

SOUTH CAROLINA EARLY CHILDHOOD DATA REPORT

DATA BRIEF: PHYSICAL HEALTH

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INTRODUCTION

The earliest years of a child’s life, beginning before birth, are among the most impactful in influencing the child’s lifespan potential and outcomes. This means that a child’s environment should include positive factors to encourage development, as well as buffer against life’s inevitable stressors [1, 2]. This data book serves to share information about the environmental factors impacting children, ages 8 and under, in South Carolina, compared to North Carolina, Georgia, and the United States as a whole. In 2017, South Carolina had a population of a little over 5 million, of which 1.1 million were under the age of 18 [3]. Children under the age of 5 comprised 26 percent of the child population with 291,414 individuals [3]. This report provides a snapshot of the well-being of these youngest citizens of the state.

METHODS

This Data Brief focuses on indicators reported in the full *South Carolina Early Childhood Data Report* related to Physical Health. The full report utilizes four domains of indicators. Table 1 below highlights the four major categories of indicators in this report, along with sub-categories on indicator types. This report and the full data table (beginning on page 17) follow the order presented here.

Table 1: Early Childhood Well-Being Indicators

Family Environment	Physical Health	Emotional Well-Being	Cognitive Development
Family income Parent education Parental employment Teenage motherhood Family engagement	Prenatal care Substance use Domestic abuse Preterm births Low birth weight Infant mortality Breastfeeding Immunizations Medical care Oral health Obesity and Activity	Maternal depression Abuse and neglect	Developmental delay Child care Head Start Pre-kindergarten

There is no one comprehensive indicator of child well-being. Rather, well-being spans physical, social-emotional, and cognitive health and development. Since children do not grow up in a vacuum from their parents or communities, there are a variety of factors that influence overall well-being and long-term flourishing.

This brief focuses *only* on findings and conclusions related to Cognitive Development. Given the inter-related conditions across domains which can impact child well-being, we recommend reading the full report for a full discussion of all domains of child well-being, as well as the methodology for collecting these data. The Data Table comparing these data in an easy to read format is available online.¹

¹ The full data report contains analysis of all indicators as well as a full data table of indicators and is available online at: <https://www.instituteforchildsuccess.org/publication/2019-sc-databook/>. Alternately, an Excel file containing only the Data Table and citations is available download at <https://www.instituteforchildsuccess.org/databook-toolkit/>.

RESULTS AND STATE COMPARISONS

Prenatal Care

According to the March of Dimes, a full-term baby from birth through its first-year costs \$5,085. In comparison, a preterm or low birth weight baby costs \$55,393 over the same duration. The brunt of these costs is covered by employers, \$4,389 and \$54,149 respectively [4]. Thus, if prenatal care reduces preterm and low birthweight rates, it also reduces the economic impact of those births. In 2016, approximately one in five (18.0 percent) expectant mothers in South Carolina did not receive adequate prenatal care, compared to 17.5 percent of women in Georgia and 16.0 percent of women in North Carolina [5]. Although not by a large margin, South Carolina has a higher percentage of inadequate prenatal care when compared to its neighboring states.

Substance use during pregnancy. South Carolina's Department of Health and Environmental Control (DHEC) Pregnancy Risk Assessment Monitoring System (SC PRAMS) on prenatal and early infancy risk factors relating to birth outcomes reports, 7.4 percent of South Carolina mothers [6] and 10 percent of North Carolina mothers [7] reported consuming alcohol during the last three months of pregnancy compared to a national average of 8.0percent [8]. Georgia did not have available data for a comparison. Although, this statistic is less impactful than knowing what percentage of mothers report consuming alcohol during the critical first three months of pregnancy, it is still a useful for quantifying alcohol use by pregnant mothers which is ultimately recommended against.

In 2015, 10.8 percent of South Carolina mothers [9] and 9.2 percent of North Carolina mothers [10] reported smoking during the last three months of pregnancy, which represents a critical time for lung development. Both states percentages were higher than the national average of 8.8 percent [8]. In contrast, nationally 9 percent of mothers reported smoking during the same period [8].

Domestic abuse during pregnancy. In 2015, 2.7 percent of South Carolina mothers reported being physically abused during pregnancy, higher than the North Carolina and the national average of 2.1 percent [8, 11]. Furthermore, South Carolina consistently ranks near the top nationally in men killing women [12]. Domestic violence statistics may not represent true

numbers of physical abuse due to underreporting and does not reflect other forms of abuse, such as verbal or emotional abuse [13]. The Department of Justice reports that approximately 580,000 cases of domestic violence are unreported nationally, due to factors including fear of retaliation and desire to protect the offender [13].

Preterm births. Preterm birth is the birth of an infant prior to 37 weeks gestation. Preterm births are the largest cause of long-term neurological disabilities and infant death. Infants born prematurely are more likely than those born full-term to suffer from cerebral palsy, respiratory problems, visual problems, hearing loss, intellectual disabilities, and feeding and digestive problems. These births are far costlier and are more likely to require costly neonatal intensive care and longer hospital stays [14, 15]. The March of Dimes reports that preterm babies cost approximately \$50,000 more in their first year of life than babies born at full-term [4].

In 2017, 11.2 percent of all births in South Carolina were premature [16], which was slightly below the percentage of Georgia (11.4 percent) [17] but higher than North Carolina’s (10.5 percent) [18] and the national average (9.9 percent) [19]. African American mothers had a higher average of preterm births than either non-Hispanic White or Hispanic mothers from 2014-2016 in all states. South Carolina had the highest average preterm births among African American mothers at 14.4 percent while Georgia (13.7 percent) and North Carolina (13.6 percent) were closer to the national average of 13.4 percent. As far as preterm birth percentages

Hispanic mothers, South Carolina and Georgia matched the national average of 9.2 percent while North Carolina was significantly lower at 8.6 percent. See Figure 1 for a graphic representation of South Carolina low weight births, and Figure 2 for a map of South Carolina’s low weight births by county.

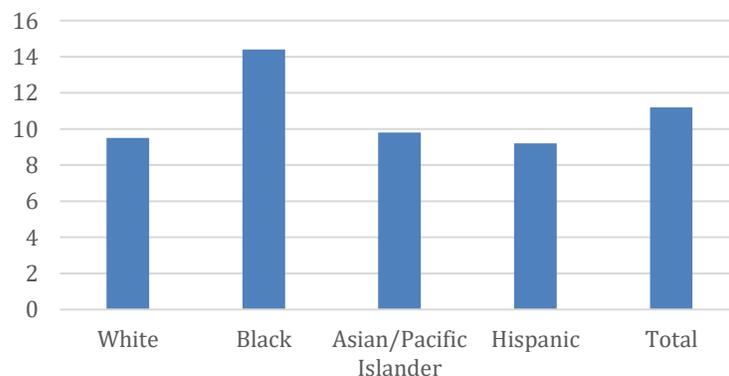
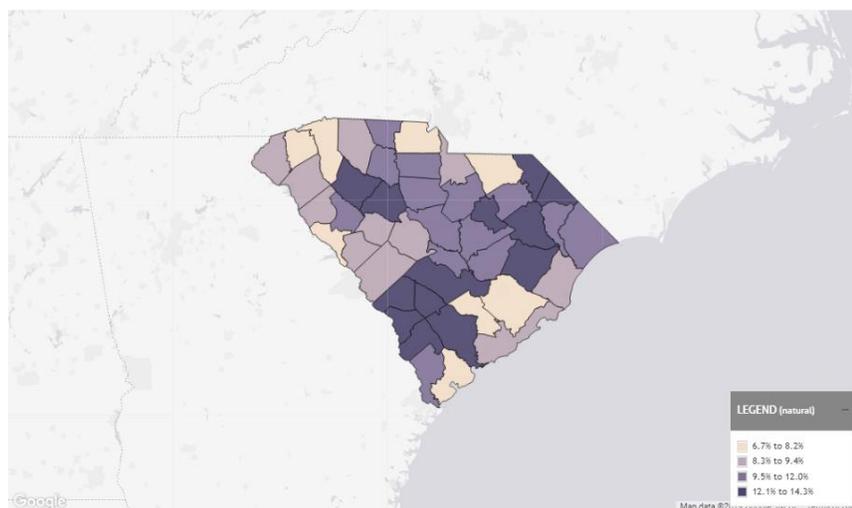


Figure 1. Preterm by race: South Carolina, percent of live births, 2014-2016 average [16]

Low Birth Weight

Low birth weight is defined as a weight of less than 5 pounds 8 ounces at birth (approximately 2,500 grams).

In 2016, 9.6 percent of all live births in South Carolina were considered to be of low birth weight which was less than Georgia (9.8 percent) but higher than North Carolina (9.2 percent). All three states were above the national average of 8.2 percent [21]. All states had a similar percentage of very low birth weight births with 1.8 percent of all live births in South Carolina and Georgia considered to be very low birth weight, while 1.6 percent of North Carolina's births were of the same classification. The national average is 1.4 percent [21]. Very low birth weight is defined as weighing less than 3.3 pounds at birth [22]. Infants of very low birth weight are at an even greater risk to suffer complications than those of low birth weight.



Babies Born With Low Birthweight By Race: Total (Percent)
- 2016

Children's Trust of South Carolina
KIDS COUNT Data Center, datacenter.kidscount.org
A project of the Annie E. Casey Foundation

Figure 2. Babies born with low birthweight by race: Total (percent)- 2016 [20]

Infant and Child Mortality

Many of the previous indicators can lead to higher rates of infant mortality, the death of an infant between birth and age 1 year. In 2017, South Carolina had 57,029 live births which was lower than North Carolina and Georgia who each had over 120,000 live births [23]. Of the 57,029 live births, 6.5 per 1,000 resulted in death before age 1 [24]. South Carolina's rate of 6.5 deaths per 1,000 live births is higher than the national rate of 5.8 but lower than the rates of Georgia (7.2) and North Carolina (7.1) [24]. African American families were disproportionately more likely to suffer the loss of a child in the first year of life in all three states [21]. South Carolina had the lowest rate of African American infant mortality at 10.0, compared to North

Carolina (13.4), Georgia (11.1), and even the national average (11.1) [21]. In contrast, non-Hispanic White families in South Carolina had an infant mortality rate of 4.84 deaths per 1,000 births which matched the national average and was lower than North Carolina (5.0) and Georgia (5.3) [21].

Breastfeeding

The number of South Carolina mothers breastfeeding declines over time in the first year of an infant's life (see Figure 3). In 2017, 76.4 percent of South Carolina mothers reported ever

breastfeeding their infants, which was significantly lower than both peer states (Georgia 84.0 percent, North Carolina 84.9 percent) and the national average of 83.2 percent [25]. The breastfeeding rate dropped to 45.1 percent non-exclusively at six months, which has an even greater margin of difference when compared to peer states and the national average. North Carolina has the highest rate of non-exclusive breast feeding at six months at 58.8

percent, then the national average at 57.6 percent, and last but still significantly above South Carolina, Georgia at 55.6 percent [25]. Fewer than 25 percent of South Carolina mothers continue to breastfeed exclusively for six months which is on par with the national average of 24.9 percent. Only North Carolina is above the 25 percent mark at 27 percent.

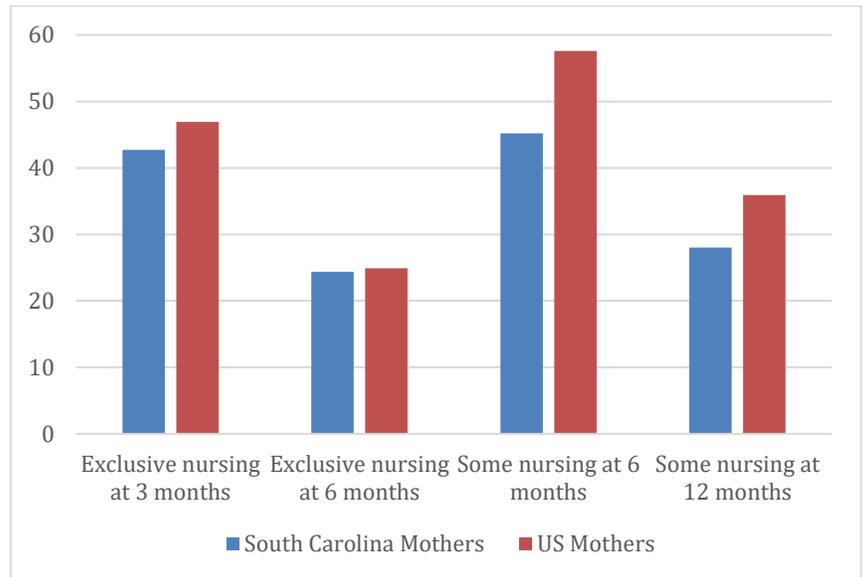


Figure 3: Percentage of nursing mothers, South Carolina compared to US, 2015 [25]

Two common types of lactation consultants are Certified Lactation Counselors (CLCs) and International Board-Certified Lactation Consultant (IBCLC). Both are qualified professionals whose intervention can improve breastfeeding rates and consistency. In South Carolina, there are 3.87 CLCs and 3.32 IBCLCs per 1,000 live births. Nationally, the averages are 4.57 and 3.79 respectively. Georgia and North Carolina each favor either CLCs or IBCLCs more than the

other. Georgia has 5.97 CLCs and 2.77 IBCLCs per live birth while North Carolina has 1.19 CLCs and 5.38 IBCLCs [25].

Health Care

In 2017, 3.9 percent of children under age six in South Carolina had no health insurance, which is lower than the national average (4.5 percent), and a general improvement overall (13 percent in 2011). Georgia had the highest percentage of children under 6 without health insurance at 6.2 percent and North Carolina had the lowest at 3.6 percent [26].

Medicaid and CHIP (Children's Health Insurance Program) are federally funded programs that states administer to insure low income and vulnerable populations, such as children, to improve their access to medical care.

South Carolina (59.28 percent), Georgia (64.01 percent), and North Carolina (66.19 percent) were all well above the national average of 43.22 percent for of Medicaid enrollees who are children [27].

Immunizations. By the time a child is 2-years-old, the Center for Disease Control and Prevention (CDC) recommends that they have received vaccines for fourteen diseases, including polio, chicken pox, whooping cough, hepatitis A and B, and measles. In 2017, 29.5 percent of 2-year-olds in South Carolina were not fully immunized, compared to 26.8 percent nationally [28, 29]. South Carolina's rate of nonimmunized children falls between Georgia at 30.9 percent and North Carolina at 26.4 percent. South Carolina has seen a significant decrease in the percentage of fully vaccinated 2-year-olds, as 2014 had the highest percentage at 76.9 percent. South Carolina's slight decrease in vaccination rate mirrors a national trend but was still below the national average of 73.2 percent in 2017 [29] (see Figure 4).

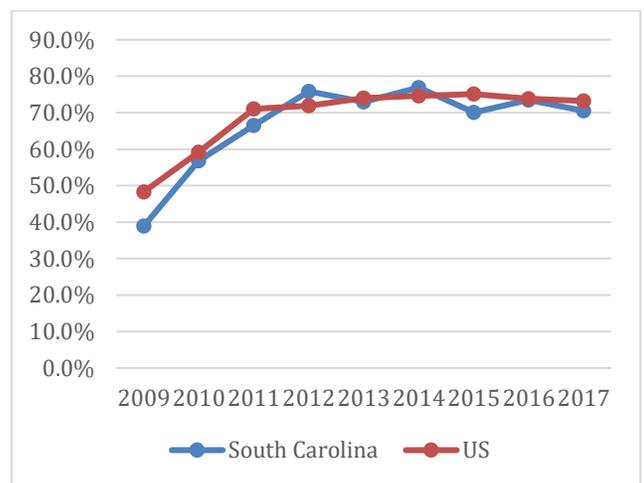


Figure 4. Percent of 2-year-olds fully immunized, 2009-2017

Oral Health

In 2017, 10.4 percent of South Carolina 1-5 year olds had at least one oral health problem within the past year (compared to 9.6 percent nationally) (see Figure 5). Both North Carolina and Georgia were well below the national average at 8.3 percent and 6.2 percent respectively

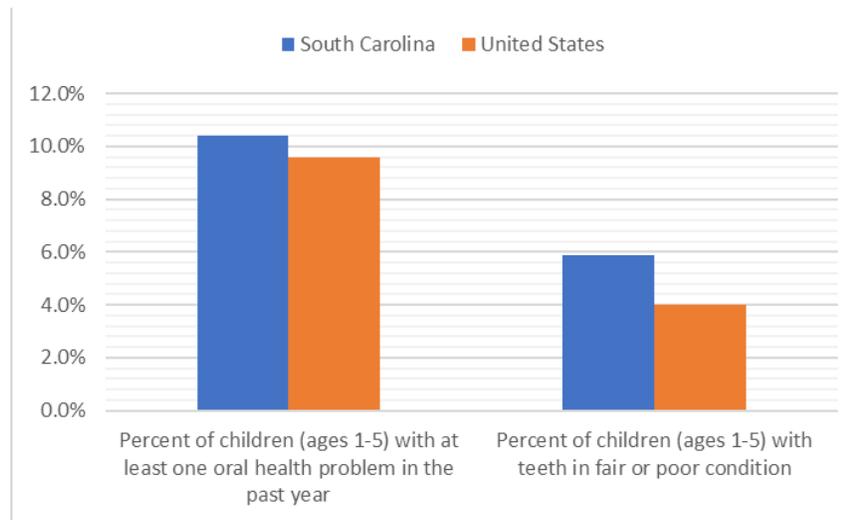


Figure 5. Oral health issues, 2017 [30, 31]

[30]. Furthermore, 5.9 percent of South Carolina children aged 1-5 had teeth in poor or fair condition, compared to 4.0 percent nationally, 2.3 percent in Georgia, and 1.60 percent in North Carolina [30]. Overall, South Carolina performs significantly worse in oral health and should reconsider its focus on the issue due to the aforementioned consequences [31].

Obesity and Activity

In 2014, 12 percent of South Carolina children aged two to four enrolled in the Women, Infant, & Children (WIC) food program were obese which was lower than the national average (14.5 percent), and peer states (Georgia 13 percent, North Carolina 15 percent). Children enrolled in WIC may be more likely to be obese due to economic and environmental influences. While this data is not necessarily generalizable because it captures a specific population, it is a useful proxy for tracking the trend of under 5 obesity, as there are barriers to collecting reliable surveillance data for the under 5 population in terms of obesity.

Physical activity data is limited, but several proxies for factors that influence physical activity exist. In South Carolina, 23.2 percent of children ages 0-5 lived in a neighborhood with “detracting elements” which can pose a barrier to safe outdoor play, such as litter or garbage on the street or sidewalk, poorly kept or rundown housing, or vandalism such as broken windows and graffiti (national average 26.9 percent) [32]. While below the national average, South Carolina had a significantly higher percentage than Georgia (18.7 percent) and nearly doubled

North Carolina's percentage of 8.8 percent [32]. Furthermore, 24.1 percent of South Carolina children ages 0-5 live in neighborhoods without physical activity amenities such as recreation centers or parks, well above the national average of 9.4 percent, further limiting their opportunities to be active. North Carolina and Georgia boasted similar percentages at 22.5 percent and 19.5 percent respectively [33].

In South Carolina, 5.9 percent of children aged 1-5 were engaged in more than four hours of screen time per day (national average 4.9 percent) [34]. North Carolina had the lowest overall percentage at 3.1 percent and Georgia was above South Carolina and the national average at 6.2 percent [34].

DISCUSSION AND POLICY IMPLICATIONS

Many indicators of young children's health are linked to the health of their biological mothers before, during, and after pregnancy. Research shows that women who have access to appropriate health care have healthier pregnancies and babies. There is a link not only between prenatal care and fetal health but also to the mother's pre-conception health. More and better health care pre-pregnancy may prevent risk factors *during* pregnancy, including maternal smoking or limited prenatal care. Shifting public policy from an exclusive focus on the period of pregnancy to a woman's health status and health care access before a pregnancy occurs can help reduce low weight and preterm births [35].

The health and well-being of children is shaped not only by their direct experiences but by the families, homes, and communities in which they live. This report highlights data related to both child maltreatment and to domestic violence experienced by mothers during pregnancy. Children are also negatively impacted by witnessing violence within their families even when they are not the direct target. South Carolina has been within the top ten domestic violence states for over a decade [12]. Experiencing domestic violence in childhood is one of the ten types of ACEs and is highly correlated with children's learning difficulties, attention and memory problems due to chronic stress, school performance challenges, and long-term chronic health conditions [36]. Continued efforts to reduce the prevalence of domestic violence in South Carolina will improve outcomes for children and for their families.

Since the previous edition of this report in 2014, the national health insurance landscape has changed significantly through the introduction of the Affordable Care Act. The ACA is credited with reducing child uninsured rates though families still report challenges in securing affordable care through employers and marketplace plans [37, 38]. Policymakers should continue to work to ensure access across all demographics and geographies. Expanded access to insurance may have impacts on child health outcomes as a result of more reliable care, though this analysis does not attempt to quantify such relationships.

Prenatal Care. Women who receive prenatal care earlier in pregnancy are more likely give birth to healthier infants [39]. High-quality prenatal care provides education about health choices during pregnancy, such as dietary choices and physical activity recommendations, and opportunities to uncover fetal abnormalities and health problems that should be addressed as early as possible. Prenatal care is also crucial in managing pre-existing conditions, such as high blood pressure and diabetes, which can negatively impact pregnancy. As such, women who receive prenatal care are less likely to give birth to an infant weighing less than 5 pounds, 8 ounces (considered “low birthweight”), give birth to an infant who dies within the first year, smoke postpartum, more likely to attend well-baby visits, and more likely to breastfeed [40-43]. Prenatal care appointments pose a significant benefit to society due to their large return on investment.

Substance abuse. Substance use during pregnancy is the largest preventable cause of cognitive and physical developmental delays and negative birth outcomes. The effects of substance use are most significant in the first trimester when the fetus is most vulnerable, with risk decreasing over time across trimesters [44]. Alcohol use during pregnancy is linked to Fetal Alcohol Syndrome, an irreversible set of defects including physical deformities, mental developmental delays, learning disorders, vision difficulties, and behavioral problems. Smoking during pregnancy increases the likelihood of premature births, low weight at birth, infant death within the first year, and developmental problems [45-48].

The first trimester of pregnancy carries the highest risk of detrimental effects on fetal development from alcohol consumption, but no data is currently being collected in South Carolina concerning alcohol use during this time.

Domestic abuse during pregnancy.

Domestic abuse during pregnancy is a risk factor for several adverse birth outcomes, including significantly greater odds of a preterm birth or low birthweight [49, 50]. Other risks include miscarriage, placental abruption, and infant death. Women who are abused during pregnancy suffer mental and emotional stress, leading to increased use of substances in the form of smoking or alcohol abuse, and are more likely to suffer from postpartum depression, and attempt suicide [49].

Low Birth Weight

Low birth weight has two main causes – premature births which do not allow the infant time to grow sufficiently prior to birth and fetal growth restriction which cause a fetus to gain insufficient weight during pregnancy [51]. Fetal growth restriction is defined as a fetal weight below the 10th percentile for gestational age, can be caused by maternal health conditions during pregnancy including diabetes and high blood pressure, placental problems, substance use during pregnancy, and infections. Fetal growth restriction can be classified as symmetric, when all internal organs are reduced in size, and asymmetric, signified a normal sized head and brain but small abdomen.

Infants born at a low birth weight have a greater risk of suffering from a variety of health problems, including respiratory difficulties, heart problems, gastrointestinal disorders, vision problems, and bleeding in the brain that will sometimes cause long-term damage including cognitive and motor development disability. As adults, these individuals are more likely to have heart problems, high blood pressure, and diabetes than individuals born at a normal birth weight [51].

Infant and Child Mortality

In Table 2, we highlight the top 10 causes of death for children and adolescents in the United State. These data cover all children and adolescents nationwide. These causes of death include unintentional injuries as well as homicides and suicides - all of which demand attention but may require different strategies to address. The factors contributing to these deaths vary significantly among age groups of children and adolescents. Our goal in sharing this information is not to make specific policy prescriptions for prevention but rather to call attention to the very real impacts of

injury and illness on America's children. Improving indicators discussed in this report can help reduce the rates of some child deaths but we must also have national, state, and local communities, informed by good data, to address the causes of death in our communities.

Table 2: The 10 Leading Causes of Child and Adolescent Death in the United States in 2016, in Order of Frequency

Cause of Death	No. of Deaths	Percent of Deaths
All Causes	20,360	
All injury-related causes ^a	12,336	60.6
Motor vehicle crash	4,074	20
Firearm-related injury	3,143	15.4
Homicide	1,865	
Suicide	1,102	
Unintentional	126	
Undetermined intent	50	
Malignant Neoplasm	1,853	9.1
Suffocation ^b	1,430	7
Suicide	1,110	
Unintentional	235	
Drowning	995	4.9
Drug overdose or poisoning	982	4.8
Suicide	123	
Unintentional	761	
Congenital anomalies	979	4.8
Heart disease	599	2.9
Fire or burns	340	1.7
Unintentional	272	
Chronic lower respiratory disease	274	1.3

Note. Adapted from “The Major Causes of Death in Children and Adolescents in the United States,” by R. M. Cunningham, M. A. Walton, and P.M. Carter, 2018, *The New England Journal of Medicine*, p. 2469 Copyright 2018 Massachusetts Medical Society [52]. For more information about the table that is not provided below, please see the original article. ^aThe data in this table, from the original source, were drawn from CDC WONDER data [21, 52]. ^bThe table elaborates upon the injury-related deaths, which add up to 53.8 percent of the stated 60 percent of injury-related child deaths. In this table, these injuries include motor vehicle crash, firearm-related, suffocation, drowning, drug overdose or poisoning, and fire or burns. Percentages on this table do not add up to 100 as this table only captures the top 10 causes of death.

Breastfeeding

Given the well-documented dose-response benefits of breastfeeding, it is notable that the number of South Carolina mothers breastfeeding declines over time in the first year of an infant's life. The American Academy of Pediatrics, the World Health Organization, and the Institute of Medicine all recommend exclusive (non-formula supplemented) breastfeeding to

six months of age and continued breastfeeding to 1 year of age or longer if mutually desired by both the mother and infant.

Breastfeeding for any length of time has been shown to improve infants' immune responses, decrease the number of gastrointestinal infections in infants by 64 percent, and decrease the rate of Sudden Infant Death Syndrome (SIDS) by 45 percent [53]. Breastfeeding has a dose response effect, with the benefits increasing with duration. Children breastfed longer than three months, have a reduction in ear infections, asthma, eczema, type 1 diabetes, hospitalizations for lower respiratory tract infections in the first year, and type 2 diabetes as adults. For children breastfed exclusively for longer than six months, there is a reduction in pneumonia, serious colds, throat infections, childhood leukemia, celiac disease, and adult obesity. For preterm infants, breastfeeding is essential to the development of their immune systems and allows them to adapt to full feedings quicker. Preterm infants who are exclusively breastfed have fewer hospital readmissions for three years.

Breastfeeding is mutually beneficial, promoting maternal health as well as infant health. For mothers, exclusively breastfeeding to six months reduces their likelihood of postpartum depression, hypertension, heart disease, diabetes, breast cancer, and ovarian cancer, and increases the likelihood that they will space their children appropriately and return to their pre-pregnancy weight more quickly [54, 55].

Lactation consultants are seen as an increasingly important resource in promoting breastfeeding. Lactation consultants have been shown to improve breastfeeding initiation and intensity [56].

Immunizations

By the time a child is 2 years old, the Center for Disease Control and Prevention (CDC) recommends vaccines for fourteen disabling, often deadly, vaccine-preventable diseases, including polio, chicken pox, whooping cough, Hepatitis A and B, and measles. By following the recommended vaccination schedule, children are well-protected from these diseases before coming into contact with them. Additionally, a well-vaccinated population provides “herd immunity” for individuals who cannot be immunized for a variety of reasons, including

allergies to ingredients of the vaccine and children that are immunocompromised due to diseases such as cancer.

Resistance to vaccines is a product of two factors: herd immunity reducing the prevalence and severity of diseases, leading people to think vaccines are not necessary and the “anti-vaccination movement [57].” Vaccine refusal has been associated with an increased risk of measles and pertussis for both vaccinated and unvaccinated populations [29, 58]. Overall, the decrease in vaccination rate and increase in vaccine refusal are trends which threaten not only the health of individual children but herd immunity as a whole, increasing the recurrence of previously eradicated diseases [29].

For the majority of children, vaccines are a safe and effective choice to bolster their immune system. Unless a child is allergic to components of the vaccine or has a weakened immune system due to illness, vaccines pose no risk to health other than slight tenderness at the injection site. There has been no significant evidence of a link between vaccines and developmental delays with several studies disconfirming an association between vaccines and autism.

Access to Medical Care

Access to medical care is unsurprisingly linked to better health outcomes. Two significant barriers to accessing medical care are a lack of health insurance and difficulty accessing primary care. Children without health insurance are less likely to have a consistent source of care, which can lead to missed immunization and developmental screenings. Furthermore, children without insurance are more likely to suffer from serious illnesses, suffer complications from asthma, and have more hospitalizations when compared to their counterparts with insurance. These conditions are exacerbated because they are often only treated when it is an emergency, rather than consistently managed. For children with special health needs, an absence of insurance often means they are unable to see specialists who can provide care for their unique needs [59].

Medicaid and the Children's Health Insurance Program (CHIP) are federally funded programs that states administer to insure low income and vulnerable populations, such as children, to

improve their access to medical care. Under the Affordable Care Act, states could choose to expand Medicaid, to cover more low-income populations [60]. None of the states observed in this report expanded Medicaid.

Referring back to the numbers seen in the results, while a high percentage of child coverage is good, too high of a number may indicate that the parents of these same children enrolled in Medicaid are not insured. As a result, they may be less likely to take their children to primary care, because they may be unfamiliar with the system. Uninsured parents are also less likely to be healthy and have positive health outcomes, which is likely to impact their children who rely on them.

Oral Health

The dearth of updated oral health data found in this data review is unfortunate. The good news is that a public comment period is currently open as the Surgeon General has commissioned a 2020 Report on Oral Health [61], suggesting that more accurate and comprehensive information will be available in the future. Oral health is one of the most important and commonly overlooked determinants of physical health. Oral diseases are the most common form of pediatric disease and the least treated [62]. Poor oral health is problematic in the both the short-term, because of the pain associated with oral diseases, and in the long-term, impeding physical, emotional, and cognitive development. Children with untreated tooth decay have worse overall health and academic achievement. Untreated oral disease can increase absence from school, speech difficulties, struggles with self-esteem, and difficulty sleeping [63]. Children with untreated dental pain are also four times more likely to have a low grade point average and 3 times more likely to miss school [64]. Overall, children with chronic dental pain report a lower quality of life. As these children become adults, periodontal disease is associated with heart disease, stroke, increased mortality, and premature and low birth weight births [65].

Obesity and Physical Activity

Obesity is the product of several factors including environment, behavior, diet, and stress [66]. Childhood obesity is a serious problem due to the short- and long-term health risks it poses. Similar to oral disease, obesity has implication beyond just physical health, as it impacts

cognitive, emotional and social well-being. Short term physical risks of childhood obesity include increased risk for high cholesterol, high blood pressure, prediabetes, sleep apnea, bone and joint problems, metabolic syndrome, and asthma. Cumulatively these factors result in a lower reported quality of life in obese children and lower academic performance. Obese children were four times more likely to report academic struggles and more likely to miss school than children deemed healthy weight [67]. In the long term, obese children are likely to become obese adults, putting them at risk for heart disease, diabetes, multiple kinds of cancer, and premature death [68].

Physical activity levels are a significant determinant of obesity, as activity helps maintain a caloric deficit which is crucial for maintaining a healthy weight. Aside from obesity, physical activity is an important component of healthy growth and development in children, helping strengthen joints and bones and improving motor skills [69]. Physical activity is also highly correlated with increased cognitive function, due to promoting angiogenesis (creation of new blood vessels) which in turn results in neurogenesis (creation of new nerve pathways) and increased brain plasticity. Cognitively, these factors result in improved academic achievement, executive functioning, and memory [70]. These principles have been applied to early childhood development as physical activity has been shown to have a causal relationship in promoting motor and cognitive development, potentially with a dose-response effect [71]. During early childhood, children should be active for at least 2 hours spread throughout the day [72]. Physical activity also improves cardiorespiratory fitness, which is a strong predictor of mortality in adulthood [73, 74].

Similar to obesity, data that assesses the physical activity levels of preschool aged children is limited. Given the length of time many young children are in center-based care and education programs, activity levels are highly variable depending on the policies of each individual child care or preschool program

Sedentary behavior is the opposite of being physical activity and is a risk factor for obesity. For children, sedentary time is often spent watching television or playing video games. Overall, policies that promote physical activity such as statewide school recess policies should be incorporated to fill the gap in physical activity that children may have.

CONCLUSION

The indicators in this report make it clear that too many young children continue to struggle every day in South Carolina. By providing a snapshot of how young children are faring in the state, we strive to inform statewide efforts to intervene early and effectively in the lives of children. We recognize, however, that this report can only be as informative as the data available for us in the state. To be fully informed about the needs of young children and the outcomes of systemic reforms effecting changes in the lives of these children, we must ensure the availability of reliable, valid, and appropriate data statewide. To this end, the Institute for Child Success recommends continued efforts toward high-quality and timely data collection concerning early childhood well-being.

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