

2/27/2021

The Cost of Child Maltreatment to the Alabama Economy 2018

Prepared for the Department of Child Abuse and Neglect Prevention
The Children's Trust Fund

Stuart Usdan, Ph.D., *Dean*

April Kendrick, Ph.D., *Director, Child Development Resources*

College of Human Environmental Sciences, The University of Alabama

Samuel Addy, Ph.D., *Associate Dean for Economic Development Outreach*

Ahmad Ijaz, *Executive Director*

Nyesha Black, Ph.D., *Director, Socioeconomic Analysis & Demographics*

Susannah Robichaux, *Socioeconomic Analyst III*

Center for Business and Economic Research

Culverhouse College of Business

The University of Alabama

Box 870221, Tuscaloosa, AL 35487-0221

(205) 348-6191 | uacber@culverhouse.ua.edu | <https://cber.culverhouse.ua.edu>

Disclaimer: This report reflects the analysis and opinions of the contributors, but not necessarily those of the faculty and staff of the College of Human Environmental Sciences, Culverhouse College of Business (Culverhouse) or the administrative officials of The University of Alabama (UA).

Contents

1.	Executive Summary	ii
2.	Introduction and Review	1
3.	2018 Cost Estimate	4
3.1.	Low Birthweight.....	5
3.2.	Chronic Illness (Childhood Asthma).....	5
3.3.	Childhood Mental Health Care	5
3.4.	Law Enforcement (Maltreatment-Related Interventions)	6
3.5.	Other Childhood Medical Costs	6
3.6.	Special Education	6
3.7.	Juvenile Delinquency.....	7
3.8.	Adult Criminality	7
3.9.	Adult Mental Health and Health Care.....	7
3.10.	Adult Homelessness.....	8
3.11.	Low Worker Productivity (of Victims)	8
3.12.	Low Worker Productivity (due to Mortality)	9
4.	Concluding Comments.....	9
5.	References	10

1. Executive Summary

The tangible cost of child maltreatment (or child abuse and neglect) to the Alabama economy in 2018 is conservatively estimated in this report to be \$3.7 billion and shown below by cost category. This significant cost of child maltreatment to the state is conservative because it is based on just the first-time child maltreatment victim cohort for 2018 and does not include associated costs to families (including extended ones) and communities that are known to occur. Child abuse and neglect is formally defined by the Child Abuse Prevention and Treatment Act (CAPTA) (P.L. 100-29) as any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation, or an act or failure to act that presents an imminent risk of serious harm. Four common types of child maltreatment—physical, sexual, emotional, and neglect—are recognized by the Centers for Disease Control and Prevention (CDC).

Child Maltreatment Cost to Alabama 2018	
Category	Cost (2018 dollars)
Low Birth Weight	91,371,123
Chronic Illness (Childhood Asthma)	23,675,543
Childhood Mental Health Care ^a	20,194,646
Child Welfare System	281,886,848
Law Enforcement for Intervention	784,794
Other Medical Costs of Children	2,471,114
Special Education	21,984,215
Juvenile Delinquency	26,486,404
Adult Criminality	109,469,664
Adult Mental Health and Health Care	431,701,155
Adult Homelessness	4,103,763
Lost Worker Productivity of Victims	2,629,685,802
Lost Worker Productivity due to Mortality	58,410,656
Total Annual Costs due to Child Maltreatment	3,702,225,728

^a Midpoint of \$13,463,908 - \$26,926,195 cost range.

Note: Rounding errors may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Preventing child maltreatment in Alabama will reduce the cost on the state economy and contribute to economic growth, especially given the focus on workforce development by the state and the fact that lost productivity accounts for almost \$2.7 billion (or 73 percent) of the total cost. However resources will be needed to accomplish this. The 2018 Annual Report of the Alabama Department of Child Abuse and Neglect – The Children’s Trust Fund (ADCANP/CTF 2018) notes that the agency’s budget in Fiscal year 2018 (FY2018) was about \$7.6 million, with slightly less than \$1.2 million coming from the state’s Education Trust Fund and the General Fund. The \$3.7 billion cost of child maltreatment to the state economy is roughly 1.7 percent of the \$221.0 billion Alabama gross domestic product (GDP) in 2018. Applying this 1.7 percent ratio to the \$10.1 billion net state tax collections in FY2018 yields \$169.7 million, which is 22.4 times the CTF budget and suggests that the return on investment that can be realized from increasing CTF funding to prevent child maltreatment in the state is substantial. The State of Alabama should consider doing so, especially since it is one way of increasing the availability of workers and also of raising productivity in the state.

2. Introduction and Review

This report presents the tangible cost of child maltreatment (or child abuse and neglect) to the Alabama economy in 2018. It is an update to a previous study, Boschung et al. (2015), which conservatively estimated that the cost of child maltreatment to the Alabama economy in 2013 was \$2.3 billion. The focus is on tangible costs only for the substantiated first-time victim cohort and so does not include associated intangible costs—pain, suffering, and grief—to victims, their families, and communities that are known to occur. Child abuse is defined by the Federal Child Abuse Prevention and Treatment Act as any recent act or failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act that presents an imminent risk of serious harm. Four common types of child maltreatment—physical, sexual, emotional, and neglect—are recognized by the Centers for Disease Control and Prevention (CDC).

The Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services (HHS) *Child Maltreatment 2018* (CM2018) report provides significant data by state on child maltreatment in 2018. The CM2018 report data includes child protective services staffing, referrals (initial notifications alleging maltreatment), response time, intake, screening, investigation, alternative response, and demographics on children, victims, and perpetrators. The Alabama Child Protective Services (ALCPS) 2018 workforce was 575 with 85 intake and screening workers and the remainder on investigations and alternative response; with 1,089,840 children (age 17 and under) in 2018, this means that Alabama had roughly 1 worker for every 1,900 children in the state. Average response time for the ALCPS, as collected under the Child Abuse Prevention and Treatment Act (CAPTA), on a referral rose from 47 hours in 2014 to 53 hours in 2018, which is 57.6% of the 2018 national average of 92 hours. The CM2018 report does not disclose average wait time for service, which was 104 days in 2013.

The number of Alabama children who received an investigation or alternative response increased by 38.7% percent, from 27,861 in 2013 to 38,634 in 2018. Investigations substantiated maltreatment for 12,506 (duplicate count) children. The number of victims (unique count) increased by 38.1% from 8,809 in 2013 to 12,158 in 2018 and raised the rate of child victims per 1,000 children from 7.9 to 11.2, respectively. By maltreatment type for child victims, 3,810 suffered neglect only, 5,103 suffered physical abuse only, 22 suffered psychological maltreatment only, 39 suffered medical neglect only, 1 suffered sex trafficking only, 1,778 were victims of sexual abuse only, and 1,405 suffered multiple maltreatment types. The number of first-time victims reached 10,043 in 2018 from 7,232 in 2013 (a 38.9% increase) and raised the rate of first-time child victims per 1,000 children from 6.5 to 9.2.

In 2018, 43 children in Alabama died from abuse or neglect compared to 32 in 2013, a 34.4% increase. The Alabama Department of Public Health's Alabama Child Death Review System report noted that of 184 cases of child death reviewed in 2018, 47 deaths were due to a motor vehicle accident. In eight cases, shoulder belts were not used, and child seats were needed but either not used or used incorrectly in fewer than 13 instances. Speeding was the culprit in 11 child deaths, reckless driving caused fewer than 10 child deaths, and seven child deaths were caused by drug or alcohol use.

For Alabama's fiscal year 2018 (FY2018, from October 1, 2017 to September 30, 2018) 4,062 children entered foster care and 1,346 children were waiting to be adopted, according to data from the Children's Bureau Trends in Foster Care and Adoption; 5,930 children were in foster care at year-end. About 72 percent of the 738 children who were adopted from foster care in Alabama received Title IV-E federal adoption assistance, using data from the State-level Data for Understanding Child Welfare in the United States. The National Conference of State Legislatures (NCSL) reported that the State of Alabama spent \$281,886,848 on child welfare for fiscal year 2016 (FY2016), including \$67,172,306 from federal sources. The Child Trends' Child Welfare Agency Spending in Alabama publication confirms the federal expenditures for child welfare in Alabama amount and notes that it includes \$23,224,063 for Title VI-E on foster care, adoption assistance, and guardianship programs during FY2016. We assume that the State of Alabama spent the same amount on child welfare for FY2018 as for FY2016 although total expenditures for the Department of Human Resources, which sees to child welfare programs in the state, fell from \$1.938 billion in FY2016 to \$1.836 billion in FY2018.

Preventable infant mortality and low birthweight babies are a form of child abuse. The CDC reported that 405 infants died in Alabama in 2018, causing the infant mortality rate (deaths per 1,000 births) to drop from 7.4 in 2017 to 7.0 in 2018. While this is the lowest infant mortality rate in Alabama history, Alabama still had the 8th highest infant mortality rate in the nation. Nationally, the CDC reports that 8.3 percent of babies were low birthweight (less than 2,500 grams) in 2018—1.4 percent of births were considered very low birthweight. In 2018, 379,777 babies were born preterm. The CDC estimates that 10.7 percent of babies born in Alabama in 2018 were low birthweight, ranking Alabama as the state with the 3rd highest rate of low birthweight babies. The Children's Defense Fund estimates that 16.3 percent of low birth weights are the result of prenatal neglect. Noor and Caldwell (2005) estimated that in 2004 the additional cost of care associated with each such baby was \$54,510 in 2002 dollars. The Central Intelligence Agency (CIA) ranks the United States 174th for infant mortality among 228 nations. Though the infant mortality rate decreased in 2018, the percentage of children born at low birthweight has remained steady since 2015. Prenatal care is available for pregnant women, but those who do not take advantage of this care are not changing harmful behaviors that cause low weight births. Prenatal care for pregnant women is important in reducing the incidence of infant mortality and low birthweight; it is consequently a critical component in preventing the abuse and neglect that works against the healthy development of infants and children.

Some recent studies on the economic burden of child maltreatment have attempted to include intangible costs. Peterson et al. (2018) included intangible costs and estimated that the single-victim lifetime cost in year 2015 dollars of child abuse and neglect in the United States is \$830,928 for nonfatal and \$16.6 million for fatal. This translated into an economic burden for the country that ranged from \$428.3 billion for 482,000 substantiated cases to nearly \$2.0 trillion for 2,368,000 investigations in 2015, including 1,670 fatalities. The study was an update on Fang et al. 2012, which did not include intangible costs and had estimated for incidence in 2008 (i) the single-victim lifetime cost in year 2010 dollars of \$210,012 nonfatal and about \$1.3 million fatal and (ii) national economic burden ranging from \$123.8 billion for 579,000 substantiated cases to \$585.0 billion for 2,775,000 investigations including 1,740 fatalities. Fang et al. (2012) uses the human capital valuation method of lost productivity to estimate tangible mortality and morbidity in its cost estimates. The significantly higher Peterson et al. (2018) cost estimates arise from the use of quality-adjusted life year (QALY) and value

per statistical life (VSL) methods to include intangible costs for morbidity and mortality, respectively. Klika et al. (2020) used the Peterson et al. (2018) costs on 2018 incidence to estimate economic burden of child maltreatment for the United States and its 50 states. The lifetime estimated economic burden of child maltreatment in 2018 for the United States is \$463 billion for 677,529 substantiated cases and nearly \$3 trillion for 3,533,597 investigated cases. The lifetime estimates for economic burden of child maltreatment is for the cohort of victims of the year of incidence across the entire span of their lives.

For Alabama, (Klika et al. 2020) estimates the lifetime economic burden of child maltreatment to be approximately \$10 billion for 12,158 substantiated cases and more than \$32 billion for 38,634 investigated cases, including 43 fatalities. These estimates are too high given that the state had a gross domestic product (GDP) of \$221.0 billion (according to the U.S. Bureau of Economic Analysis) and a population of 4,887,681 (according to the U.S. Census Bureau) in 2018. Similarly, the estimates of economic burden of child treatment for the nation in the preceding paragraph are too high as U.S. GDP and population were \$20.6 trillion and 326,687,501, respectively, in 2018 and \$18.2 trillion and 320,635,163, respectively, in 2015. Even when considered relative to U.S. household net worth of \$105.8 trillion in 2018 (according to the Federal Reserve Second Quarter 2020 Financial Accounts of the United States), these estimates that include intangible costs are still too high.

There are at least two unresolved issues with estimating and including intangible costs of child maltreatment as has been done to date. First, intangible costs are not additive or multiplicative in the usual sense. A dollar of intangible cost is not the same as a dollar of tangible cost since the latter is real while the former is attempting to monetize qualitative element(s). As such, tangible and intangible costs are not fungible and must not be added or combined. In addition, qualitative capacity to deal with intangibles such as pain, suffering, and grief (or joy and happiness on the other hand) does not necessarily follow in multiples. Does (i) twice the number of victims result in twice the pain, suffering, and grief or (ii) twice the benefits result in twice the joy and happiness? If not, then deriving total intangible cost by multiplying the per-victim intangible cost and the number of victims is improper. It is important to note that to arrive at their total cost estimates, both Peterson et al. (2018) and Klika et al. (2020) may have inappropriately (a) multiplied per-victim intangible morbidity and mortality costs by number of victims and (b) added these intangible costs estimates to tangible costs for health care, child welfare, criminal justice, and special education. Second, respondents to willingness-to-pay surveys that VSL and QALY methods rely on may not have the full context, information, and comprehension to provide meaningful or useful responses. Thus, inferences based on those survey results may be unrealistic and/or unreliable.

One other issue with some cost estimates of the economic burden of child maltreatment is concerning the use of the unique count of victims for the year of incidence. We believe that the number of first-time victims for the year of incidence is the appropriate cohort to use to avoid incorporating the lifetime costs of some victims multiple times in different reports for various years. Given the foregoing, it is important to note that this report presents the tangible lifetime cost of child maltreatment for the year 2018 substantiated first-time victim cohort in Alabama on the state's economy. The results are conservative because of the omission of intangible costs. However, we acknowledge that there are associated intangible costs of child maltreatment to victims, their families and communities, and the whole Alabama economy. The Alabama Department of

Child Abuse and Neglect – The Children’s Trust Fund (ADCANP/CTF) has prevention programs that work (see ADCANP/CTF 2020). It is our hope that this report encourages the state to invest more in these programs and thereby avoid or minimize the cost of child maltreatment to the state.

3. 2018 Cost Estimate

Child maltreatment strains the state’s social, health, and judicial services and adversely affects the economy. In order to estimate the costs of child abuse on the Alabama economy, research studies look at both the costs of intervention (those costs associated with the immediate needs of abused or neglected children) and costs associated with the long-term and/or secondary effects of child abuse and neglect. The act of abuse or neglect not only affects children’s present status but also continues to affect their way of living throughout their course of life. Child abuse and neglect cause severe damage to the child as an individual and to society as a whole. Year 2018 is chosen for the analysis because it is the most recent year for which a complete set of data is available.

The number of first-time victims (10,043) whose investigations or alternative responses were substantiated in 2018 is used as basis in this report for determining most of the costs of child maltreatment to the state economy. Although the costs estimated will occur over time, tying the costs to when victims were first abused is appropriate because it uses a properly identified cohort. Our method specifically determines the cost over time in 2018 dollars of child maltreatment for the year 2018 first-time victim cohort. The full 2018 child maltreatment victim cohort comprises the 10,043 first-time victims, the 43 child deaths resulting from abuse or neglect, the 6,186 low birthweight babies (from the Alabama Department of Public Health [ADPH] Center for Health Statistics), and maltreated children who had (i) child welfare spending attributed to abuse and neglect, (ii) police child maltreatment intervention cases, and (iii) other medical costs not elsewhere accounted for. It is important to note that in any given year, there are costs of maltreatment for different cohorts of victims who are first-time victims of the basis and prior years. As such, our results are conservative when it is considered that some victims are abused over several years.

Child maltreatment causes preventable infant mortality and low birthweight, chronic health and mental health problems, developmental and educational delays, lower work productivity, and higher involvement with the criminal justice system. This report uses the best available secondary data as well as primary data from the Healthcare Cost and Utilization Project (HCUP), a Federal-State-Industry partnership sponsored by the Agency for Healthcare Research and Quality (AHRQ) to estimate the costs of child maltreatment for Alabama. Information from state agencies such as the Alabama Department of Labor, Alabama Department of Youth Services, and Alabama Department of Corrections were collected for specific state cost estimates.

This report uses an “additional cost” concept to estimate the cost of child maltreatment on the Alabama economy by considering costs above those that would normally have been incurred for non-maltreated children. The sections following describe estimations of components to the total cost of child abuse and neglect on the state economy. Due to the lack of appropriate data, we do not include the cost of early intervention services that are required to manage developmental delays. The total cost of child maltreatment in 2018 to the Alabama economy is estimated to be \$3.7 billion.

3.1. Low Birthweight

The low birthweight maltreatment component cost was estimated to be \$75.7 million in 2013 and comprised costs for newborn hospitalization, re-hospitalization within the first year, and other associated health costs. That cost was based on (i) the ADPH reported 5,853 low birthweight babies (ii) the Children's Defense Fund (CDF) estimate that 16.3 percent of low birthweights are the result of prenatal neglect, (iii) the Noor and Caldwell (2005) estimate that in 2004 the additional cost of care associated with each low birthweight baby was \$54,510 in year 2002 dollars, and (iv) the 145.56 Consumer Health Consumption Inflation Chained Price Index factor to express year 2002 dollars in terms of year 2013 dollars. Specifically, $5,853 * 16.3\% * \$54,510 * 145.56 / 100 = \$75,697,992$. The additional cost per low birthweight baby in 2013 dollars is \$79,345.

To estimate the low birthweight maltreatment cost for 2018, we first use the Consumer Price Index Medical Care Series (CPI-MCS) for July (114.21) and the \$79,345 year 2013 additional cost per low birthweight baby to calculate an additional cost per low birthweight baby in 2018 to be \$90,617 (i.e., $\$79,345 * 114.21 / 100$). Applying this to the ADPH reported 6,186 low birthweight babies born in Alabama in 2018 and the CDF 16.3 percent prenatal neglect share of low birthweights yields a total additional low birthweight maltreatment cost for 2018 of \$91.4 million (derived from $6,186 * 16.3\% * \$90,617 = \$91,371,123$).

3.2. Chronic Illness (Childhood Asthma)

Boschung et al. 2015 determined that the cost of chronic illness among maltreated children on the Alabama economy in 2013 was \$14.9 million (calculated as $30\% * 7,232 * \$5,493 * 125.26 / 100 = \$14,928,002$), which translated into a per first-time maltreated child victim cost of about \$6,881. The 2013 estimate was based on (i) using asthma as proxy for chronic illness and the Fromm (2004) estimate that 30 percent of maltreated children will suffer from asthma, (ii) the HHS *Child Maltreatment 2013* (CM2013) report of 7,232 first-time Alabama maltreated child victims in 2013, (iii) HCUP's estimate in 2004 that the cost of treatment associated with an asthmatic child was \$5,493, according to Kelly Myles' paper "Disabilities Caused by Child Maltreatment: Incidence, Prevalence, and Financial Data," and (iv) the Consumer Health Consumption Inflation Chained Price Index of 125.26 to express 2004 dollars in 2013 dollars.

For 2018, a similar calculation is done but with the CPI-MCS July factor of 114.21 to update costs and the CM2018 first-time maltreated child victims unique count of 10,043 to determine that the cost of chronic illness among maltreated children using asthma as proxy on the Alabama economy in 2018 is \$23.7 million (calculated as $30\% * 10,043 * \$5,493 * 125.26 / 100 * 114.21 / 100 = \$23,675,543$). Actually, the difference between the occurrence of chronic illnesses among maltreated children and non-maltreated children is what is needed to properly calculate this cost component, but the Fromm (2004) 30 percent rate used can be thought of as allowing for other chronic illnesses.

3.3. Childhood Mental Health Care

The cost of childhood mental health care due to child maltreatment on the Alabama economy in 2013 was estimated to range from \$8.5 million (calculated as $25\% * 7,232 * \$4,695 = \$8,488,808$) if 25 percent of abused children needed treatment to nearly \$17 million (i.e., $50\% * 7,232 * \$4,695 = \$16,977,617$) if 50 percent of these children needed treatment. This was based on a \$4,695 average cost treating the mental health issues of

an abused child and a National Institute of Justice (NIJ) report that 25 to 50 percent of all abuse victims will need some form of mental health treatment (Miller et al, 1996). The average cost was obtained by averaging cost of treatment (expressed in 2013 dollars) for the five forms of child abuse reported by the NIJ: physical abuse, emotional abuse, sexual abuse, emotional neglect, and educational neglect.

Adjusting for the size of the first-time maltreated child victims cohort and inflation (using the CPI-MCS July factor of 114.21), the cost range of childhood mental health care due to child maltreatment on the Alabama economy in 2018 is about \$13.5 million to \$26.9 million. The range uses the same NIJ 25-50 percent range of all abuse victims needing mental health treatment and are calculated as $(\$8,488,808 * 114.21 / 100 * 10,043 / 7,232 = \$13,463,098)$ for the low-end and $(\$16,977,617 * 114.21 / 100 * 10,043 / 7,232 = \$26,926,195)$ for the high-end. While reporting this range, we use the midpoint of \$20,194,646 for this component cost.

3.4. Law Enforcement (Maltreatment-Related Interventions)

The total cost to law enforcement for Alabama in 2018 due to child maltreatment interventions is \$784,794. This is calculated from the 2013 cost of \$523,848 with adjustment for the size of the first-time maltreated child victims cohort and inflation using the Consumer Price Index (CPI) July factor of 107.88 (i.e., $\$523,848 * 107.88 / 100 * 10,043 / 7,232 = \$784,794$). The \$523,848 year 2013 cost estimate (calculated as $\$34,731,531 * 0.015082784 = \$523,848$) was based on an NIJ estimated national cost of \$34,279,048 in 2012 dollars (converted into \$34,731,531 in 2013 dollars using a state and local government purchases inflation factor of 101.32) together with a child population proportion factor of 0.015082784. The NIJ estimated that the cost per police case of each of the five forms of child maltreatment interventions as noted above for mental health care varied from \$3.49 to \$97.82 using the Overall State and Local Purchases Inflation Chained Price Index factor of 174.67 to express 1996 dollars in terms of 2012 dollars. Based on the number of victims and cost estimates, the NIJ estimated the total cost of law enforcement due to child maltreatment to be \$34,279,048 in 2012 dollars.

3.5. Other Childhood Medical Costs

Boschung et al. 2015 detailed derivation of \$1,558,097 for the other childhood medical costs due to child maltreatment in 2013 using HCUP data. Adjusting for the size of the first-time maltreated child victims cohort and inflation (using the CPI-MCS July factor of 114.21), the child maltreatment other childhood health care cost on the Alabama economy in 2018 is about \$2.5 million (i.e., $\$1,558,097 * 114.21 / 100 * 10,043 / 7,232 = \$2,471,114$). This translates into a per first-time maltreated child victim cost of about \$246 on average. In reality, not every first-time maltreated child victim will incur such costs.

3.6. Special Education

According to a nationally representative sample of data from the National Study of Child and Adolescent Well-Being (NSCAW), 21 percent of toddlers and infants investigated for maltreatment receive special education services (Scarborough et al. 2010), which is 50 percent higher than the national average of 14 percent for all public school students (U.S. Department of Education, 2020), and almost two times the 11.1 percent rate for all students in Alabama. The per pupil expenditure (including local, state, and federal sources), for all public school students, in Alabama, is \$9,213, and Alabama uses an adjusted weight of 1.2 of the per pupil

expenditure to calculate the cost of serving special needs students (Augenblick, Palaich and Associates 2015; Alabama State Department of Education; Ala. Code § 16-13-232).

CM (2018) data indicate that the median age of maltreated child victims is 6, so we apply the annual additional cost to twelve (12) years of schooling. Using a higher special education need for maltreated children of 9.9 percent (i.e., 21% - 11.1%) and the 20 percent higher per pupil cost for special education, we calculate the total additional cost of special education services to maltreated children in Alabama for the year 2018 first-time victim cohort to be nearly \$22.0 million (i.e., $9.9\% * 10,043 * 20\% * \$9,213 * 12 = \$21,984,215$).

3.7. Juvenile Delinquency

Almost 3 percent of maltreated children were formally involved with the juvenile justice system within six years, on average, of their initial referral to a CPS child protective services (Vidal et al. 2017). According to the Justice Policy Institute, the national average cost for the most expensive option for secure confinement of juveniles is \$588 per day, or \$214,620 per year, a 44 percent increase from 2014; for Alabama this option costs \$443 per day, about \$161,694 per year. About 27.4 percent of maltreated children will engage in a delinquent act as juveniles compared to 17.2 percent of children in the general population, resulting in a difference of 10 percent (Widom & Maxfield, 2001). According to the Deputy Director for Administration at the Alabama Department of Youth Services, the average cost of housing a juvenile offender in secure facilities is \$26,373 (or \$192.50 per day for an average length of stay of 137 days or 4.5 months); the cost range is \$105 to \$280 a day and length of stay range is 3 to 6 months. This is reasonable as the literature suggests that the national average per crime cost of the juvenile system including administrative, treatment, and probation expenditures is about \$29,083 in 2018 dollars (\$18,950 in 1998 dollars, Reynolds et al. 2002). Using the \$26,373 average cost of housing a juvenile offender in secure facilities, the 10 percent differential, and assuming no recidivism, the cost of juvenile delinquency in Alabama for the year 2018 first-time child maltreatment victim cohort is \$26.5 million (i.e., $10\% * 10,043 * \$26,373 = \$26,486,484$).

3.8. Adult Criminality

Studies show that maltreated children are more likely to engage in adult criminality compared to non-maltreated children, with an estimated difference of 9 percent (Widom & Maxfield, 2001). The Alabama Department of Corrections (ADOC) annual report for FY2018 noted that there were 26,790 inmates in the ADOC jurisdictional population, the average daily system-wide inmate cost was \$60.34, the average length of incarceration for an adult is 51 months or 4.25 years, and the recidivism rate was 29.39 percent. Therefore, the cost per adult of incarceration is \$99,108.45 (i.e. $\$60.34 * 4.25 * 365 = \$93,602.43$), not including costs associated with courts or police services. Given the 9 percent differential, the recidivism rate, and the size of the first-time child maltreatment victim cohort, the cost of child maltreatment related adult criminality on the Alabama economy in year 2018 is conservatively \$109.5 million (i.e., $9\% * 10,043 * (1 + 29.39\%) * \$93,602.43 = \$109,469,664$).

3.9. Adult Mental Health and Health Care

Children who experienced abuse and neglect have higher needs for both general health care and mental health care as adults and, consequently, incur higher health costs. Bonomi et al. (2008) estimated that the average

annual health care cost for women who experienced physical or sexual abuse in childhood was \$487 (in 2004 dollars) higher than for women who did not experience such abuse. Boschung et al. (2015) adjusted this cost differential to \$610 in 2013 dollars using the Consumer Health Consumption Inflation Chained Price Index factor of 125.26. We use the CPI-MCS July factor of 114.21 to express it in year 2018 dollars as \$697 annually and \$42,985 lifetime per victim based on life expectancy of age 78.7 by the Centers for Disease Control and Prevention (CDC). We assume that additional health care costs attributable to childhood maltreatment are similar for men who experienced such abuse as a child, following the 2012 report by Gelles and Perlman for the Prevent Child Abuse America organization. CM2018 reported that 42.0 percent of maltreated children (unique count) in Alabama suffered from physical abuse only in 2018, 14.6 percent from sexual abuse only, 31.3 percent from neglect only, 0.3 percent from medical neglect only, 0.2 percent from psychological maltreatment only, and 11.6 percent from multiple maltreatment types. Assuming that first-time victims are similarly distributed by maltreatment type and that the \$42,985 higher lifetime per victim health care costs applies to all victims, the cost of additional adult mental and health care due to maltreatment of the first-time victim cohort on the Alabama economy is \$431.7 million (calculated as $10,043 * \$42,985 = \$431,701,155$).

3.10. Adult Homelessness

Research shows that lack of care or abuse from a parent during childhood increases the likelihood of experiencing homelessness as an adult. The National Longitudinal Study of Adolescent Health (Add Health) shows that 26.4 percent of young adults who were homeless, by the age of 24, experienced parental-caregiver neglect compared to 10.8 percent of young adults who had not experienced homelessness, for a difference of 15.6 percent. In addition, according to Shelton et al. (2009), homeless young adults who were more likely to report that they ran away from home as a child (41.3 percent) compared to never homeless young adults (7.0 percent); homeless young adults were more likely to report that they were ordered out of home by their parents (45.5 percent) compared to never homeless young adults (9.0 percent); young adults who reported homelessness by age 24 were more likely to report that they experienced physical aggression (52 percent) compared to young adults who were never homeless (28.3 percent); and homeless young adults were also more likely to report sexual abuse (11.8 percent) compared to adults who were never homeless (4.4 percent). The estimated cost of housing an individual in the homeless system was on average \$2,619 in 2018 (adjusted from \$2,428 in 2013 dollars [Boschung et al. 2015] and \$2,101 in 2006 dollars [Spellman et al, 2010]). Using the differential of 15.6 percent, the cost of adult homelessness in Alabama related to the year 2018 first-time child maltreatment victim cohort is \$4.1 million (i.e., $15.6\% * 10,043 * \$2,619 = \$4,103,763$).

3.11. Low Worker Productivity (of Victims)

Child abuse and neglect affect the lifetime productivity of victims due to disabilities from abuse or from emotional trauma that follow later in life. Research shows that adults with documented histories of maltreatment as children have lower levels of education, employment, earnings, and fewer assets as adults, compared to those with no reported child maltreatment. On average, maltreated children earned about \$7,077 less annually as adults than those who did not suffer abuse or neglect (\$5,108 in 2004 dollars, Currie & Widom, 2010). According to the Labor Market Information Division of the Alabama Department of Labor, the average length of participation in the labor force in the U.S. can be used as a substitute for Alabama due to the lack of longitudinal studies for the state. The average work life of 39.5 years for men and 34.4 years for women

was estimated by Spizman in 2012, using Skoog, Ciecka & Kruger 2011 data. Assuming male-female ratio of 50-50, which implies a mean work life of about 37 years, total cost of lost worker productivity in Alabama is estimated as \$2.6 billion (i.e., $10,043 * 37 * \$7,077 = \$2,629,685,802$).

3.12. Low Worker Productivity (due to Mortality)

In 2018, 43 child fatalities occurred in Alabama as a result of maltreatment (ACF, 2018). If these children had survived, they could have joined the workforce. Adjusting an average annual pay in the state of Alabama \$43,790 in 2018 (Bureau of Labor Statistics, QCEW) for lower pay of victims of child maltreatment (Currie & Widom, 2010), yields a conservative annual pay estimate of \$36,713. Using the average length of work participation of 37 years (based on Spizman, 2012), the cost of lost productivity to the Alabama economy per child death due to maltreatment is \$1,358,387. This cost is similar to the estimated average lifetime cost per death of a child victim to society of almost \$1.4 million in 2013 dollars reported by CDC researchers (Fang et al, 2012). The cost of lost productivity to the Alabama economy due to child mortality resulting from maltreatment in 2018 is estimated to be \$58.4 million (i.e., $43 * \$1,358,387 = \$58,410,656$).

4. Concluding Comments

The cost of child maltreatment (or child abuse and neglect) to the Alabama economy in 2018 is conservatively estimated in this report to be \$3.7 billion because it is based on just the first-time child maltreatment victim cohort for 2018 and does not include associated costs to families (including extended ones) and communities that are known to occur. Preventing child maltreatment in Alabama will reduce the cost on the state economy and contribute to economic growth, especially given the focus on workforce development by the state and the fact that lost productivity accounts for almost \$2.7 billion of the total cost. The FY2018 budget for the Alabama Department of Child Abuse and Neglect Prevention/The Children's Trust Fund (CTF) was about \$7.6 million. The \$3.7 billion cost of child maltreatment to the state economy is roughly 1.7 percent of the \$221.0 billion Alabama gross domestic product (GDP) in 2018. Applying this 1.7 percent ratio to the \$10.1 billion net state tax revenues in FY2018 yields \$169.7 million, which is 22.4 times the CTF budget and suggests that the return on investment that can be realized from increasing CTF funding to prevent child maltreatment in the state is substantial. The State of Alabama should consider doing so, especially since it is one way of increasing the availability of workers and also of raising productivity in the state.

- Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW). Retrieved from <http://data.bls.gov/cgi-bin/dsrv>
- Central Intelligence Agency. (2013). *The World Factbook 2013-14*. Washington, DC : Central Intelligence Agency.
- Children's Bureau. (2014). *Adoptions of Children with Public Child Welfare Agency Involvement by State*. U.S. Department of Health and Human Services. Retrieved from www.acf.hhs.gov/programs/cb
- Children's Bureau. (2014). *Children in Public Foster Care on September 30th of Each Year Who Are Waiting to be Adopted*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from www.acf.hhs.gov/programs/cb
- Children's Bureau. (2014). *Number of Children in Foster Care on September 30th, by State*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from www.acf.hhs.gov/programs/cb
- Children's Bureau. *Numbers of Children Entering Foster Care by State*. Washington, DC: U.S. Department of Human Services. Retrieved from www.acf.hhs.gov/programs/cb
- Children's Defense Fund. (2014). *The State of America's Children*. Washington: Children's Defense Fund.
- CLASP. (2010). *Child Welfare in Alabama*. Washington: CLASP.
- Currie, J., & Widom, C. (2010). Long-term consequences of child abuse and neglect on adult economic well-being. *Child Maltreatment*, 15 (2), 111-120.
- DeVooght, K., Fletcher, M., Vaughn, B., & Cooper, H. (2012). *Federal, State, and Local Spending to Address Child Abuse and Neglect in SFY 2008 and 2010*. Bethesda, MD: Child Trends.
- Fang, X., Brown, D., Florence, C., & Mercy, J. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse & Neglect*, 36, 156-165.
- Fromm, S. (2004). *Total Estimated Cost of Child Abuse and Neglect in the United States. Perspectives on Youth, Summer/Fall 2004*.
- Gelles, R., & Perlman, S. (2012). *Estimated Annual Cost of Child Abuse and Neglect*. Chicago, IL: Prevent Child Abuse America.
- Harding, K. (2012). *Annual Cost of Child Abuse and Neglect - State Estimates*. Chicago, IL: Prevent Child Abuse America.
- Herman, D., Susser, E., Struening, E., & Link, B. (1997). Adverse childhood experiences: Are they risk factors for adult homelessness? *American Journal of Public Health*, 87 (2), 249-255.
- Jason-Reid, M., Drake, B., Kim, J., Porterfield, S., & Han, L. (2004). A prospective analysis of the relationship between reported child maltreatment and special education eligibility among poor children. *Child Maltreatment*, Vol. 9 (4), 382-394.

- Justice Policy Institute. 2020. Sticker Shock 2020: The cost of youth incarceration. Retrieved from http://www.justicepolicy.org/uploads/justicepolicy/documents/Sticker_Shock_2020.pdf
- Klika, J.B., Rosenzweig, J., & Merrick, M. (2020). Economic burden of known cases of child maltreatment from 2018 in each state, 2015. *Child and Adolescent Social Work Journal*, 37:227-234.
- MacDorman, M. F., Mathews, T., Mohangoo, A. D., & Zeitlin, M. (2014). *International Comparisons of Infant Mortality and Related Factors: United States and Europe, 2010* (Vol. 63). Hyattsville, MD: National Center for Health Statistics.
- Martin, J., Hamilton, B., Osterman, M., Curtin, S., & Mathews, T. J. (2015). *National Vital Statistics Reports*. National Center for Health Statistics. Hyattsville, MD: Centers for Disease Control and Prevention.
- Miller, Ted R., Cohen, Mark A. & Wiersema, Brian. (1996). *Victim Costs and Consequences: A New Look*. National Institute of Justice Research Report: 12-14.
- National Center for Health Statistics. (2010). *Infant Mortality Rates State 2010*. Atlanta, GA: Centers for Disease Control and Prevention.
- National Center for Health Statistics. (n.d.). Table 33. Live births by stat of residence, race of mother, and birthweight; and infant deaths, and infant mortality rates by state of residence, race of mother, birthweight, and age at death: United States, 2001 period data. Atlanta, GA: Centers for Disease Control and Prevention.
- National Kids Count. (2012). *Low-birthweight Babies*. Baltimore, MD: Annie E. Casey Foundation. Retrieved from <http://datacenter.kidscount.org/data/tables/5425-low-birthweight-babies#detailed/2/2-52/false/868,867,133,38,35/any/11984,11985>
- Noor, I. & Caldwell, R. A. (2005). *The Cost of Child Abuse vs. Child Abuse Prevention: A Multi-year Follow-up in Michigan*.
- Peterson, C., Florence, C., & Klevens, J. (2018). The economic burden of child maltreatment in the United States, 2015. *Child Abuse & Neglect*, 86, 178-183.
- Reynolds, A. J., Temple, J., Robertson, D., & Mann, E. (2002). Age 21 cost-benefit analysis of the Title I Chicago Parent-Child Center. *Educational Evaluation and Policy Analysis*, Vol. 24 (4), 267-303.
- Scarborough, A. A. & McCrae J. S. (2010). School-age special education outcomes of infants and toddlers investigated for maltreatment. *Children and Youth Services Review*, 32, 80-88.
- Scarcella, C. A., Bess, R., Zeilewski, E. H., & Geen, R. (2006). *The Cost of Protecting Vulnerable Children V: Understanding State Variation in Child Welfare Financing*. The Urban Institute.
- Shelton, K. H., Taylor, P. J., Bonner, A., & van den Bree, M. (2009). Risk factors for homelessness: Evidence from a population-based study. *Psychiatric Services*, 60(4), 465-472.
- Spellman, B., Khadduri, J., Sokol, B., & Leopold, J. (2010). *Costs associated with first-time homelessness for families and individuals*. Washington, D.C.: U.S. Department of Housing and Urban Development, Office

of Policy Development and Research. Retrieved from www.huduser.org/publications/pdf/Costs_Homeless.pdf

Spizman, L. M. (2012). Bulletin 2254 Worklife Expectancy Tables and Tort Gender Inequality. *The Earnings Analyst*, 12.

U.S. Department of Education. (2020). Retrieved from https://nces.ed.gov/programs/coe/indicator_cgg.asp

Vidal, S., Prince, D., Connell, C. et al. (2017) "Maltreatment, family environment, and social risk factors: Determinants of the child welfare to juvenile justice transition among maltreated children and adolescents." *Child Abuse and Neglect*, 63 (2017): 7-18.

Widom, C. S., & Maxfield, M. G. (2001). An update on the "Cycle of Violence". National Institute of Justice Research in Brief, U.S. Department of Justice, Office of Justice Programs.