

Brief 1

Educating the Youngest: What About Us?

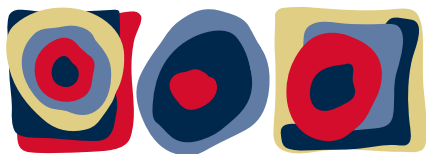
This brief is the first of a five part series produced by The Graduate Center for the Study of Early Learning. The content is derived from various sources that provide a context for the other briefs based on research presentations of internationally recognized early childhood experts, brain scientists, and a Nobel Prize winning economist who presented in the state over the past two years. Information presented by the researchers pointed to the importance of investing in early childhood education to build a strong workforce and viable economic base for the future. The series was held in conjunction with the University of Mississippi, North Mississippi Education Consortium, The Phil Hardin Foundation and MS Kids Count during the 2017-2019 academic years. Each brief will provide the reader with highlights provided by the speaker and reflections of the Co-Directors of the Graduate Center for the Study of Early Learning, Drs. Cathy Grace and Melody Musgrove as the research cited relates to Mississippi. The speaker series was funded by The W.K. Kellogg Foundation. The first brief is designed to provide general information regarding current support to early childhood education in the state.*

**Birth to kindergarten*

Mississippi ranks at the bottom or near last in rankings in several national reports related to health and well-being in the state. The 2013-2017 American Community Survey data recently released indicates the severity of poverty by age range. According to the data, 17.9% (41,083) of children, birth through age 5 years live in extreme poverty and another 15.3% (35,130) live at 51-100% of poverty as defined by federal income guidelinesⁱ. Given the percentage in low income homes, Mississippi ranks 48th in the country in overall child well-beingⁱⁱ. The National Center on Children in Poverty reported in 2016 that the federal poverty threshold was \$24,339 for a family of four with two children. They defined children living in families with incomes below the federal poverty threshold as poor. Thirty-four percent of young children in Mississippi are poor, with the national average being 21 percentⁱⁱⁱ. To put this in perspective, approximately 40,000 children are born annually in the state. Computing the number of children statewide that are born into and live in poverty the first five years of life the number ranges between 76,213-78,479 children.

From a state perspective, *US News and World Report* (2018) published a ranking of states related to the poverty found among the residents. Mississippi ranked at the top of the list of states having the most poverty. According to the report, the overall poverty rate was 19.8%^{iv}. An article appearing in *Mississippi Today* (2019), stated "nearly one-in-five people in Mississippi live below the poverty line and the state's median household income of \$42,000 falls under a living wage for a single parent, according to the MIT living wage calculator^v."

According to the National Center of Children in Poverty, the achievement gap for low-income young children starts early in life and is difficult to reverse. What science has uncovered regarding early brain development, along with what is now known from economic analysis, it is clear that investing in high-quality early care and learning is essential to reducing this gap^{vi}. Given the high percentage of children under the age of six living in Mississippi, the access they have to high quality early childhood education should be of paramount concern to those having an interest in the state's future.



State appropriation of
\$6,699,517 in 2019 resulted in 3,016

4 year-olds enrolled in pre-kindergarten.

Investment in High Quality Pre-Kindergarten Education Pays Off: So Why So Little Funding?

The news regarding poverty's hold on Mississippi is not new, nor is the lack of state investment in developing an educated work force beginning in the early years. State investments in early childhood education serving children birth through four years of age are lacking as evidenced by failure of the state to provide adequate funding to the pre-kindergarten program as described in the Early Childhood Collaboration Act of 2013^{vii} as well as programs serving children younger than four. Since the pre-kindergarten programs started in 2014, the state has appropriated \$6,699,517 resulting in 3,016 4 year-old children enrolled^{viii}. In Figure 1, the 2013 legislation lists a phase-in three part structure of funding with the amount to be capped at \$33 million. Currently funding has not met the level defined in phase one. According to a report appearing in the *Clarion Ledger*, more than 70 percent of children who attend pre-K in the state leave ready for kindergarten, based on accountability data released by the Mississippi Department of Education. This is in contrast to the 63% of children deemed not ready for kindergarten based on their score on the state kindergarten entry assessment^{ix}. All collaborative programs are required to provide a one-one match for funds allocated. The match may include in-kind as well as federal or local funding. This includes individuals and/or businesses paying their state income tax to a collaborative rather than the Mississippi Department of Revenue^{xi}.

School districts have the local option to provide pre-kindergarten through other methods of funding. The Mississippi Department of Education reported in 2018 that 5,842 children were in "other funded" pre-kindergarten programs housed at public school locations^{xii}.

Amount Neighboring States Invested in Pre-Kindergarten on a Per Child Basis in 2017

Arkansas	\$5,472
Louisiana	\$4,706
Tennessee	\$4,624
Alabama	\$4,594
Mississippi	\$2,436

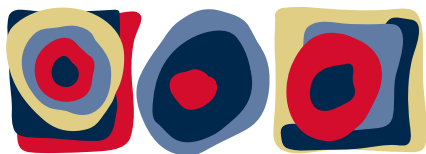
Source: National Institute of Early Education Research (NIEER) <http://nieer.org/state-pre-school-yearbooks/yearbook2017#profiles>

Figure 1: Pre-K Collaborative Act of 2013 Phase-In Funding as defined in law^{xiii}:

First Phase Based on annual state appropriations of not more than 8 million dollars with a projection to serve 3,000 children

Second Phase Based on annual state appropriations of not more than 16 million dollars with a projection to serve 7,000 children

Third Phase Based on annual state appropriations of not more than 33 million dollars with a projection to serve 15,000 children



No state dollars are
required to be allocated to receive
Head Start/Early Head Start funds.

State Funding for the Education and Care of the Youngest Children is Negligible

For families of children younger than five who qualify for programs funded largely by various federal agencies that allocate money to the state for that purpose, access is complicated. The eligibility to participate in the programs is largely based on income and/or a certain criteria set by the state and/or the federal government. Children, birth to five years of age, who reside in families that meet the criteria of being low income according to the Poverty Guidelines published by the federal government are eligible for Head Start and Early Head Start. Children in foster care, homeless children, and children from families receiving Temporary Assistance for Needy Families or Supplemental Security Income (SSI) are also eligible^{xiv}. Funding for Early Head Start and Head Start in Mississippi FY2018 was \$206,565,616. This provided services to 23,640 children. An additional \$2,264,707 was granted to the Mississippi Band of Choctaw Indians which resulted in 268 children being served. Head Start is required to meet federal program standards in addition to state child care licensing requirements and some programs are partners in the state funded pre-kindergarten collaborative programs^{xv}. There are no state funds required in order to receive Head Start funding. Several funding sources that are allocated to Mississippi are summarized in Figure 2.

Parents who are working may be eligible to participate in the Child Care Development Block Grant (CCDBG) program funded through federal funds directed to the Mississippi Department of Human Services. It is designed to serve low income working families by providing a child care program of the parent's choice for children birth through age 12 years. The required state match to receive the 2019 federal allocation is \$6,653,547. When a child care program meets the criteria set by federal and state program administrators, a certificate which pays the program a rate set by the state is issued to the provider. The rate of pay to the provider

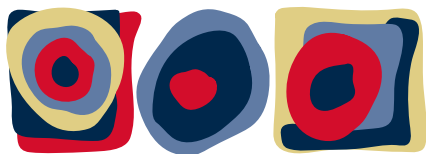
Child Care Development Block Grant Funding FY 2019

State Matching Funds FY 2019	\$6,603,547
Total Federal Allocated FY 2019	\$90,874,442

Source: <https://www.acf.hhs.gov/occ/resource/fy-2019-ccdf-allocations-based-on-appropriations>

Figure 2: Federal Funds in FY 2017 and 2018 Allocated to Mississippi Annually for Early Childhood Programs Not in Public Schools Serving Low Income Children 0 through 4 Years Old^{xv, xvii, xx}

Head Start and Early Head Start	\$206,565,616 (2018)
Head Start and Early Head Start (Tribal)	\$2,264,707 (2018)
Child Care Development Block Grant	\$69,169,604 (2018)
Maternal, Infant, and Early Childhood Home Visiting (MIECHV)	\$3,024,210 (FY2018)
TANF transfer funds	\$6,293,116 (2018)
Total	\$287,317,253



The lack of a research based system
that measures the quality of child care programs is a
serious oversight given the amount of federal
funding received by the state for serving children.

**Reasons for Ineligibility to
Participate in the Child Care
Development Block
Grant Program (CCDBG):**

- Child is over 13 years of age or 19 years of age (special needs).
- Household income is over 85% of the SMI.
- Family assets over \$1,000,000.
- Parent, spouse, or biological parent not working at least twenty-five (25) hours per week or enrolled in a full-time educational program or job training program.
- Child is not a Mississippi resident.
- Failure to submit required documents.
- Parent is not cooperating with the Division of Child Support Enforcement, if applicable.

Source: MS Department of Human Services
Child Care Payment Program Policy Manual
(<http://www.sos.ms.gov/adminsearch/ACProposed/00024036b.pdf>)

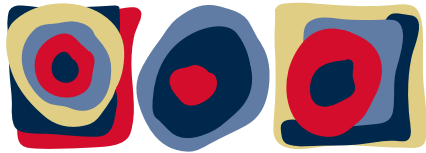
is determined by the age of the child enrolled and a market rate survey conducted by state officials. There is also a co-pay required of parents who participate that is based on income. In Mississippi there are eligibility requirements that parents must meet and each family is reevaluated on an annual basis to determine program eligibility. The list of proof of eligibility is lengthy and outlined in the Child Care Payment Program Policy Manual^{xvi}. There are also criteria that prohibit participation of the children who are often the most in need.

Currently there is no evidence-based program quality measure (Quality Rating and Improvement Scale) for licensed child care centers, including those participating in the CCDBG program other than documentation of meeting basic health and safety licensing regulations issued by the Mississippi Department of Health and completing paper work as required by the Department of Human Services to receive child care certificates. The Department of Human Services has been working with the Community College Board for over two years to implement a system to determine program quality since Mississippi is one of a handful of states without a Quality Rating and Improvement Scale.

Funding for the CCDBG program requires a state match to receive federal dollars. The state must provide funds referred to as Maintenance of Effort Funds and State Share Matching Funds, which totaled \$6,653,547 in FY 2019. Those funds generated \$90,874,442 in federal funds to the state^{xvii}. Both programs, Head Start and CCDBG, are funded through the use of a formula developed at the national level based on the number of children the state records as living in poverty. Given a recent increase in federal funding in CCDBG, there has been a decrease in the number of eligible children on the waiting list to be served. Currently, there is not a breakdown by age of children who receive a child care certificate guaranteeing their eligibility on an annual basis.

"One additional program, Temporary Assistance for Needy Families (TANF), is the monthly cash assistance program for poor families with children under age 18." The state receives the funds from federal appropriations. TANF benefits target children and their needy caretaker relatives who do not have enough income or resources to meet their everyday needs by state program standards^{xviii}. Up to 30% of a state's TANF funds can be transferred to CCDBG for child care^{xix}. The eligibility and ineligibility requirements for participation are the same as those for CCDBG. Diagram A is provided that outlines the types of programs serving children outside the home and funding sources for clarification.

According to data released by Health Resources & Services Administration (HRSA), in FY 2018 Mississippi was awarded \$3,024,410 for the Maternal, Infant and Early Childhood Home Visiting



Lack of state funding in programs serving children prior to their enrollment in kindergarten may be related to the disturbingly high number of kindergarteners **unable to meet learning standards.**

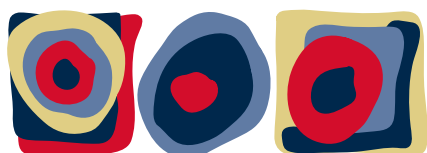
**Number of Children by Age
Receiving Child Care Certificates
(as of April 18, 2019)**

Age of Child	Number Receiving Certificates
0	750
1	2,301
2	2,657
3	2,939
4	2,725
5	2,254
Total	13,626

Source: Mississippi Department of Human Services (2019, April 18) Retrieved from email from Daphne Mooney.

(MIECHV)^{xx} Program. The program is administered through the Mississippi Department of Human Services for the purpose of improving maternal and child health, preventing child abuse and neglect, encouraging positive parenting and promoting child development and school readiness^{xxi}. The program model chosen by the state, Healthy Families America, is evidenced based and on the HRSA approved list. Six hundred ninety-three families in 14 high poverty counties are receiving services from the program. The program is designed to serve high-risk populations. The state is directed to tailor the program to meet the needs of the families in the state. Of the families served in Mississippi, 90.8% are low income, 10% of the households include someone who used tobacco in the home and 9.4% of households reported a history of child abuse or maltreatment^{xxii}.

This brief is intended to present a rationale to support recommendations that will follow in other briefs. The topics will be specific to various scientific truths on why a large percentage of Mississippi's youngest children are doomed to remain in the downward spiral of generational poverty unless significant policy changes are made and reflected in state legislation. As demonstrated, the state's commitment to funding educational programs for the state's youngest children is significantly lacking. Perhaps this is a major point that should be explored when discussing the disturbingly high number of children who enter kindergarten not prepared to meet state learning standards.



- ⁱIPUMS USA, University of Minnesota, www.ipums.org.
- ⁱⁱThe Annie E. Casey Foundation. (2018). 2018 Kids count data book: State trends in child well-being. Baltimore, MD. Retrieved from <https://www.aecf.org/m/resourcedoc/aecf-2018kidscountdatabook-2018.pdf>
- ⁱⁱⁱNational Center on Children in Poverty. (2018). Mississippi demographics of young, poor children. Retrieved from http://nccp.org/profiles/state_profile.php?state=MS&id=9
- ^{iv}Hansen, C. (2018, December 26). States with the highest poverty rates. U.S. News and World Report. Retrieved from <https://www.usnews.com/news/best-states/slideshows/states-with-the-highest-poverty-rates-in-the-us?slide11>
- ^vWolfe, A. (2019, March 28). Meet Mimmo Parisi, the political powerbroker who uses 'alternative data' to paint a rosier picture of Mississippi. Mississippi Today. Retrieved from <https://mississippitoday.org/2019/03/28/meet-mimmo-parisi-the-political-powerbroker-who-uses-alternative-data-to-paint-a-rosier-picture-of-mississippi/>
- ^{vi}National Center on Children in Poverty. (n.d.). Early Care and Learning. Retrieved July 17, 2019 from <http://nccp.org/topics/earlycare-andlearning.html>
- ^{vii}Early Learning Collaborative Act, Mississippi State Code §37-21-51 (1972 & Supp. 2013). Retrieved from <http://billstatus.ls.state.ms.us/documents/2013/pdf/SB/2300-2399/SB2395SG.pdf>
- ^{viii}Mississippi Department of Education. (2018, December 20). State board of education approves five new early learning collaboratives [Press release]. Retrieved from <https://www.mdek12.org/ocgr/news/2018/12/20/State-Board-of-Education-Approves-Five-New-Early-Learning-Collaboratives>; and interview with Jill Dent, November 2019
- ^{ix}Mississippi Department of Education. (2018, November). Fall 2018 kindergarten readiness assessment results. Retrieved from <https://www.mdek12.org/OPR/Reporting/Assessment/2018-19>
- ^xHarris, B. (2019, April 3). After years of neglect, Mississippi takes baby steps to boost school readiness. The Clarion Ledger. Retrieved from <https://hechingerreport.org/after-years-of-neglect-mississippi-takes-baby-steps-to-boost-school-readiness/>
- ^{xi}Early Learning Collaborative Act, Mississippi State Code §37-21-51 (1972 & Supp. 2013). Retrieved from <http://billstatus.ls.state.ms.us/documents/2013/pdf/SB/2300-2399/SB2395SG.pdf>
- ^{xii}Mississippi Department of Education. (2018, November). Fall 2018 pre-kindergarten assessment results for early learning collaboratives and other four-year-old classrooms. Retrieved from <https://www.mdek12.org/OPR/Reporting/Assessment/2018-19>
- ^{xiii}Early Learning Collaborative Act, Mississippi State Code §37-21-51 (1972 & Supp. 2013). Retrieved from <http://billstatus.ls.state.ms.us/documents/2013/pdf/SB/2300-2399/SB2395SG.pdf>
- ^{xiv}U.S. Department of Labor. (n.d.). Mississippi Head Start. Retrieved July 17, 2019 from <https://www.benefits.gov/benefit/1918>
- ^{xv}U.S. Department of Health & Human Services. Head start program facts fiscal year 2017. Retrieved from <https://eclkc.ohs.acf.hhs.gov/about-us/article/head-start-program-facts-fiscal-year-2018>
- ^{xvi}Mississippi Department of Human Services, Division of Early Childhood Care & Development. (2019, April 1). Child care payment program policy manual. Retrieved from <http://sos.ms.gov/adminsearch/ACproposed/00024036b.pdf>
- ^{xvii}U.S. Department of Health & Human Services. (2018, May 2). FY2018 CCDF allocations (based on appropriations). Retrieved from <https://www.acf.hhs.gov/occ/resource/fy-2018-ccdf-allocations-based-on-appropriations>
- ^{xviii}Mississippi Department of Human Services. (n.d.). Temporary assistance for need families (TANF). Retrieved July 17, 2019 from <https://www.mdhs.ms.gov/economic-assistance/tanf/>
- ^{xix}U.S. Department of Health & Human Services. (2018, May 30). Fiscal year 2018 federal child care and related appropriations. Retrieved from <https://www.acf.hhs.gov/occ/resource/fiscal-year-2018-federal-child-care-and-related-appropriations>
- ^{xx}U.S. Department of Health & Human Services, Health Resources & Services Administration, Maternal & Child Health Bureau. (n.d.). Maternal, infant, and early childhood home visiting program FY2018 formula funding awards. Retrieved from <https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting/fy18-home-visiting-awards>
- ^{xxi}U.S. Department of Health & Human Services, Health Resources & Services Administration, Maternal & Child Health Bureau. (n.d.). Home visiting. Retrieved July 17, 2019 from <https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting-overview>
- ^{xxii}U.S. Department of Health & Human Services, Health Resources & Services Administration, Maternal & Child Health Bureau. (n.d.). Mississippi MIECHV program FY2017. Retrieved from <https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting/home-visiting-program-state-fact-sheets>

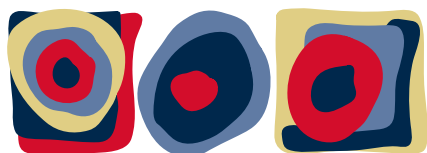


Diagram A: Program Income Funding Streams for Pre-K Classrooms Serving 4 Year-Old Children

Early Learning Collaborative Act 2013 with local match (2019-2020 school year) 3,016 4 year-old children enrolled, \$6,699,517 state appropriation

Public School PreK (not state funded) (2018):
5,401 children enrolled this year, funding options: ESSA (federal fund, tuition or both)

Private (for profit/non-profit centers)
Average center-based care (tuition only) \$4,670 yearly for children 4 years of age⁵

Child Care Development Block Grant (CCDBG) serves children 0-12 years of age in participating licensed child care centers and family homes: Family eligibility rules apply. Must work 25 hours per week or be in school, provide copay. Income for family of 3 cannot exceed \$26,211 annually. Average number of children served 17,000⁴

Head Start (2018): total funded enrollment allocation \$206,565,616 funded by federal government serves 23,640 total children: Income for a family of three cannot exceed \$20,420 annually. National percent of 4 year-old is 40% which equals 9,456 in Mississippi²

Approximately 812 centers of the 1,481 licensed centers receive CCDBG funds are licensed to serve 4 year-old children³

Approximately 38,000-40,000 children born a year in Mississippi

Giving \$2,150 per child (times 2 with matching funds) in state fully funded Pre-K; \$33,950,000 amount in statute when fully funded minus 5% administrative cost with (Early Learning Collaborative Act of 2013)

15,000 children (with additional local match)

Public School (non-state funded) Pre-K

5,401 children

Private child care centers receiving CCDBG certificates (based on 2017 figures)

13,626 children

Head Start serving 4-year old (children based on 2017 figures)

9,561 children

Total estimate shows approximately 79% of MS 4-year-old children in some type of early childhood program.

Number Receiving CCDBG childcare certificates as of April 18, 2019

Age

0	750
1	2,301
2	2,657
3	2,939
4	2,725
5	2,254
Total	13,626

MS Department of Human Services,
April 18, 2019

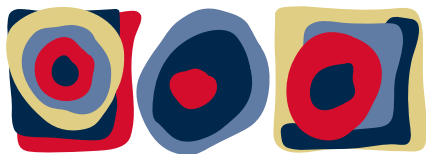
¹Head Start 2018 Fact Sheet, ACR (does not reflect funding for MS Band of Choctaw Indians) ²MSHeadStart/Benefits.gov ³MS Department of Health Child Care Licensing Division ⁴www.acf.hhs.gov/occ/resource/fy.2017-preliminarydata.table-1 ⁵www.ced.org/assets/reports/childcareimpact/infographics/revised/Mississippi%20Econ%20Impact%20Infographic%201312019.pdf

Defining and Implementing a High Quality Early Childhood Education Program

This brief is the second of a five part series produced by The Graduate Center for the Study of Early Learning. Information presented by four internationally recognized early childhood experts, brain scientists, and a Nobel Prize winning economist who presented in the state over the past two years. In their remarks each pointed to the importance of investing in early childhood education to build a strong workforce and viable economic base for the future. The series was held in conjunction with the University of Mississippi, North Mississippi Education Consortium, The Phil Hardin Foundation and MS Kids Count during the 2017-2019 academic years. Each brief will provide the reader with highlights provided by the speaker and reflections of the Co-Directors of the Graduate Center for the Study of Early Learning, Drs. Cathy Grace and Melody Musgrove as the research cited relates to Mississippi. The speaker series was funded by The W.K. Kellogg Foundation. The second brief is a summary of the remarks given by Drs. Sharon and Craig Ramey. The information in this brief was delivered in a presentation on December 12, 2017.

Dr. Craig Ramey recently retired as Research Professor and Distinguished Research Scholar of Human Development, Fralin Biomedical Research Institute at Virginia Tech, Research Professor of Psychology and Neuroscience, College of Science, Virginia Tech, Research Professor of Human Development, College of Liberal Arts and Human Science, Virginia Tech and Research Professor of Pediatrics, Virginia Tech Carilion School of Medicine. Prior to his tenure at Virginia Tech, he served at Georgetown University as the Founding Director, Georgetown University Center on Health, and Education Distinguished Professor, Health Studies and Psychiatry. Dr. Ramey has received many awards during his career including the Fordham University Excellence in Early Childhood Award, 2013 and the 2007 Society for Research in Child Development Award for Distinguished Contributions to Public Policy for Children. He has authored hundreds of peer reviewed research briefs and several books with his wife Dr. Sharon Ramey. Dr. Ramey is the co-principal researcher on The Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE). These research studies are the most referenced and reviewed of any on the impact of high quality early childhood education on life span outcomes.

Dr. Sharon Ramey has recently retired as the Research Professor and Distinguished Research Scholar, Fralin Biomedical Research Institute at Virginia Tech, Research Professor, Department of Psychology, College of Science, Virginia Tech Professor of Psychiatry and Behavioral Medicine, Virginia Tech Carilion School of Medicine. She previously served as the Georgetown University Susan H. Mayer Professor of Child and Family Studies, School of Nursing and Health Studies Professor of Psychiatry, School of Medicine Director, Center on Health and Education Director, The Science of Effective Early Childhood Education Program. She has conducted research and written numerous articles on the development and testing of highly promising treatments for children with disabilities and at-risk conditions; and on improving the provision of health, education, and social services and strengthen natural community supports, to benefit children and families which is considered the intersection between the new field of implementation science and public policy/public opinion. She has written several books with her husband, Dr. Craig Ramey.



Dr. James Heckman, Noble Prize winning economist, reviewed data from the Abecedarian Early Care Project. He arrived at the rate of investment in high quality birth-to-five programs for low-income children at a **13% per year return on investment.**

Components of the high quality Carolina Abecedarian Project (ABC):

- Prenatal and birth visits
- Good stable nutrition
- Family social services
- Free primary health care
- Child development assessed
- Enriched caregiving
- Language priority
- Individualized, comprehensive curriculum
- Conversational Reading
- Year-round attendance

Source: Comments made by Dr. Craig Ramey during his presentation in Jackson, MS, December 12, 2017.

The Carolina Project, often referred to as the Abecedarian Early Childhood Project (ABC) and the Carolina Approach to Responsive Education (CARE), is one of the most widely referenced studies in the world on the impact of a high quality early childhood program on the life trajectory of participants. Drs. Craig Ramey, Joe Sparling and Frances Campbell have led researchers in following the life outcomes of individuals born between 1972-77 who participated in the program, both in the treatment and control groups. It is important to note that of participants in both the treatment and control groups, 100% of the children were living in poverty, and the majority were African American (94% in Abecedarian and 100% in control). The children started as infants in the program and continued until school entrance with summer sessions as the children reached school age. Children's progress was monitored by researchers over time with follow-up studies conducted at ages 12, 15, 21, 30, and 35 years. Dr. James Heckman, Nobel Prize winning economist, also reviewed the longitudinal data and arrived at the rate of investment in high quality birth-to-five programs for disadvantaged children at a 13% per year return on investment. Upon review of the economic benefits to individuals as well as society, the positive life trajectory of those who participated in the project as compared to those who did not can be categorized by health, family, income and health outcomesⁱ. (see Figure 1)

In 2014, Dr. Heckman studied program participants, focusing on their health, at this time the participants were in their 30's. Actual blood samples of participants were drawn and analyzed, and a physician conducted examinations on all the participants, without knowing which people were in the control group. The new study determined that those receiving early care with the Abecedarian program have lower rates of prehypertension in their mid-30s than those in the control group. It was also found that they have a significantly lower risk of experiencing total coronary heart disease (CHD)—defined as both stable and unstable angina, myocardial infarction, or CHD death—within the next 10 years. When compared to the control group, males attending the Abecedarian program have lower incidences of hypertension in their mid-30s. In addition, the men participating in the Abecedarian Project less frequently experience “combinations of both obesity and hypertension, and none exhibited the cluster of conditions known as ‘metabolic syndrome,’ which is associated with greater risk of heart disease, stroke, and diabetes.”ⁱⁱ

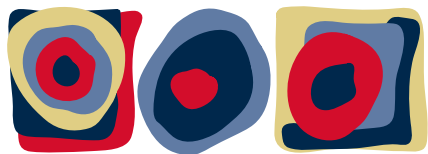
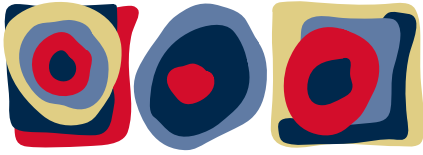


Figure 1: Education, Family, Income and Health Outcomes^{xv, xvii, xx}

Outcome	Carolina Project	Control (non-participant)
High School Graduate	83%	72%
College Graduate	23%	6.0%
Full-time Employment	75%	53%
Use of Public Assistance	3.9%	20.4%
Head of Household	78.9%	65.3%
Unmarried, 2+ children	26%	38.8%
Excellent Health	69%	59%
Annual Earned Income	\$33,400	\$20,700

Source: Adapted from Campbell, et.al., Developmental Psychology, 2012 & Presentation by Dr. Craig Ramey, Jackson, MS, December 11, 2017.



How the Carolina Project Results Resonate in Mississippi

Figure 2:

Counties with high child poverty in 2017 (49.5 %-60.2%) and Kindergarten Entrance Scores 2015 (Scale Score Average)^{xii} Who Failed to Meet 2019 Reading/Language Arts Performance Standards

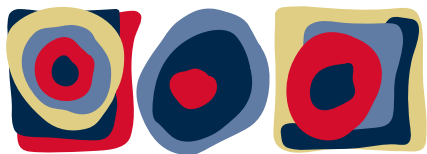
Name of County	Kindergarten Entrance Score 2015 (530 is MDE set score that indicates proficiency in third grade)	% Who Failed to Meet 2019 Performance Levels
Claiborne County	474	26.1%
Coahoma County	536	37.3%
Holmes County	461	49.1%
Humphreys County	480	49.6%
Issaquena County (South Delta)	492	53.7%
Leflore County	486	61.4%
Quitman County	525	35.9%
Sharkey County (South Delta)	492	53.7%
Sunflower County	484	21.7%

According to the National Center on Children in Poverty (NCCP) in 2016, 34% (37,496) of young children in Mississippi, under age 3, lived in poor families and 34% (40,983) of young children, ages 3 through 5, lived in families classified as poor. In examining racial and ethnic demographics of the children in poverty, NCCP reports in 2016, 52% (50,737) of young black children lived in poor families as compared to 18% (20,516) of young white children and 39% (4,121) of young Hispanic children who were living in poor familiesⁱⁱⁱ. According to the US Department of Health and Human Services, in 2019 the poverty threshold for a family of 4 with 2 children is \$25,750 and in 2016 it was computed for a family of 4 with 2 children as \$24,339^{iv}.

State data reveals the counties populated with a greater concentration of children in poverty than others. This puts an exceptionally high burden on communities that already have limited resources to meet the comprehensive needs of poor children without the support of state and federal partners.

While children living in poverty reside in all counties, those listed in Figure 2 are possibly the most in need of intentional partnerships designed with specific goals, accountability measures, funding responsibilities and timelines. In examining the gains of those who participated in the Carolina Project long and short term, the implementation of pilots based on the model are within the scope of funding from the workforce development funds as well as the Temporary Assistance to Needy Families (TANF) grant, both programs that primarily receive federal funds for operating.

A closer look at Figure 2 reveals the average score of children entering schools in the low income counties who took the state kindergarten entrance assessment in 2015 were all below the cut score of 530 with the exception of Coahoma County Schools (536). The average score of children entering schools in the high child poverty counties who took the state kindergarten entrance assessment in 2018 were all below the cut score of 530 with the exception of Coahoma County Schools (536.) The Mississippi Department of Education set the score of 530 after extensive research determined if a child enters kindergarten with a score of 530 or higher, the child is likely to meet or exceed the third grade proficiency score required to pass in order to enter the 4th grade. The majority of children who started kindergarten in these counties in 2015 took the 2019 Mississippi Academic Assessment in April 2019. The scores reveal a high percentage of children



The number of individuals living in high poverty counties who have been ruled eligible and **the payments to them are significant.**

in the highlighted counties did not meet the required performance levels 1 and 2 that ensures their promotion to the fourth grade on their first attempt^{vii}. It should be noted that the number of children in each county who are mobile as well as teacher and administrator turnover could impact the results.

As shown in Figure 3, in 2018-19 in these same counties, the kindergarten entrance scores in fifty percent of the counties have shown improvement or stayed the same. It should be noted that Greenwood School District in Leflore County (505), Sunflower County Schools (524) as well as Coahoma County Schools are all part of the state funded pre-k collaborative program. School districts in the other counties are not part of the state funded collaborative program^{ix x}. While it is too early to state that access to high quality pre-kindergarten is the “silver bullet”, the presence of state funded-pre-kindergarten in Coahoma County, Sunflower County, and Greenwood School Districts (located in Leflore County) can be cited as one primary reason entering kindergarteners scored higher on average than did children in other targeted counties that do not have the program.

The health of Mississippians has long been a concern of residents across the state, as highlighted in Figure 4. Our collective health issues are costing the state millions of dollars annually. One of the results of the Abecedarian project was improved health outcomes for participants as compared to the control group individuals. The Mississippi counties identified as those with the greatest number of children in poverty also have a significant number of residents receiving monthly Supplemental Social Security Income payments for primarily health related disabilities. The total of those receiving payments by age as well as the total for each county are referenced in Figure 4.

The loss of tax revenue from individuals who are on the disability rolls rather than employment rolls calls for state and local investments in interventions such as those outlined in the Carolina Project.

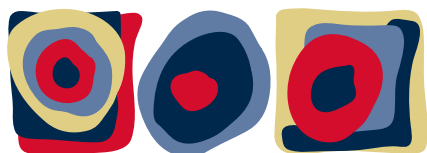


Figure 3: Counties with high poverty in 2017 and a comparison of 2015-16 and 2018-19 Kindergarten Entrance Scores

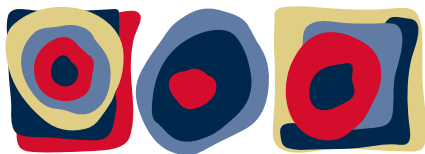
Name of County	Kindergarten Entrance Score 2015	2018 Kindergarten Entrance Scores
Claiborne County	474	504
Coahoma County	536	536
Holmes County	461	471
Humphreys County	480	495
Issaquena County (South Delta)	492	369
Leflore County	486	483
Quitman County	525	494
Sharkey County (South Delta)	492	369
Sunflower County	484	521

(530 is MDE set Kindergarten score that indicates proficiency in third grade)

Figure 4: 2016 SSI Payments Reported by the Social Security Administration, 2016^{xi}

(Aged, blind and disabled are included in the total)

Name of County	Total #	# by Age: Under 18 years	18-64 years	65+ years	Total Amount of Payments
Claiborne County	687	85	455	147	\$374,000
Coahoma County	2,035	349	1,232	454	\$1,075,000
Holmes County	1,943	275	1,149	519	\$1,019,000
Humphreys County	1,042	241	621	180	\$591,000
Issaquena County	60		41		\$27,000
Leflore County	2,582	461	1,653	468	\$1,429,000
Quitman County	650	83	423	144	\$335,000
Sharkey County	405	39	261	105	\$198,000
Sunflower County	1,948	371	1,164	413	\$1,028,000
Total	11,352	1,904	6,999	2,430	\$6,076,000



Now What?

The following are recommendations for further study and/or action:

- Increase funding to the pre-kindergarten collaborative programs to meet the figure set in law;
- Allocate additional TANF funds to increase the voluntary home visiting programs to families in the counties as identified as most impoverished in the state;
- Allocate workforce development, TANF and Child Care Development funds to create a pilot model programs based on the ABC model;
- Conduct thorough program and financial audits of TANF subcontracts over the past 4 years to determine if the scopes of work have been met;
- Rethink how ESSA funds can be used with more investment in summer learning for all children as well as early childhood programs beginning as young as infancy through home visiting programs;
- Fully fund the Mississippi Adequate Education Act (MAEP) to provide financial stability to public schools across the state which includes the most impoverished counties;
- Increase teacher salaries as an incentive to retain high quality teachers, especially in counties where poverty is high;
- Increase the TANF funds allocated for an increase in access to early childhood programs for eligible children;
- Remove the barrier for a child to participate in a TANF funded program that is related to the parent's lack of participation in the child support program.

ⁱThe Carolina Abecedarian Project, Frank Porter Graham Child Development Institute, University of North Carolina. (n.d.) Groundbreaking follow-up studies. Retrieved from <https://abc.fpg.unc.edu/groundbreaking-follow-up-studies>

ⁱⁱThe Carolina Abecedarian Project, Frank Porter Graham Child Development Institute, University of North Carolina. (n.d.) Groundbreaking follow-up studies. Retrieved from <https://abc.fpg.unc.edu/groundbreaking-follow-up-studies>

ⁱⁱⁱNational Center on Children in Poverty. (2018). Mississippi demographics of young, poor children. Retrieved from http://nccp.org/profiles/state_profile.php?state=MS&id=9

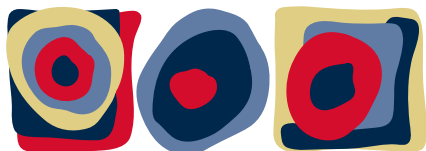
^{iv}Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. (2019). 2019 Federal poverty guidelines. Retrieved from <https://aspe.hhs.gov/2019-poverty-guidelines>

^vMississippi Department of Education. (2018, November). Fall 2018 pre-kindergarten assessment results for early learning collaboratives and other four-year-old classrooms. Retrieved from <https://www.mdek12.org/OPR/Reporting/Assessment/2018-19>

^{vi}Mississippi Department of Education. (2019). Kindergarten readiness assessment. Retrieved from https://mdek12.org/OSA/K_Readiness

^{vii}Mississippi KIDS COUNT. (2019). 2019 Fact Book. Retrieved from https://kidscount.ssrc.msstate.edu/wp-content/uploads/2019/02/2019.MS_KC-Factbook_web.pdf

^{viii}Office of Retirement and Disability Policy, Social Security Administration. (2016). Number of recipients in state (by eligibility category, age, and receipt of OASDI benefits) and amount of payments, by county, December 2016. Retrieved from https://www.ssa.gov/policy/docs/statcomps/ssi_sc/2016/ms.html



Brief 3

Human Development is Economic Development

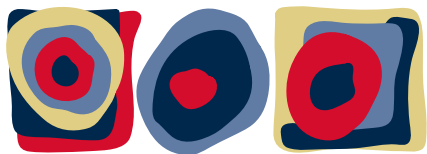
This brief is the third of a five part series produced by The Graduate Center for the Study of Early Learning. Information presented by four internationally recognized early childhood experts, brain scientists, and a Nobel Prize winning economist who presented in the state over the past two years. In their remarks each pointed to the importance of investing in early childhood education to build a strong workforce and viable economic base for the future. The series was held in conjunction with the University of Mississippi, North Mississippi Education Consortium, The Phil Hardin Foundation and MS Kids Count during the 2017-2019 academic years. Each brief will provide the reader with highlights provided by the speaker and reflections of the Co-Directors of the Graduate Center for the Study of Early Learning, Drs. Cathy Grace and Melody Musgrove as the research cited relates to Mississippi. The speaker series was funded by The W.K. Kellogg Foundation. The third brief is a summary of the remarks given by Nobel Prize winning economist, Dr. James Heckman. Dr. Heckman is the Henry Schultz Distinguished Service Professor of Economics at the University of Chicago, and an expert in the economics of human development.

As an economist, Dr. James Heckman looks at the efficiencies in the investments we make as a society. In doing so, he has become world renowned for his studies on the economic value in investing in high quality early childhood education beginning at birth.

Efficiencies In Investments We Make as a Society

- The effective way to alleviate poverty and inequality: skills, not handouts.
- We can reduce inequality and promote inclusion and social mobility by solving the skills problem.
- A comprehensive approach to skill development makes dollars and sense.
- The importance of the early years: skills beget skills.
- A skilled workforce is a flexible, adaptable, and productive workforce.

Source: Comments made by Dr. James Heckman during his presentation in Jackson, MS, January 25, 2018.



Research results indicate that a high quality birth through five program for disadvantaged children can deliver a
13% per year return on investment.

-Dr. James Heckman

Long Term Impact of High Quality Early Childhood Education is a Positive Economic Driver

- The family is the cornerstone of effective skill development.
- Supporting families in engaging and nurturing their children is key to success in education and learning at all stages of a child's life.
- Character and cognition are skills, not traits that are fixed at birth.
- Family environments that adversely affect parenting are the true measure of poverty.

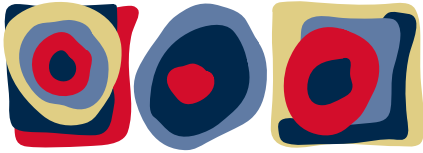
Source: Comments made by Dr. James Heckman during his presentation in Jackson, MS, January 25, 2018.

Dr. Heckman and his colleagues studied the effects of two identical, randomized-control trials of preschool experiments conducted in North Carolina: The Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE). These programs served disadvantaged African-American children from birth to age five. The program components included nutrition, access to health care and early learning. Dr. Heckman's Life Cycle Benefits analysis examined the programs which began in the 1970's by analyzing data collected on the participants throughout childhood and into their adult years. The benefits analyzed included a wide variety of life outcomes, such as health, the quality of life, participation in crime, labor income, IQ, schooling and increases in mothers' labor income as a result of subsidized childcare.

The program offered comprehensive developmental resources to disadvantaged African-American children from birth to age five, including nutrition, access to health care and early learning. Children were randomly assigned into either the treatment group or the control group. The treatment group had the benefits of the ABC program and the control group had access to alternatives such as lower quality center-based care or in-home care. He reviewed the data collected on children after 8 years of age on both groups targeting cognitive and socio-emotional skills, education, and family economic characteristics. The data collection continued at ages 12, 15, 21, and 30 years.

The research shows that high-quality birth-to-five programs for disadvantaged children can deliver a 13% per year return on investment—a rate substantially higher than the 7-10% return previously established for preschool programs serving 3- to 4-year-olds. Significant gains are realized through better outcomes in education, health, social behaviors, and employmentⁱ.

The analysis of the data showed the ABC/CARE Programs improved the economic prospects of children and their mothers who were enrolled in the program. By participating in the program, mothers were able to enter the workforce and increase earnings while their children gained the foundational skills to make them more productive in the future workforceⁱⁱ. The ABC/CARE Programs were not inexpensive, but an investment that paid big dividends. While elements of the ABC/CARE programs exist today through a number of often disjointed home visiting, child well-being, nutrition, early learning, childcare and preschool programs, policymakers would be wise to coordinate these early childhood resources into a series of developmental supports for disadvantaged children with access to allⁱⁱⁱ.



Developing a High Quality Comprehensive Early Childhood System is within Reach

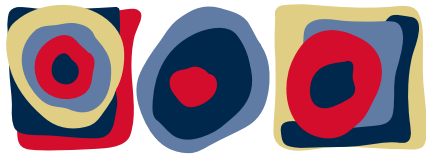
Dr. Heckman provided guidance to state decision makers on the importance of a coordinated system for early care and education that addresses all components necessary for children to experience which leads to a healthy start in life. Several attempts have been made throughout the years to develop a comprehensive early childhood system. The latest was the plan released in 2016 by the State Early Childhood Advisory Council (SECAC) of Mississippi, A Family Based Unified and Integrated Early Childhood System^{iv}. In 2019 the Mississippi Community College Board was awarded a Professional Development Grant Birth through 5 (PDG B-5) from the Administration for Children and Families (ACF) in Washington for \$10.62 million. According to ACF, the first year of the PDG B-5 funded state-level needs assessments and strategic planning to optimize existing early childhood education (ECE) resources. The grants focused on three major activities: maximizing parental choice, improving transitions within early care and learning programs and with elementary schools; and improving overall quality of ECE programs^v. A second year request for funding was not extended (ffyf.org, December 20, 2019). Information gathered from the state –level needs assessment is a starting point in making the decision to develop and implement a system that leverages funding from different funding streams is a next step for policy makers and agency directors to consider.

Federal funding is the primary source of revenue in the state for providing educational and health services for low income children under the age of 5. According to the National Center for Children in Poverty, 59% (135,899) of young children live in low-income families^{vi} in Mississippi under the age of 6 live in low income or economic conditions defined as poverty. This is a critical point in considering how a system would be financed.

Funding through the Child Care Development Block Grant (CCDBG) which is designed to provide child care to eligible low income working families or to parents in school is a primary funding source. In order to receive funding for the CCDBG program a state match to receive federal dollars is required. The state must provide funds referred to as Maintenance of Effort Funds and State Share Matching Funds, which totaled \$6,653,547 in FY 2019. Those funds generated \$90,874,442 in federal funds to the state^{vii}.

**The use of the federal allocation of funds
by state for early childhood related
services is defined at the state level.**

In Mississippi, the Department of Human Services is the lead agency for developing a child care plan financed through CCDBG^{viii}. The plan^{ix},



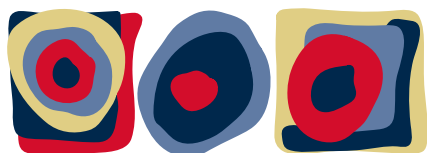
following federal guidelines, is written and must be approved at the federal level by the Child Care Bureau for funds to be allocated^x. Additional funding through the Temporary Assistance for Needy Families (TANF) program is also available for child care under certain conditions. This program is designed to support eligible individuals with opportunities to gain employment or increase their wage earning potential if they are in an under employed position. Included in the supports is payment for child care to child care providers who meet program requirements^{xi}. The Department of Human Services is also responsible for developing and submitting a plan to the Administration of Children and Families at The US Department of Health and Human Services for their approval on how TANF dollars will be spent.

Head Start funding plays a critical role in providing early care and education services to pre-school age children in the state. Currently 21 agencies receive funds for either Head Start, Early Head Start or both. In 2018, Mississippi received \$206,565,616 for Early Head Start and Head Start which served 23,640 and \$2,264,707 for the Mississippi Band of Choctaw Indians which served 268^{xii}. Head Start regulations are more rigorous than state licensing standards and must be followed if funding is maintained. Periodic reviews are made by the Head Start Bureau to ensure regulations are followed.

Dr. Heckman stressed the importance of home visiting programs in the continuum of services afforded families to support parents in the provision of providing an emotionally healthy home environment. Mississippi received \$2,907,916 through the Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV Program) in FY 2019^{xiii}. The MIECHV Program is administered by the Health Resources and Services Administration (HRSA) in partnership with the Administration for Children and Families (ACF)^{xiv}. The program, administered by the Mississippi Department of Human Services, is offered to pregnant women and those with children up to kindergarten entry and must use a research based curriculum. In 2018, the program reached 671 homes in fourteen counties and provided 8,799 home visits using the Healthy Families America curriculum^{xv}.

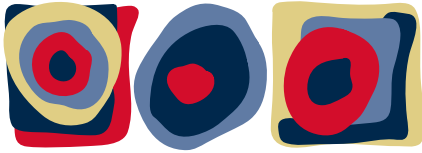
In public schools providing pre-kindergarten programs, a combination of funding sources is utilized. Since the pre-kindergarten programs started in 2014, the state has appropriated \$6,699,517 resulting in 3,016 4 year-old children enrolled in the 2019-20 school year (correspondence with Jill Dent, November, 2019). Other sources of funding including parent tuition and federal funding account for an additional 5,908 children being served^{xvi}.

First Steps is the state's early intervention program housed at the



Mississippi Department of Health. The program is designed to provide active and ongoing services to children birth to three years of age identified with potential developmental delays and their families. Primary funding for First Steps is derived from Medicaid reimbursements and the U.S. Department of Education. Current funding is \$4.1 million dollars. The funding pays the salaries of the regional interventionists, salaries of the central office staff, direct services and other activities required by law. Currently state funds are provided through a transfer of \$700,000 from the Mississippi Department of Education, \$385,000 from the Department of Health and \$170,000 from the Health Care Fund (tobacco settlement funds)^{xvii}.

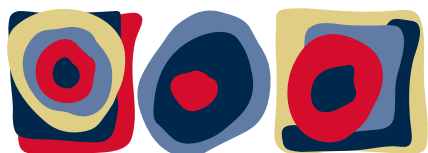
Given the brief descriptions of programs currently implemented in the state, it is apparent opportunities are present for developing a system of coordinated care and education for a large number of children should leadership place a high priority on doing so. Utilizing a state driven effort to devise a plan that is not one-time funding dependent is the most sustainable approach. The pre-kindergarten collaborative program design is recognized as one of the best in the country meeting nine out of ten research benchmarks for high quality as defined by the National Institute for Early Education Research in 2018^{xviii} and as of 2019 met all 10 benchmarks^{xix}. This approach, along with the long recognized successful comprehensive Head Start Program Model, are two examples for decision makers to examine for a broader approach than what currently exists.



Kindergarten Entrance Data Remains Troubling

According to the Mississippi Department of Education since 2017 only 36% of children are entering kindergarten at the score determined by the state as "kindergarten ready"^{xx}

This statistic is as confounding as it is alarming. With all the program components described as well as smaller efforts funded through philanthropic and local funds, why are we unable to move the number significantly upward? There are numerous possibilities, but lack of child outcome data is one that must be mentioned. With the exception of the pre-kindergarten collaboration program and other funded pre-kindergarten programs in public schools, no child outcome data is reported. Collection and use of data to determine program strengths and weaknesses is not collected in a universal manner using a research-based observation process. This would provide clear guidance on how to improve program offerings to program managers and directors. While the examples cited are important, the biggest data gap is in the lack of identification of children who are not attending any early childhood education program and not receiving developmentally appropriate learning experiences at home prior to school entry. While there are models on how this can be done, currently none are being employed state-wide for the purpose of comprehensive planning.



Now What?

The following recommendation is for further study and/or action:

The formation of a work group affiliated with the Mississippi State Early Childhood Advisory Committee to review all the data collected through current program efforts on early care and education programs, and working with the Departments of Education, Health, Human Services and Mental Health devise a plan with a timeline, funding mechanism and outcome measures based on evidence based practices to present to the Governor, Lt. Governor and other elected officials they deem by August 2020 for their review and action should it be required.

ⁱHeckman, J. Research summary: the lifecycle of an influential early childhood program. Retrieved from <https://heckmanequation.org/resource/research-summary-lifecycle-benefits-influential-early-childhood-program/>

ⁱⁱIbid

ⁱⁱⁱIbid

^{iv}State Early Childhood Advisory Council, (2016) A Family-Based Unified and Integrated Early Childhood System. https://secac.ms.gov/wp-content/uploads/2016/12/EarlyChildCareSystemDescription-Formatted-12-06-16_2.pdf

^v<https://www.ffyf.org/45-states-and-territories-to-receive-preschool-development-grants/>

^{vi}http://www.nccp.org/profiles/MS_profile_8.html

^{vii}<https://www.acf.hhs.gov/occ/resource/fy-2019-ccdf-allocations-based-on-appropriations>

^{viii}<https://www.mdhs.ms.gov/early-childhood-care-development/>

^{ix}<https://www.mdhs.ms.gov/wp-content/uploads/2019/02/MS-CCDF-State-Plan-2019-2021.pdf>

^x<https://www.acf.hhs.gov/occ>

^{xi}<https://www.benefits.gov/benefit/613>

^{xii}<https://eclkc.ohs.acf.hhs.gov/about-us/article/head-start-program-facts-fiscal-year-2018>

^{xiii}<https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting/fy19-awards>

^{xiv}<https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/program-brief.pdf>

^{xv}<https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/ms.pdf>

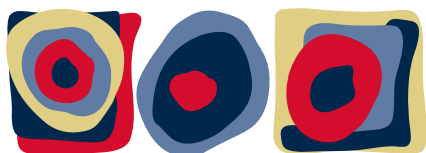
^{xvi}Conversation with Dr. Jill Dent, Mississippi Department of Education, 2019

^{xvii}First Steps Interagency Council Meeting, (April 12, 2019) Jackson, MS

^{xviii}http://nieer.org/wp-content/uploads/2019/08/YB2018_Full-ReportR3wAppendices.pdf

^{xix}Conversation with Dr. Jill Dent, Mississippi Department of Education, December, 2019

^{xx}https://www.mdek12.org/sites/default/files/Offices/MDE/OEA/OPR/2020/fall-2019-kindergarten-readiness-results_final_10.29.19.pdf



Brief 4

What Happens to Young Children Impacts the Developing Brain

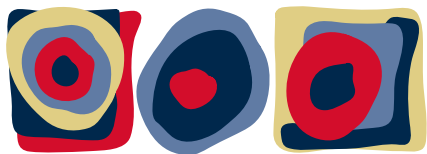
This brief is the fourth of a five part series produced by The Graduate Center for the Study of Early Learning. Information presented by four internationally recognized early childhood experts, brain scientists, and a Nobel Prize winning economist who presented in the state over the past two years. In their remarks each pointed to the importance of investing in early childhood education to build a strong workforce and viable economic base for the future. The series was held in conjunction with the University of Mississippi, North Mississippi Education Consortium, The Phil Hardin Foundation and MS Kids Count during the 2017-2019 academic years. Each brief will provide the reader with highlights provided by the speaker and reflections of the Co-Directors of the Graduate Center for the Study of Early Learning, Drs. Cathy Grace and Melody Musgrove as the research cited relates to Mississippi. The speaker series was funded by The W.K. Kellogg Foundation. The fourth brief is based on a presentation made by Dr. Pat Levitt on February 6, 2018. Dr. Levitt is the Simms/Mann Chair on Developmental Neurogenetics at Children's Hospital, Los Angeles, the WM Keck Professor of Neurogenetics at the University of Southern California, the Co-Scientific Director, National Scientific Council for the Developing Child and Senior Fellow, Center for the Developing Child, Harvard University.

***"If you always do what you always did,
you will always get what you always got."***

-quote attributed to Albert Einstein

With the advances in brain research over the past few years, we are able to actually see the development of the architecture of the brain. From birth to two years of age, 1 million synapses are formed per second^{i,ii}. As we grow older, experiences shape the brain architecture by the over production of synapses which is followed by pruning, or removing the synapses not strengthened through repeated and intentional use. Research reported by Jon Bardin and colleagues indicate there are critical periods of brain and child development. The critical periods identified are referred to as Open and Shut periods. The names, Open and Shut, are given to this period due to the fact that the brain's plasticity allows for the brain architecture in certain areas to grow and strengthen, provided experiences are there to stimulate the growth before becoming atrophiedⁱⁱⁱ. The opportunities to change the architecture of the brain are influenced by the experiences a child encounters during the first five years and decrease with age. With this in mind, powerful experiences, no matter negative or positive, matter in the development of brain functions^{iv}.

According to The National Academy of Medicine, children's development of cognitive, affective, and behavioral capacities is best promoted when the contexts that surround them are strong and healthy. National prosperity is dependent on the prosperity of families that influence the economic health of communities and the quality of life for its residents. Policies and programs investing in family and community are often more cost-effective than services provided only to children, because they affect a broader population of children and the adults in their lives, and are more likely to have longer-term effects^v. The elements that contribute to the healthy development of the brain are the same that make



What Policy Changes Can Mean: Invest Early

By investing early in the education of children there is:

- a reduction in the need for special education services and supports
- an increase in emotionally strong, learning ready children with sound executive function

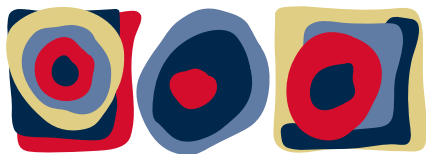
The work of Dr. Pat Levitt centers around the way the brain is formed prior to and after birth and how that is shaped by early childhood experiences. From his research and that of his colleagues, he has identified seven core elements related to brain development that policy makers should consider when determining the most effective way to invest in economic growth.

up the components of prosperous communities. Since the economic development of communities is dependent on the health and prosperity of the families residing in communities, comprehensive services available to all families is a strategy that has shown to more than pay for itself.

The Core Story

1. Child development is THE foundation of prosperous communities.
2. Brains are built over time, from the bottom up (skill begets skill).
3. Genes and experiences together build brains (serve and return relationships).
4. Cognitive, social and emotional development are inextricably intertwined.
5. Toxic stress damages brain architecture.
6. Resilience is not an internal character strength, but rather is built through combined impact of genes and experiences of a child.
7. For many functions, the brain's capacity for change decreases over time (cost-effectiveness factor)-but not all functions are impacted equally.

Dr. Pat Levitt



Investing Early Reduces Need for Special Education

**Figure 1: Services Provided by
First Steps Early Intervention**

Service Coordination

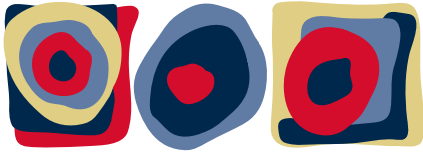
Active and ongoing coordination of services for infants, toddlers with potential developmental delays and their families. Services include, but are not limited to:

- comprehensive, multidisciplinary evaluation
- assessment
- service coordination
- family-centered programming
- nutrition counseling
- behavioral services
- vision and hearing assessment
- physical therapy
- occupational therapy
- language development^{xix}

Examination of research findings related to child outcomes reveals that children attending high quality pre-school education have a lower probability of referral to special education classes and/or services upon entering school. Duke University conducted a study of children who participated in two different pre-kindergarten initiatives in North Carolina between 1995 and 2018. According to the report, the state spent \$1,110 per child in the pre-kindergarten program, which was level funding in 2009. Participation in the program resulted in a 32% reduction in the likelihood that those would be identified as needing special education by the end of the third grade. An investment of the same amount in the Smart Start early childhood initiative reduced the likelihood by 10 percent^{vi}. The North Carolina Pre-kindergarten Program, formerly called More at Four, is designed for 4-year-olds who speak limited English, are disabled or chronically ill, are behind their age developmentally or whose families have an annual income at or below 75 percent of the state median income. The other program, Smart Start, provides child, family and health services from birth through age 5 and is open to all of the state's children^{vii}.

The Pre-Kindergarten Program in Mississippi, while recognized nationally for its high quality, meeting nine out of ten benchmarks, is ranked 41st out of fifty in state spending^{viii}.

In Mississippi the Early Intervention Program (EIP) referred to as First Steps is a federally funded program, which requires a match of state funds. It is designed to provide developmental services and other resources to help children meet their maximum potential. Services provided include (but are not limited to): screenings, evaluations and assessments, Individualized Family Service Plans (IFSPs), Early Intervention services, and transition plans to preschool services, as listed in figure 1, are funded under Part C of Individuals with Disabilities Education Act (IDEA), or other programs^{ix}. Medical professionals and childcare teachers are often in positions to observe the child in natural settings to determine if a developmental delay could exist. Concerns are voiced to parents who actually make the request for an assessment. Often parents recognize a potential delay and make a request for assessment without any prompting. The circumstances of a child's birth such as a complicated delivery, pre-term birth or possible genetic factors evident after the birth call for immediate assessment and planning for intervention services. The EIP provides specific intervention strategies for parents and extended family members to use in reversing specific areas of delay. Ongoing assessments serve as a guide to the service provider and parent to determine the child's progress in meeting appropriate developmental milestones. As they near their third birthday, they begin the transition process of service delivery through their local school district which is responsible for delivering services to children ages three through 21 years under Part B of IDEA. Specific funding is provided through Part b, Section 619 of IDEA for the state to serve 3-5 year olds.



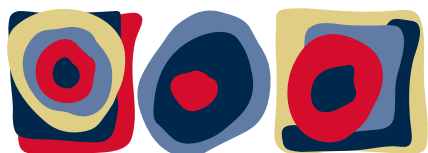
Unmet Needs Set the Course for Unmet Potential

Based on figures given at a presentation by First Step Early Intervention staff on April 12, 2019, the program is receiving approximately 100 referrals a week. At the same presentation, it was noted that in some areas of the state, early interventionists have caseloads of 100 children each, with one region currently facing a staffing crisis with 7 unfilled vacancies.

Primary funding for First Steps is derived from Medicaid reimbursements and the U.S. Department of Education. This year the funding is \$4.1 million dollars. The funding pays the salaries of the regional interventionists, salaries of the central office staff, direct services and other activities required by law. Currently state funds are provided through a transfer of \$700,000 from the Mississippi Department of Education, \$385,000 from the Department of Health and \$170,000 from the Health Care Fund (tobacco settlement funds)^x. With the decrease in the overall budget at the Mississippi Department of Health, their portion of funding for the program has decreased over the past several years. Currently the amount of Medicaid funding that is allocated for direct services to First Steps clients is unavailable. Eligibility requirements are outlined in Figure 2.

A review of the current situation within public schools reveals that special education was underfunded \$30 million by the state legislature for the 2018-2019 school year. That is enough to fund 600 special education teachers. However, school districts are required to provide the special education teachers their students need, so, in most cases, funds were taken from other areas of the budget to fund those teachers creating less than optimum teaching conditions. Low salaries also contribute to the challenges in employing and retaining qualified teachers, given our state ranks 51st in the nation regarding average teacher pay according to a report recently released by the National Education Association (NEA)^{xi}.

According to Autism Speaks, in 2018 the Centers for Disease Control (CDC) determined that approximately 1 in 59 children is diagnosed with an autism spectrum disorder (ASD). On average, autism costs an estimated \$60,000 a year through childhood. In 2017, *MS Today* reported one in 68 Mississippi children — almost 11,000 individuals has been diagnosed with ASD, a jump from the one in 500 estimate a decade earlier^{xii}. Costs increase with the occurrence of intellectual disability^{xiii}. In a recent conversation, Brittany Cuevas, Executive Director of the North Mississippi Autism Center, indicated the Center has a current waiting list of 450 children^{xiv}. The Center uses an approach that is clinically demonstrated to significantly improve the function and chances of school success with children with autism. Intervention services are outside the financial reach of most families. Medicaid pays a portion of the cost for children who qualify as does private insurance, if coverage for therapy is included. Generous donations from individuals and community partners help offset costs for families who have no ability to pay^{xv}. Given the increase cited by the Autism Advisory Committee in 2016 in a report to the Legislature and cited by *MS Today*^{xvi}, it is fair to assume the community-based programs such as the one highlighted are not able to meet the need as evidenced by the waiting list. Given the increase in diagnosis nationally, it is fair to assume the number in Mississippi is increasing and community-based programs such as the one highlighted are not able to meet the need as evidenced by the waiting list.



Mississippi's Education Scholarship Account: Commentary

**Figure 2: Eligibility Requirements for
Early Intervention Services in Mississippi**

To be eligible for early intervention services through the First Steps Early Intervention Program, a child must meet the criteria in at least one of the following categories:\

1. Developmental Delay

- 33% delay in one area of development or a 25% delay in two or more areas of development: cognitive, physical (gross motor, fine motor, vision and hearing), communication, social or emotional, and adaptive development.
- The child has to score 2.0 standard deviations below the mean in one developmental area or 1.5 standard deviations below the mean in each of the two areas on the testing protocols administered.

2. Diagnosed Physical or Mental Condition

- These conditions include, but are not limited to:
- chromosomal abnormalities
 - genetic or congenital disorders
 - sensory impairments
 - inborn errors of metabolism
 - disorders reflecting disturbance of the development of the nervous system
 - congenital infection
 - severe attachment disorders
 - disorders secondary to exposure to toxic substances, including fetal alcohol syndrome

3. Informed Clinical Opinion

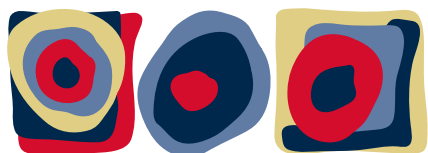
Clinical opinion may be used by qualified professionals to determine the initial and continuing eligibility if the child's evaluation and assessment results do not meet the criteria for developmental delay, and the child does not have a diagnosis that has a high probability of resulting in developmental delay^x.

Source: State Interagency Coordinating Council (SICC) Business and SSIP Stakeholder Retreat (April 12, 2019), Jackson, MS

In its 2015 Regular Session, the Legislature passed “The Equal Opportunity for Students with Special Needs Act,” which directs the Mississippi Department of Education to implement an Education Scholarship Account program (also known as vouchers) in the state on a phased-in basis. The program’s purpose is to offer parents of special needs children financial assistance to place their children in a nonpublic school setting and receive other educational services that parents believe best meet the needs of their child^{xv}. In 2018, the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER) issued a report on the effectiveness and efficacy of the program between fiscal years 2017-18. The report concluded with this summary:

“In fiscal years 2017–2018, the Mississippi Department of Education (MDE) disbursed only 70% (\$3.9 million) of education scholarship funds available, while 30% (\$1.7 million) lapsed and was returned to the State Treasury. The ESA program’s net added expense to the state for FY 2018 was \$724,074. The program, as prescribed in state law, lacks the accountability structure needed to ensure that nonpublic schools enrolling ESA students meet statutory requirements and that students with disabilities are receiving the services they need and progressing toward their special needs goals. Furthermore, the MDE has not administered the program in the most effective manner. However, PEER’s survey indicated high levels of satisfaction with the program by both parents and students.”

The summary provides insight into a systemic problem of accountability and lack of using data when making legislative decisions regarding expenditure of funds. Even with the knowledge provided by this non-partisan review, in the last days of the 2019 legislative session a \$2 million increase in funding for the Scholarship Account was authorized by the Legislature^{xvii}. Questions continue to be posed as to how this happened since rank and file members of the legislature were not informed in advance of the additional appropriation that promoted a program that has a less than a stellar evaluation^{xviii}. This is even more puzzling given the same legislature increased the pre-kindergarten program by only \$170,000 which will allow for an additional 75 more children to attend next year^{xix}. This is the same pre-kindergarten program that is nationally recognized for being one of the best in the country^{xx}. Given the public outcry regarding the stealth appropriation for vouchers, the Mississippi Department of Education has revamped the process for families to receive stipends and indicated the accountability measures of participating schools will be more rigorous.



ⁱLevitt, P. (2018) presentation entitled Translating the Neuroscience of Early Brain and Child Development to: Public Policy .Citation credited to Courchesne et.al., Neuron 56,2007.

ⁱⁱCourchesne E, Pierce K, Schumann CM, Redcay E, Buckwalter JA, Kennedy DP, Morgan J. Neuron. (2007) Oct 25; 56 (2):399-413.

ⁱⁱⁱBardin, J. (2012), Nature, 2012 (<https://www.nature.com/news/neurodevelopment-unlocking-the-brain-1.10925>).

^{iv}Levitt, P. (2009). National Scientific Council on the Developing Child. Harvard University.

^vHogawood , K.E., et.al (2019) The Interdependence of Families, Communities, and Children's Health: Public Investments That Strengthen Families and Communities, and Promote Children's Healthy Development and Societal Prosperity. National Academy of Medicine. <https://nam.edu/the-interdependence-of-families-communities-and-childrens-health-public-investments-that-strengthen-families-and-communities-and-promote-childrens-healthy-development-and-societal-prosperity/>.

^{vi}Frey,S. (2015) Study finds preschool programs lower special education referrals. EdSource (<https://edsource.org/2015/study-finds-preschool-programs-lower-special-education-referrals/74044>).

^{vii}Ibid.

^{viii}National Institute for Early Education Research, Growing Disparities in Enrollment, Investments, and Quality: 2002-2017. (2019) (http://nieer.org/wp-content/uploads/2018/04/Mississippi_YB2017.pdf).

^{ix}Mississippi Department of Health (2019) Early Intervention Program (First Steps) (https://msdh.ms.gov/msdhsite/_static/41,0,74.html).

^xFirst Steps Interagency Council Meeting, (April 12, 2019) Jackson. MS.

^{xi}National Education Association (2019). Rankings of the States 2018 and Estimates of School Statistics 2019/ Retrieved: last <http://www.nea.org/assets/docs/2019%20Rankings%20and%20Estimates%20Report.pdf>

^{xii}Autism diagnoses surge; access to treatment can't keep pace. Retrieved from <https://mississippitoday.org/2017/05/02/autism-diagnoses-surge-access-to-treatment-cant-keep-pace/>

^{xiii}Autism Speaks (2019).(<https://www.autismspeaks.org/autism-facts-and-figures>)

^{xiv}Interview with Brittany Cuevas, Executive Director, Autism Center of North MS. (May 7, 2019).

^{xv}Autism Center of North Mississippi (2019).(<https://autismcenternms.com/about/>).

^{xvi}Autism diagnoses surge; access to treatment can't keep pace. Retrieved from <https://mississippitoday.org/2017/05/02/autism-diagnoses-surge-access-to-treatment-cant-keep-pace/>

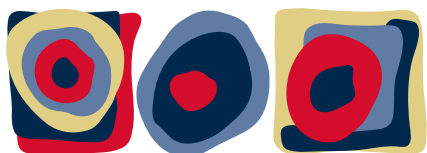
^{xvii}Harris, B, Pender, G. & Bologna, G. (March 28, 2019) Mississippi lawmakers shocked they voted for \$2 million more in private school vouchers. <https://www.clarionledger.com/story/news/politics/2019/03/28/miss-lawmakers-shocked-they-voted-spend-5-million-vouchers/3305197002/>.

^{xviii}Harris,B. (April 3, 2019) Mississippi's pre-K program is working. So why is it still so small? <https://www.clarionledger.com/story/news/2019/04/03/mississippis-pre-k-program-promising-so-why-still-so-small/3314035002/>.

^{xix}Joint Legislative Committee on Performance Evaluation and Expenditure Review (2018). A Statutory Review of Mississippi's Education Scholarship Account Program. Retrieved from <https://www.peer.ms.gov/Reports/reports/rpt628.pdf>.

^{xx}National Institute of Early Education Research (2019).http://nieer.org/wp-content/uploads/2019/04/Mississippi_YB2018.pdf

^{xix}Ibid.



Life Experiences and Their Impact on Early Brain Development

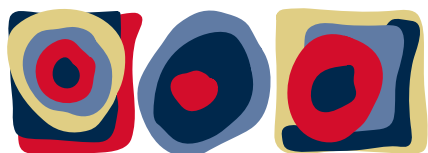
This is the fifth of a five part series produced by The Graduate Center for the Study of Early Learning, summarizing presentations by four internationally recognized early childhood experts, brain scientists, and a Nobel Prize winning economist who presented in the state over the past two years. In their remarks, each pointed to the importance of investing in early childhood education to build a strong workforce and viable economic base for the future. The series was held in conjunction with the University of Mississippi, North Mississippi Education Consortium, The Phil Hardin Foundation, and MS Kids Count during the 2017-2019 academic years and was funded by The W.K. Kellogg Foundation. Each brief will provide the reader with highlights provided by the speaker and reflections of the co-directors of the Graduate Center for the Study of Early Learning, Drs. Cathy Grace and Melody Musgrove, as the research cited relates to Mississippi. This brief is the fifth of a five part series produced by The Graduate Center for the Study of Early Learning, summarizing the research of Dr. Bruce Perry which illustrates the impact of various types of trauma experienced by young children and the long term ramifications on adult outcomes. Dr. Perry emphasizes the importance of early intervention when young children are repeatedly exposed to traumatic events during the first three years of life.

Dr. Perry is an American psychiatrist, currently the Senior Fellow of the Child Trauma Academy in Houston, Texas and an Adjunct Professor of Psychiatry and Behavioral Sciences at the Feinberg School of Medicine in Chicago, Illinois. He serves as Senior Consultant to the Alberta Minister of Children and Youth Services in Alberta, Canada and is also a Senior Fellow at the Berry Street Childhood Institute in Melbourne, Australia. Dr. Perry consults on incidents involving traumatized children, including the Columbine High School shootings, the Oklahoma City Bombing, the Branch Davidian siege and the September 11 terrorist attacks.

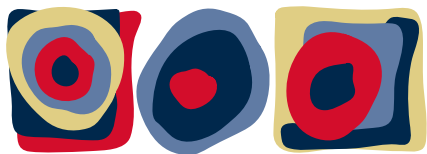
The brain is our most unique organ of the body. According to Dr. Bruce Perry, the brain mediates our movements, our senses, our thinking, feeling and behavingⁱ. The message he brought to Mississippi is very similar and has been informed by updated findings from recent brain research, creating new points to ponder. The brain develops in a “user-dependent” systemⁱⁱ. According to Dr. Perry and other researchers, physical connections between neurons – synaptic connections – increase and strengthen through repetition, or wither from lack of use. It follows, therefore, that each brain adapts uniquely to the specific set of stimuli and experiences of each child’s world. In other words, early life experiences determine how a child’s innate potential is fully realized, or notⁱⁱⁱ.

In discussing the biological gifts of humans, Dr. Perry lists two that no other animals possess. The power of relationship and malleability of the brain are unique to humans. Research indicates that our unintentional reduction of social engagement with family members and others as a result of an increase in the use of technology, self-imposed isolation, and lack of intentional family bonding opportunities have reduced the development of the brain in areas responsible for social interaction. Dr. Perry refers to this as a “poverty of relationships” which impacts the brain in negative ways^{iv}.

The complexity of brain development is a function of repetition and, without repetitive positive relationships with caring adults, the parts of the brain related to regulation and social skills go underdeveloped. Stated



in another way, the type of environment children experience impacts the degree to which parts of the brain develop and function. This is especially true in how the brain develops the ability to possess empathy, demonstrate appropriate social skills, and regulate behavior^v. Research reported by the Harvard Center on the Developing Child reveals when a child suffers from chronic stress by such circumstances as living in poverty, neglect, abuse, neighborhood violence, or being cared for by an adult with mental illness or substance addiction, the stress can become toxic to the brain and severely impact healthy development^{vi}. Any one of the chronic situations can result in the disruption of a critical responsive relationship children have with their primary caregiver and lead to immediate as well as long-term problems. The cumulative toll of stress over years increases the likelihood of developmental delays, learning disabilities, and childhood behavior problems, as well as diabetes, heart disease, depression, drug abuse, alcoholism, and other major health problems in adults^{vii}.



Growing Up in Mississippi Today: Commentary

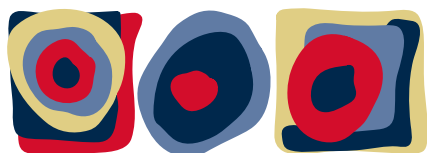
According to the National Center on Children in Poverty, 59% (135,899) of young children in Mississippi live in low-income families as compared to a national percentage of 43%. Thirty-four percent (78,479) of children in Mississippi under age 6 live in poor families while the national percentage is 19%^{viii}. This one statistic sets the tone for the relevancy of Dr. Perry's research and that of other neuroscientists. When over half of young children in Mississippi under the age of 6 live in low-income families (defined as an individual with income less than \$34 per day or a family of four with income less than \$69 per day) some would define the situation as catastrophic^{ix}. A review of the Six Core Strengths for Children identified by Dr. Perry in Figure 1 reveals the child outcomes for which we should hold ourselves accountable. Promoting evidence-based interventions starts in the early years by establishing opportunities for children to bond with caring adults at critical times in the brain development, this is fundamental to the existence of mature, healthy brains and bodies later in life.

After establishing an emotional attachment to a caring adult, children benefit from high quality early experiences which promote social and emotional development as well as cognitive and physical growth.

Statements attributed to Tim Moore, CEO of the Mississippi Hospital Association, confirm the scientific evidence reported by Dr. Perry and his colleagues.

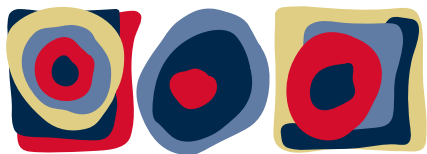
Mississippi ranks at the bottom or near last in rankings in several national reports related to the health and wellbeing of the children in the state. According to National Kids Count data (2018), 30% of children under 6 years of age live in homes where the family income was less than twice the federal poverty level and had at least one parent who worked 50 or more weeks during the previous year^x.

The case can be made that early childhood trauma as a result of many Mississippians being raised in poverty is a major contributor to the health care crisis facing the state today.



Growing up in Mississippi for many children means they are hungry. According to *MS Today* (May 2018), a report by Feeding America^{xi} found that Mississippi led the nation in families faced with food insecurity for the eighth year. According to the 2018 report, Mississippi had the highest rate of food insecurity, hovering around 20 percent. From 2012-16, it was the only state to reach that mark. Food insecurity refers to USDA's measure of lack of access, at times, to enough food for an active, healthy life for all household members and limited or uncertain availability of nutritionally adequate foods. Food-insecure households are not necessarily food insecure all the time. Food insecurity may reflect a household's need to make trade-offs between important basic needs such as housing or medical bills, and purchasing nutritionally adequate foods^{xii}. The 2019 Executive Summary of Food Insecurity in America analyzes data from 2017 reporting out by information at the county level. Once again, Mississippi is named the state where there is the highest rate of county-wide food scarcity. The report links the level of food insecurity by county to high unemployment^{xiii}. Food insecurity is an example of how poverty leads to unhealthy conditions in which young children are developing.

Poverty often sucks the life out of families as well as individuals. Food and housing insecurities, questionable access to high quality medical care and early care and education programs are all issues more than half of the families with young children in Mississippi are wrestling with daily. Parents are told they need to read to their children and play games every night when they are putting them to bed. In reality, parents are more concerned about the child having a bed in the same room every night. Given the percentage of children residing with families earning low wages, Mississippi ranks 48th in the country in overall child well-being^{xi}. The National Center on Children in Poverty reported in 2016 that the federal poverty threshold was \$24,339 for a family of four with two children. They defined children living in families with incomes below the federal poverty threshold as poor. Using their definition, 34 percent of young children in Mississippi are poor, with the national average being 21 percent^{xii}. To put this in perspective, approximately 40,000 children are born annually in the state. Computing the number of children statewide that are born into and live in poverty the first five years of life the number is approximately 78,479. The researchers who visited Mississippi gave us the map and a car full of gas for thousands to move out of poverty. The rest is up to those of us interested in the future of our state to build the road.



Growing Up in Mississippi Tomorrow: A Commentary

**Figure 1:
A Vaccine against Violence**

ATTACHMENT: being able to form and maintain healthy emotional bonds and relationships

SELF-REGULATION: containing impulses, the ability to notice and control primary urges as well as feelings such as frustration

AFFILIATION: being able to join and contribute to a group

ATTUNEMENT: being aware of others, recognizing the needs, interests, strengths and values of others

TOLERANCE: understanding and accepting differences in others

RESPECT: finding value in differences, appreciating worth in yourself and others^{xiv}.

Source: Comments made by Dr. Bruce Perry, February 7, 2019 in Jackson, MS.

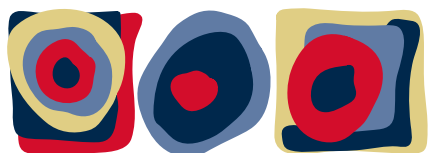
There are many more indicators that could be used to illustrate the impact poverty has on the developing brain, however the focus must be on moving forward. Using a state oversight agency, review of existing programs serving low income families that have been funded through federal dollars is the first step to determine if funds have yielded the outcomes expected and what has been learned and /or gained through the investment. Following the review, engage state leaders in modifying the current allocation of funds in such a way to create increased access to high quality early childhood programs and stabilize the funding for those programs. By redirecting federal funds not currently being utilized to invest in high-quality early childhood education programs, the child outcomes named in Dr. Perry's Vaccination against Violence (figure 1) list will be more likely to be realized by thousands more children than currently involved. The second step is to develop and implement an evidence-based evaluation design to ensure the child outcomes set are being met. The third and final step is to report findings and adjust any section of the plan that needs strengthening and implement the revised strategies and/or interventions.

We have the **knowledge**.

We have the **opportunity**.

We have the **proof**.

Do we have the will?



ⁱhttps://childtrauma.org/wp-content/uploads/2013/11/McCainLecture_Perry.pdf

ⁱⁱIbid.

ⁱⁱⁱIbid.

^{iv}<https://www.youtube.com/watch?v=vkJwFRAwDNE>

^vIbid.

^{vi}Center on the Developing Child (2019). Pediatricians take on toxic stress. <https://developingchild.harvard.edu/science/key-concepts/toxic-stress/tackling-toxic-stress/pediatricians-take-on-toxic-stress/>

^{vii}Ibid.

^{viii}National Center for Children in Poverty (2018). http://www.nccp.org/profiles/MS_profile_7.html

^{ix}Federal Safety Net (2019). <http://federalsafetynet.com/poverty-definition.html>

^xThe Annie E. Casey Foundation KIDS COUNT Data Center, National Kids Count <https://datacenter.kidscount.org/data/tables/5048-children-in-low-income-working-families-by-age-group?loc=26&loct=2#-detailed/2/26/false/870,573,869,36,868,867,133,38,35/34,35,36/11455,11456>

^{xi}MS Kids Count <http://www.aecf.org/m/resourcedoc/aecf-2018kidscountdatabook-2018.pdf>

^{xii}National Center for Children in Poverty (2019) http://www.nccp.org/profiles/state_profile.php?state=MS&id=9

^{xiii}Feeding America (2019) Executive Summary. <https://www.feedingamerica.org/sites/default/files/2019-05/2017-map-the-meal-gap-executive-summary.pdf>

^{xiv}<http://teacher.scholastic.com/professional/bruceperry>;