



# 2016

# *North Carolina*

## Child Health Report Card

### NC Child

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### Highlights

Child health and well-being is shaped by parents' health and access to care

- Insurance coverage
- Immunization
- Breastfeeding
- Teen Births
- Infant Mortality

# ACCESS TO CARE AND PREVENTIVE HEALTH

Health during childhood impacts not only children's daily life, but also their future health, education, employment, and economic status. Access to health care is one important determinant of health, and health insurance is critical to ensure affordable access to care. North Carolina has made tremendous strides in enrolling children in health care coverage that allows them free access to preventive care services such as well child visits, immunizations, and dental cleanings. However, one in twenty children are uninsured, most of whom are eligible for public health insurance programs but not enrolled. Policy options that have been shown to be effective at reaching these children include streamlined enrollment plans that coordinate enrollment between public programs and expanding Medicaid eligibility to include more parents.

In addition to bolstering enrollment efforts for children, expanding Medicaid eligibility to include more parents promotes the health of the whole family. Children who grow up in safe, supportive, nurturing families are more likely to have good health throughout their lives. The health and well-being of parents and other caregivers is critical to their ability to serve as nurturing caregivers for children. Parents with unaddressed physical and mental health concerns can endanger children's positive development. Ensuring that parents and other caregivers have access to prevention and treatment for mental and physical health problems is an essential step towards providing the safe, supportive, nurturing environments in which children thrive.

Grade	Health Indicator	Current Year	Benchmark Year	Percent Change	Trend
<b>B</b>	<b>Insurance Coverage</b>	<b>2014</b>	<b>2010</b>		
	Percent of all children (ages 0-17) uninsured	5.2%	7.7%	-32.5%	Better
	Percent of children below 200% of poverty uninsured	6.6%	11.2%	41.1%	Better
	Number of children covered by public health insurance (Medicaid or Health Choice) (in December)	1,223,607	1,047,366	16.8%	Better
	Percent of Medicaid-enrolled children receiving periodic well-child screening assessments	57.1%	-	-	-
	Uninsured Parents	17.4%	21.6%	-19.4%	Better
<b>D</b>	<b>School Health</b>	<b>2014</b>	<b>2009</b>		
	School nurse ratio	1: 1,177	1: 1,207	-	-
<b>B</b>	<b>Breastfeeding</b>	<b>2012</b>	<b>2007</b>		
	Percent of infants ever breastfed	78.7%	72.4%	8.7%	Better
	Percent of infants breastfed at least six months	52.0%	38.8%	34.0%	Better
<b>B</b>	<b>Immunization Rates</b>	<b>2014</b>	<b>2010</b>		
	Percent of children with appropriate immunizations:				
	Ages 19-35 months	83.0%	77.0%	7.8%	Better
	At school entry	95.5%	96.5%	-1.0%	No Change
<b>A</b>	<b>Environmental Health</b>	<b>2013</b>	<b>2009</b>		
	Asthma:				
	Percent of children ever diagnosed	17.5%	-	-	-
	Hospital discharges per 100,000 children (ages 0-14)	144.6	175.0	-17.4%	Better
<b>B</b>	<b>Dental Health</b>	<b>2014</b>	<b>2010</b>		
	Percent of children:*				
	Who have not experienced tooth decay (kindergarten)	62.0%	64.0%	-3.1%	No Change
	With untreated tooth decay (kindergarten)	13.0%	15.0%	-13.3%	Better
	With one or more sealants (grade 5)	-	44.0%	-	-
		<b>2012</b>	<b>2008</b>		
	Receiving fluoridated water	87.5%	85.6%	2.2%	No Change
Percent of Medicaid children enrolled for at least 6 months who use dental services:	<b>2014</b>	<b>2010</b>			
Ages 1-5	62.0%	57.0%	8.8%	Better	
Ages 6-14	64.0%	63.0%	1.6%	No Change	
Ages 15-20	46.0%	48.0%	-4.2%	No Change	

Laila A. Bell from NC Child and Berkeley Yorkery and Adam Zolotor, MD from the North Carolina Institute of Medicine led the development of this publication, with valuable input from colleagues, child health experts, and many staff members of the North Carolina Department of Health and Human Services. This project was supported by the Annie E. Casey Foundation's KIDS COUNT project, and the Blue Cross and Blue Shield of North Carolina Foundation. NC Child and the North Carolina Institute of Medicine thank them for their support but acknowledge that the findings and conclusions do not necessarily reflect the opinions of financial supporters.

# HEALTH RISKS

Children's health begins where they live, play, and go to school. Just as parents and other caregivers' influences last a lifetime, so do the impacts of other conditions that shape children's health during childhood. Half of all children in North Carolina are growing up in families that struggle financially, jeopardizing their current and future health. Children living in families that cannot afford the basics in life often have reduced access to safe living conditions, healthy food, and opportunities for exercise, all of which increase their risk for poor health in adulthood. To improve the health and well-being of our children, North Carolina needs to ensure our economic development policies support healthy families.

Like family economic security, education is tightly intertwined with health; success in school and the number of years of schooling positively impact health across the lifespan. Therefore, investments in North Carolina's educational system have the potential to produce not only a more educated workforce, but also healthier parents, and a healthier workforce.

Grade	Health Indicator	Current Year	Benchmark Year	Percent Change	Trend
<b>D</b>	<b>Child Poverty</b>	<b>2014</b>	<b>2010</b>		
	The percent of children in poverty				
	Under age 5	27.3%	29.1%	-6.2%	Better
	Under age 18	24.3%	24.9%	-2.4%	No Change
<b>B</b>	<b>High School Graduation</b>	<b>2014</b>	<b>2010</b>		
	Percent of high school students graduating on time with their peers	83.9%	71.8%	16.9%	Better

Although adolescence is typically a time of robust physical health, it is also the period when threats to mental and physical health increase, lifelong mental health problems begin or emerge, and death and serious physical problems increase dramatically. Unlike younger children, adolescent death and health problems are most often due to preventable behaviors including tobacco use, poor nutrition, lack of physical activity and experimentation with and use of alcohol and other drugs. Since these health problems are all linked to behavior, which can change, they are preventable. By working together, parents, peers, schools, health providers, and others can all help promote positive adolescent development and facilitate the adoption of healthy behaviors. Local and state efforts, such as local efforts to ban e-cigarettes in public places, also play a critical role in curbing risky health behaviors among

<b>B</b>	<b>Teen Births</b>	<b>2014</b>	<b>2010</b>		
	Number of births per 1,000 girls (ages 15-17):	12.2	19.9	-38.7%	Better
<b>D</b>	<b>Weight and Physical Activity</b>	<b>2012</b>	<b>2008</b>		
	Percent of Children: Ages 10 - 17				
	Meeting the recommended guidelines of 60 minutes or more of exercise 6 or 7 days a week	26.7%			
	Who are overweight or obese <sup>2</sup>	36.3%			
<b>D</b>	<b>Tobacco Use</b>	<b>2013</b>	<b>2009</b>		
	Percent of students (grades 9-12) who used the following in the past 30 days:				
	Cigarettes	13.5%	16.7%	-19.2%	Better
	Smokeless tobacco	8.3%	8.5%	-2.4%	No Change
	Emerging Tobacco Product <sup>4</sup>	22.4%	-		
<b>D</b>	<b>Mental Health, Alcohol and Substance Abuse</b>	<b>2013</b>	<b>2011</b>		
	Percent of Middle School students who have ever tried to kill themselves	10.5%	9.5%	10.5%	Worse
	Percent of High School students who required medical treatment during the past 12 months due to a suicide attempt by injury, poisoning, or overdose	5.3%	5.0%	6.0%	Worse
	Percent of students (grades 9-12) who used the following:	<b>2013</b>	<b>2009</b>		
	Marijuana (past 30 days)	23.2%	19.8%	17.2%	Worse
	Alcohol (including beer) (past 30 days)	32.2%	35.0%	-8.0%	Better
	Cocaine (lifetime)	4.9%	5.5%	-10.9%	Better
Prescription drugs without a doctor's prescription (lifetime)	17.2%	20.5%	-16.1%	Better	

# DEATH AND INJURY

The health of people of childbearing age is essential to improving the health of our state and future generations. Women's health before and during pregnancy is inextricably linked to the health and well-being of their babies and families. The most serious negative pregnancy outcomes, including infant death and low birth weight, are largely determined by a woman's health prior to and during the first weeks of pregnancy. Unaddressed, or poorly managed, health issues like tobacco use, diabetes and hypertension--conditions which all disproportionately affect poor women and women of color--increase the likelihood of pregnancy complications and contribute to racial and ethnic disparities in birth outcomes.

Grade	Health Indicator	Current Year	Benchmark Year	Percent Change	Trend
C	<b>Birth Outcomes</b>	<b>2014</b>	<b>2010</b>		
	Number of infant deaths per 1,000 live births	7.1	7.0	1.4%	No Change
	White, non-Hispanic	5.1	5.3	-3.8%	No Change
	Black, non-Hispanic	12.8	12.7	0.8%	No Change
	Hispanic	6.2	5.0	24.0%	Worse
	American Indian, non-Hispanic	9.4	7.5	25.3%	Worse
	Percent of preterm births (before 37 weeks of pregnancy)	11.4	12.6	-9.5%	Better
Percent of infants born weighing less than 5 lbs., 8 ozs (2,500 grams)	9.0	8.9	1.1%	No Change	
C	<b>Preconception &amp; Prenatal Health</b>	<b>2014</b>	<b>2011</b>		
	Percent of babies born to women who smoke	9.8%	10.9%	-10.1%	Better
	Percent of births to mothers receiving late or no prenatal care	7.2%	5.4%	33.3%	Worse

All children have the potential for positive, healthy development. However, adverse experiences, such as exposure to abuse and neglect during childhood, increase the likelihood of poor physical and mental health throughout one's life. While child maltreatment may happen within families, there are many social and economic factors that either increase or decrease the likelihood of child abuse or neglect. Protective factors against child maltreatment include access to health care and social services, safe neighborhoods and housing, parental employment, and positive parenting skills. North Carolina is taking steps to help communities across the state prevent abuse and neglect by promoting and supporting the positive development of families through the implementation of evidence-based programs like home visiting and parenting skills training.

Grade	Child Abuse and Neglect	2014	2010		
C	Number of children: <sup>4</sup>				
	Children investigated for child abuse or neglect	130,538	127,097	-	-
	Substantiated as victims of abuse or neglect <sup>5</sup>	10,567	11,181	-	-
	Recommended services <sup>5</sup>	36,108	26,765	-	-
	Confirmed child deaths due to abuse	7	13	-	-

Over the past thirty years, North Carolina's infant and child death rates have been cut in half. Over this time the state has maintained a focus on and commitment to decreasing child deaths and reducing injuries. Through the development of targeted policies such as the graduated license system, child restraint and helmet laws, and public health campaigns, North Carolina has significantly improved the safety of children. However, troubling disparities remain. Disparities in infant mortality, the leading cause of child death in North Carolina, have persisted for American Indian and African American babies. Additionally, African American children are twice as likely, and American Indian children are 1.2 times as likely, to die before celebrating their eighteenth birthday.

Grade	Child Fatality	2014	2010		
C	Number of deaths (ages 0-17) per 100,000	57.8	57.5	0.5%	No Change
	Number of deaths:				
	Motor Vehicle-related	95	100	-	-
	Drowning	33	37	-	-
	Fire/Burn	11	6	-	-
	Bicycle	0	2	-	-
	Suicide	46	23	-	-
	Homicide	34	42	-	-
	Firearm	48	41	-	-
	Poisoning (ages 10-17)	5	9	-	-
All Other Injury Deaths	23	35	-	-	

# HEALTHY FAMILIES SUPPORT HEALTHY CHILDREN

Good health during the early years lays a solid foundation for children's success later in life. When children grow up healthy, we collectively benefit from better educated adults, a healthier workforce, and active and engaged communities. But the opposite is also true—we all stand to lose when our children are not healthy.

Child health does not develop in a vacuum, it is shaped by the families in which children live. Healthy parents are more likely to have healthy children and stable, nurturing, and financially secure homes provide resource-rich environments that impart measurable health benefits to children.

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## Children thrive when their parents are healthy.

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Children thrive when their parents are healthy, and parents' income, education, and quality of life shape the health and health behaviors of their children. Parents who have higher incomes and educational attainment report, on average, better physical and mental health, are more likely to have insurance, and are more likely to live in neighborhoods with access to fresh foods, quality medical services, and safe outdoor spaces that promote exercise and play—all factors which contribute to longer, healthier lives. These advantages are shared with their children who are, in turn, healthier, have better nutrition, and are more likely to see a doctor when they are ill than children in poverty.

Parents who struggle financially have less time, income, and fewer community resources to support their physical and mental health—much to the detriment of their children's growth and development. Parents with low incomes are more likely to be uninsured, therefore limiting their access to quality, affordable medical care.[1] As a result, poor and low-income parents face greater risk for poor health and costly, often avoidable, health conditions like obesity, heart disease, and diabetes.[2]

The health of parents prior to conception plays a substantial role in pregnancy and birth outcomes. The risk of preterm birth are nearly doubled for mothers who suffer from hypertension or poor physical health prior to becoming pregnant. Research also shows children of fathers with diabetes have a higher risk for developing type 2 diabetes or being born at a low birth weight than children whose fathers were not diabetic.[3] Poor birth outcomes like prematurity and low birth weight are the leading causes of infant mortality in North Carolina and they increase the risk of chronic health challenges children experience later in life like asthma, obesity, and vision problems.[4]

Preexisting health issues like hypertension, obesity, smoking, and depression—conditions which all disproportionately affect people in poverty and people of color—increase the risk of pregnancy complications and poor health throughout children's lives and widen health disparities. Although these conditions may be effectively managed or even prevented with appropriate care, nearly one in six parents in North Carolina is uninsured, leaving them without affordable access to the medical services they need to achieve and maintain good health. Research has shown that the uninsured who have a chronic condition or injury receive less care and have worse health outcomes than people with similar health conditions who have insurance.[5]

Strengthening parent health and access to care not only bolsters the well-being of adults, it improves outcomes for the entire family. Strategies that enrich family supports and expand parents' access to health insurance would yield significant returns for our children and state. Low-income families with uninsured parents are three times as likely to have eligible but uninsured children as families with parents covered by private insurance or Medicaid.[6] Relative to insured children, uninsured children are much more likely to have had an unmet need for health care in the previous year, to lack a usual source for health care, or fail to have received a routine checkup in the previous year.[7] Although the uninsured rate for children in North Carolina has reached a record low, one in every 19 children remains uninsured. Nearly two-thirds of these children are currently income eligible but unenrolled in Medicaid or NC Health Choice.

A highly effective way of boosting coverage among these uninsured children is to increase their parents' access to health insurance. Research shows states that have broadened access to health care for low-income parents under the Affordable Care Act have experienced significantly greater gains in enrollment among eligible children than states that did not expand parents' access to health insurance coverage.[4] North Carolina has the opportunity to increase access to health insurance for 500,000 uninsured residents, many of whom are parents, whose earnings exceed eligibility for public health insurance programs, but who earn too little to afford coverage in the health insurance marketplace. It's important to cover these adults because when they have health coverage, their health status improves along with the health and well-being of their children.

North Carolina has a rich tradition of collaborating to improve child health. From the development of the state children's health insurance program in the late '90s to the success of the Child Fatality Task Force over the past two decades in cutting child deaths, North Carolina has been a leader in child health innovations. Together advocates, health care providers, and policymakers can work in partnership with parents and communities to promote the healthy development of children.

[1] Karyn Schwartz (2007). Spotlight on Uninsured Parents: How a Lack of Coverage Affects Parents and Their Families. The Kaiser Commission on Medicaid and the Uninsured. Available online at: <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7662.pdf>.

[2] March of Dimes (2013). Long-term health effects of premature birth. Available online at: <http://www.marchofdimes.org/complications/long-term-health-effects-of-premature-birth.aspx#>

[3] Jessica S. Tyrrell et. al (2013). Parental diabetes and birthweight in 236 030 individuals in the UK Biobank Study. International Journal of Epidemiology. Available online at: <http://ije.oxfordjournals.org/content/42/6/1714.full>.

[4] Tetyana L. Vasylyeva (2013). Obesity in prematurely born children and adolescents: follow-up in pediatric clinic. Nutr J. 2013; 12: 150. Available online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3842808/>.

[5] Jack Hadley (2007). Insurance Coverage, Medical Care Use, and Short-term Health Changes Following an Unintentional Injury or the Onset of a Chronic Condition. JAMA. 2007; 297: 1073-1084.

[6] Leighton Ku and Matt Broaddus (2006). Coverage of Parents Help Children, Too. Center on Budget and Policy Priorities. Available online at: <http://www.cbpp.org/research/coverage-of-parents-helps-children-too>.

[7] Joan Alker and Genevieve M. Kenney (2014). A First Look at How the Affordable Care Act is Affecting Coverage among Parents and Children. Available online at: <http://ccf.georgetown.edu/all/a-first-look-at-how-the-affordable-care-act-is-affecting-coverage-among-parents-and-children>.

# DATA NOTES AND SOURCES

## Access to Care and Preventive Health

Uninsured: U.S. Census Bureau American Community Survey, 2014 and 2010, DP03, Selected Economic Characteristics and U.S. Census Bureau American Community Survey, 2014 and 2010 Table B27016: Health Insurance Coverage Status and Type by Ratio of Income to Poverty Level in the Past 12 Months by Age; Public Health Insurance: Division of Medical Assistance, North Carolina Department of Health and Human Services. Special data request in November 2015; Medicaid-Enrolled Preventive Care: Calculated using data from the N.C. Division of Medical Assistance "Health Check Participation Data." Available online at: <http://www.dhhs.state.nc.us/dma/healthcheck/>; School Nurse Ratio: North Carolina Annual School Health Services Report 2012-2013. Available online at <https://www2.ncdhhs.gov/dph/wch/doc/stats/SchoolHealthService-sAnnualReport2012-2013.pdf>; Breastfeeding: Centers for Disease Control and Prevention. Breastfeeding Practices—Results from the National Immunization Survey. Available online at: [http://www.cdc.gov/breastfeeding/data/NIS\\_data/index.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm); Immunization Rates for 2-year-olds: Centers for Disease Control and Prevention, National Immunization Survey. Available online at <http://www.cdc.gov/vaccines/imz-managers/coverage/imz-coverage.html>; Immunization Rate at School Entry:<http://www.cdc.gov/vaccines/imz-managers/coverage/-schoolreviewdata-reports/index.html>Asthma Diagnosed: State Center for Health Statistics, North Carolina Department of Health and Human Services. Child Health Assessment and Monitoring Program. Available online at: <http://www.schs.state.nc.us/SCHS/champ/>; Asthma Hospitalizations: State Center for Health Statistics, North Carolina Department of Health and Human Services. County Health Data Book. Available online at <http://www.schs.state.nc.us/data/county.cfm>; Untreated Tooth Decay and Sealants: Special Data request to the Oral Health Section, Division of Public Health, North Carolina Department of Health and Human Services, November 2015; Medicaid-Enrolled Children Receiving Dental Services: Special data request to Division of Medical Assistance, North Carolina Department of Health and Human Services, December 2015.

## Health Risk Behaviors

Graduation Rate: North Carolina Department of Public Instruction. State Four-Year Cohort Graduation Rate. Available online at <http://www.nc-publicschools.org/graduate/statistics/>; Poverty: U.S. Census Bureau, American Fact Finder. Table CP02. Available online at [www.americanfactfinder.census.gov](http://www.americanfactfinder.census.gov); Teen Births: State Center for Health Statistics, North Carolina Department of Health and Human Services. North Carolina Reported Pregnancies. Available online at <http://www.schs.state.nc.us/SCHS/data/vitalstats.cfm>; Weight Related: State Center for Health Statistics, North Carolina Department of Health and Human Services. Child Health Assessment and Monitoring Program. Special data request in November 2014; Tobacco Use: Tobacco Prevention Branch, Division of Public Health, North Carolina Department of Health and Human Services. North Carolina Youth Tobacco Survey. Available online at <http://www.tobaccopreventionandcontrol.ncdhhs.gov/data/index.htm>; Physical Activity, Alcohol and Substance Abuse: North Carolina Department of Public Instruction. Youth Risk Behavior Survey, North Carolina High School Survey detailed tables. Available online at <http://www.nchealthyschools.org/data/yrebs/>.

## Death and Injury

Infant Mortality, Low Birth-Weight Infants, and Babies Born to Women Who Smoke: State Center for Health Statistics, North Carolina Department of Health and Human Services. North Carolina Infant Mortality Report, Table 10. Available online at: <http://www.schs.state.nc.us/data/vital.cfm> and State Center for Health Statistics, North Carolina Department of Health and Human Services. Infant Mortality Report, Table 3. Infant Mortality Rates by Race/Ethnicity and Year. Available online at: <http://www.schs.state.nc.us/SCHS/data/vitalstats.cfm>; Child Fatality and Deaths Due to Injury: State Center for Health Statistics, North Carolina Department of Health and Human Services. Child Deaths in North Carolina. Available online at: <http://www.schs.state.nc.us/SCHS/data/vitalstats.cfm>; Poisoning ages 10-17: <http://www.schs.state.nc.us/SCHS/data/vitalstats.cfm>, Child Deaths in North Carolina, 2014; Child Abuse and Neglect and Recurrence of Maltreatment: Duncan, D.F., Kum, H.C., Flair, K.A., Stewart, C.J., and Weigensberg, E.C. (2014). NC Child Welfare Program. Retrieved January 2016, from the University of North Carolina at Chapel Hill Jordan Institute for Families website. Available online at: <http://ssw.unc.edu/cw/>; Firearm Deaths and Child Abuse and Neglect Homicides: North Carolina Child Fatality Prevention Team, Office of the Chief Medical Examiner, North Carolina Department of Health and Human Services. Special data request in November 2015. Please note the analysis, conclusions, opinions and statements expressed within this report are not necessarily those of the CFPT or OCME.

## Data Notes

The child health indicators in this report are organized into three domains: Access to Care and Preventive Health, Death and Injury, and Health Risk Behaviors. Each section includes a summary of findings that contextualize the data and identify long-term trends in policy and practice that have influenced the observed outcomes.

The indicators in these sections are not meant to be exhaustive. For many related aspects of child health state-level data are not readily available, particularly in the areas of mental health, lead poisoning, and special health care needs. Our indicators were selected by a group of child health experts, including researchers, policy advocates, data managers, and agency administrators, for their salience and ability to provide keen insights about current and emerging trends in the health and well-being of North Carolina children and youth.

**1** Immunization is measured for children 19-35 months of age using the 4:3:1:3:3:1 measure. 4:3:1 plus full series Haemophilus influenzae type b (Hib-FS) vaccine, ≥3 doses of hepatitis B (HepB) vaccine, and ≥1 dose of varicella (Var) vaccine.

**2** Overweight is defined as a body mass index equal to or greater than the 85th percentile using federal guidelines; obese is defined as a body mass index equal to or greater than the 95th percentile.

**3** Emerging tobacco products include electronic cigarettes, clove cigars, dissolvable tobacco products, flavored cigarettes or little cigars, hookahs or waterpipes, roll-your-own cigarettes, and snus.

**4** Findings represent exclusive counts of reports investigated in a state fiscal year. The number substantiated includes those substantiated of abuse, neglect, or abuse and neglect.

+ Data for indicators followed by a + sign are fiscal or school year data ending in the year given. For example, immunization rates at school entry labeled 2014 are for the 2013-2014 school year.

## Grades and Trends

Grades are assigned by a panel of health experts to bring attention to the current status of North Carolina children in salient indicators of health and safety. Grades are a subjective measure of how well children in North Carolina are faring in a particular area, and are not meant to judge the performance of the state agency or agencies providing the data or the service. Please note that several agencies have made a great deal of progress in recent years, which may not be reflected in these grades.

Data trends are described as "Better," "Worse," or "No Change." Indicators with trends described as "Better" or "Worse" experienced a change of more than 5% during the period. A percentage change of 5% or less is described as "No Change." Percent change and trends have not been given for population count data involving small numbers of cases. Due to data limitations, only the indicators for alcohol and drug use have been tested for statistical significance. Grades and trends are based on North Carolina's performance year-to-year and what level of child health and safety North Carolina should aspire to, regardless of how we compare nationally.

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