harriet Feldlaufer, Office of Early Childhood. Ms. Feldlaufer indicated that this figure was relatively representative of the state as a whole.

³⁷ 2-1-1 Childcare. *Average Child Care Cost*. April 2017: <http://www.211childcare.org/reports/average-child-care-cost/>.

³⁸ Care 4 Kids. *2017 Weekly Provider Reimbursement Rates*. 2017: <http://www.ctcare4kids.com/files/2012/04/2017-C4K-Reimbursement-Rates-Revised-April-1-2017.pdf>.

³⁹ Child Care Aware. *Parents and the High Cost of Child Care*. 2016: http://usa.childcareaware.org/wp-content/uploads/2016/12/CCA_High_Cost_Appendices_2016.pdf.

⁴⁰ CT Care 4 Kids. *Income Guidelines*. <http://www.ctcare4kids.com/care-4-kids-program/income-guidelines/>

⁴¹ Regulated care settings were determined by subtracting “unregulated care settings” from the monthly unique count of children served by Care 4 Kids. This figure is a more accurate representation of regulated care than adding up the number of children in each type of regulated care, as those figures do not represent unique counts.

⁴² *Ibid*.