

Who Are America's Poor Children?

Examining Health Disparities Among Children in the United States

David Seith | Elizabeth Isakson

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The National Center for Children in Poverty (NCCP) is the nation's leading public policy center dedicated to promoting the economic security, health, and well-being of America's low-income families and children. Using research to inform policy and practice, NCCP seeks to advance family-oriented solutions and the strategic use of public resources at the state and national levels to ensure positive outcomes for the next generation. Founded in 1989 as a division of the Mailman School of Public Health at Columbia University, NCCP is a nonpartisan, public interest research organization.

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Introduction

Good health goes a long way, as research suggests that poor health in childhood not only impedes early child development, but can also have lasting consequences on children's future health and wellbeing. Although many would agree that a health is a fundamental right, children born into low-income families are less likely to enjoy this right.¹

As part of NCCP's *Who are America's Poor Children?* series, this report draws on the National Health Interview Survey (NHIS) and the National Health and Nutrition Examination Survey (NHANES) to provide an overview of the health of America's children by poverty status from 2007 to 2009. To assess health disparities between poor and nonpoor children, it identifies a list of publicly available annual indicators within the following five broad domains of health: environmental health, health insurance coverage, access to healthcare services, behavior, and health outcomes.

We find evidence of disparities between poor and nonpoor children within each of these five domains. These findings are consistent with two longstanding conclusions within the field of public health. First,

"the relationship between socioeconomic status and health is one of the most robust and well documented findings in social science."² Second, this relationship is reciprocal, as poverty detracts from resources used to maintain health, while poor health detracts from the educational and employment paths to income mobility.³

Following a framework developed by the Federal Interagency Forum on Child and Family Statistics, this paper suggests five key domains of health: environmental health, health insurance coverage, access to healthcare services, behavior, and health outcomes.⁴ While income is one of the leading predictors of health disparities, it is not the only one (and often is associated with other risks). The influences of race and ethnicity, neighborhood safety and collective efficacy, family structure, and many other factors, are also critically important, though not examined here. With the exception of the two readily available survey indicators of reported emotional difficulties and attention deficit and hyperactivity disorder, we do not examine indicators of social-emotional well-being and mental health.⁵

Exposure to Environmental Toxins: Smoking During Pregnancy, Second-Hand Smoke, and Lead

Children are especially vulnerable to environmental toxins. One of the most prevalent risks to neonatal health is smoking during pregnancy, which is associated with higher risks of low birthweight, preterm birth, and infant death.⁶ Figure 1 shows that poor mothers of children from birth to 15 years-old today were much more likely to smoke when pregnant than nonpoor mothers (24 vs. 15 percent).⁷

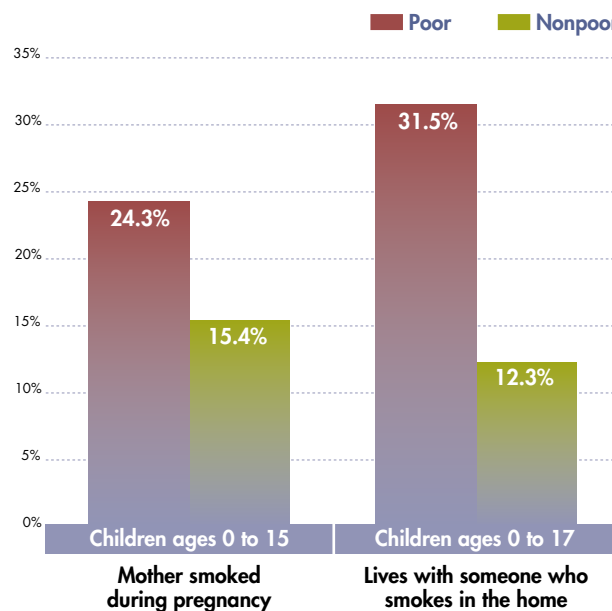
Children are also vulnerable to environmental toxins in that they have less control than adults in selecting where and with whom they live. Their daily routines are more circumscribed, which lengthens exposure to existing toxins in familiar settings, such as exposure to second-hand smoke at home. Children exposed to second-hand smoke are at increased risk of developing a range of respiratory illnesses, including asthma. In 2006 the U.S. surgeon general determined that there is no risk-free level of exposure to second-hand smoke.⁸ Figure 1 shows that poor children are more than twice as likely as nonpoor children to live in a household with someone who smokes in the home (32 percent vs. 12 percent).

Because they explore their surroundings with frequent hand-to-mouth behaviors, infants and toddlers can ingest harmful substances like lead-based paint chips and dust. Despite significant reductions in lead poisoning throughout the 1970s, lead remains one of the most prevalent environmental toxins affecting children.⁹

Many older homes have lead-based paint, which chips and accumulates in surrounding dust and soil. In addition, some water supply pipes in older buildings are soldered with lead. Lead has been shown to affect behavioral and cognitive functioning.¹⁰ Elevated blood lead levels are typically defined as 10 micrograms per deciliter, but lower concentrations of 2.5 and 5.0 micrograms per deciliter are also associated with adverse health outcomes.¹¹

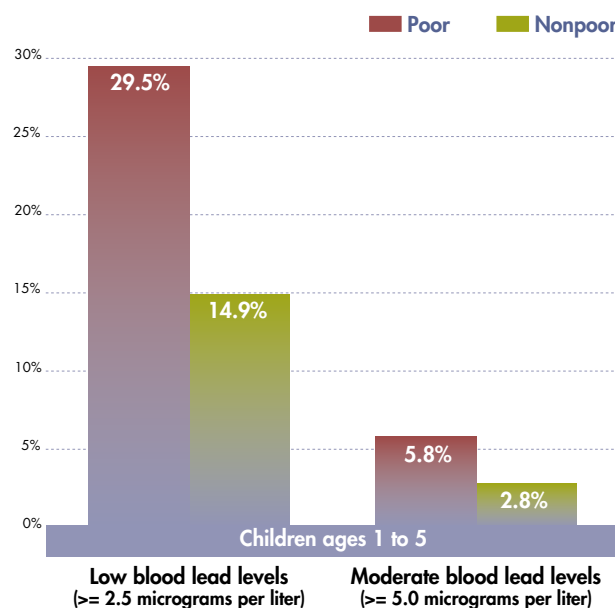
Figure 2 shows that poor children are twice as likely as nonpoor children to have levels of lead in their blood

Figure 1: Percent of poor and nonpoor children exposed to second-hand smoke, in utero and in the home, 2007-2008



Source: NCCP calculations based on the National Health and Nutrition Examination Survey (NHANES) 2007-2008.

Figure 2: Lead in the blood of children, 2007-2008



Source: Blood lead estimates are based on the National Health and Nutrition Examination Survey Laboratory Files (NHANES) 2007-2008.

of at least 2.5 micrograms per deciliter (30 percent vs. 15 percent). Poor children are also twice as likely to have moderate blood lead levels of five micrograms per deciliter (six percent vs. three percent).

Tobacco smoke and lead are two environmental health toxins of particular concern for children. Other harmful substances children commonly face in the home or school environment include air pollutants from diesel fuel exhaust and incinerators; pesticides; and bisphenol A and phthalates, which are endocrine-disrupting compounds found in many plastic con-

sumer products. In addition to asthma and behavioral and cognitive functioning, exposure to environmental toxins has also been associated with higher incidences of obesity, and metabolic disorders such as diabetes, and cancer.

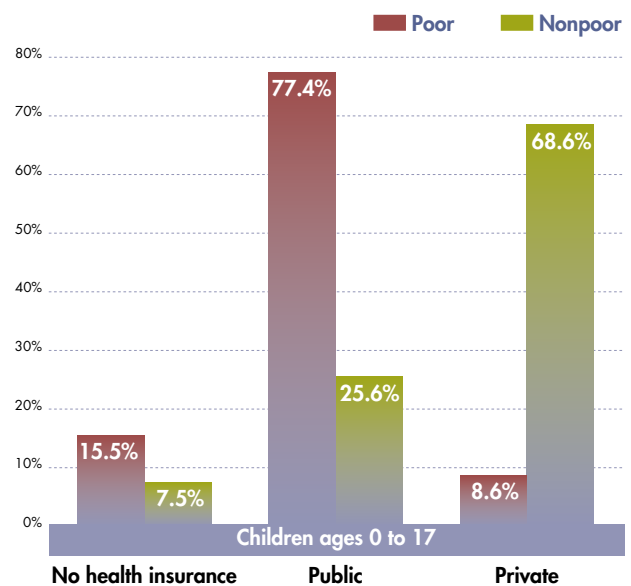
The field of research documenting the negative effects of these substances has grown significantly in recent years. In particular, there has been a heightened focus on how environmental toxin exposure interacts with other factors that contribute to susceptibility to disease, such as income and poverty status.¹²

Health Insurance Coverage

Over the course of the twentieth century health insurance has become the principal means of paying for medical care, and lack of health insurance remains the most significant barrier to healthcare access. Uninsured children are three times more likely to have an unmet health need than privately insured children.¹³

Figure 3 shows that more than one out of every six poor children (16 percent) have no health insurance coverage, a proportion twice as high as that for nonpoor children (eight percent). Of poor children with health insurance coverage, more than three-quarters (77 percent) are covered by public plans and only nine percent are covered by private insurance. By contrast, nearly 70 percent of nonpoor children rely on private insurance and just over one quarter (26 percent) rely on public insurance.

Figure 3: Type of health insurance coverage among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

Access to Healthcare Services

Health insurance is valuable to the extent that it provides access to medical care. Considered here are three principal domains of healthcare access – primary physician care, child immunizations, and dental care.

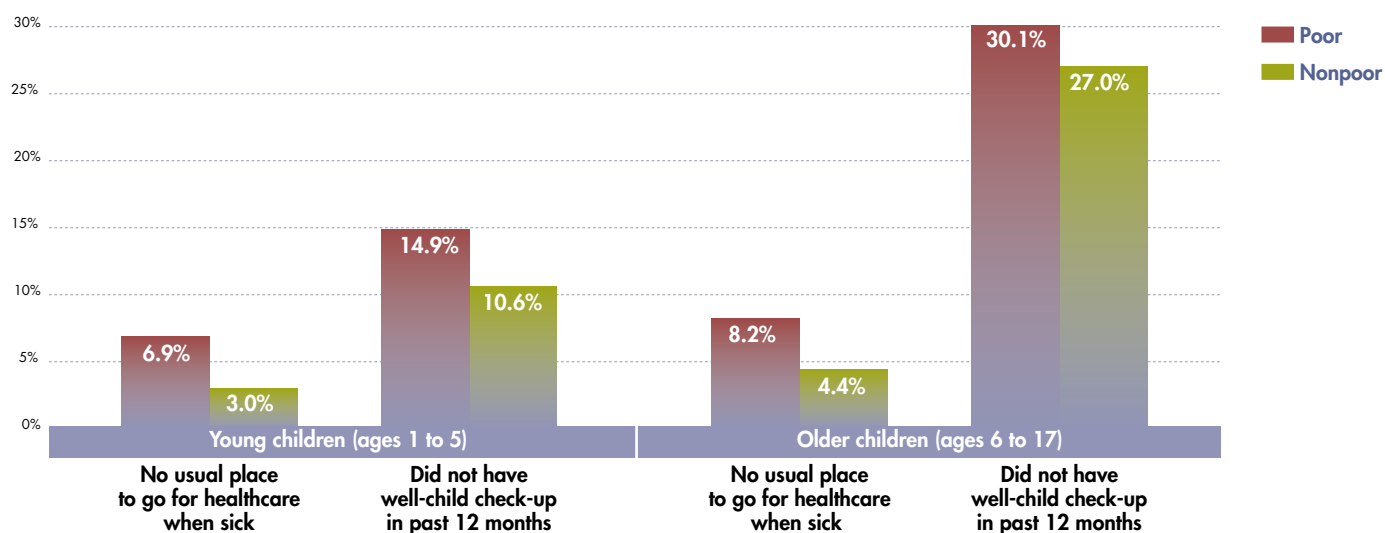
Two important overall indicators of access to primary healthcare services are whether the child has a regular place to go for care when sick and whether he/she had a “well-child” check-up in the previous year. Figure 4 shows these two indicators for young children (ages 1 to 5) and older children (ages 6 to 17). Among both age groups, poor children are less likely to have a place to go when sick and to have had a check-up in the previous year.

Widespread inoculation against preventable diseases is one of the most significant advances in public health. Since 1991, the American Pediatric Association has recommended that children 19 to 35 months old have a series of six vaccinations against such preventable diseases as diphtheria, tetanus, pertussis, poliovirus, measles, haemophilus influenzae type b (Hib), and hepatitis b, and chicken pox (varicella).¹⁴

One of the goals of *Healthy People 2010*, an initiative coordinated by the U.S. Department of Health and Human Services, was to ensure that 80 percent of U.S. children ages 19 to 35 months old received these vaccines.¹⁵ This report finds that this goal has been attained for 75 percent of poor infants and 78 percent of nonpoor infants (data are not shown). Our findings mirror those of the National Immunization Survey (NIS), which show that in 2009 the full series of recommended vaccinations were received by 64.8 percent of children living above the federal poverty guideline and 60.7 percent of children living below the federal poverty guideline.¹⁶

Good oral health is the product of public health advances (such as fluoride in water and toothpastes), routine professional care, and daily self-care. Indeed, brushing their teeth is one of the first ways that children learn to care for their health, and dental cavities is one of the most prevalent chronic childhood health conditions.¹⁷ Chronic dental disease is associated across the life course with significant morbidity and increased mortality.¹⁸ The morbidity includes cardiovascular disease, diabetes, and some forms of cancer.

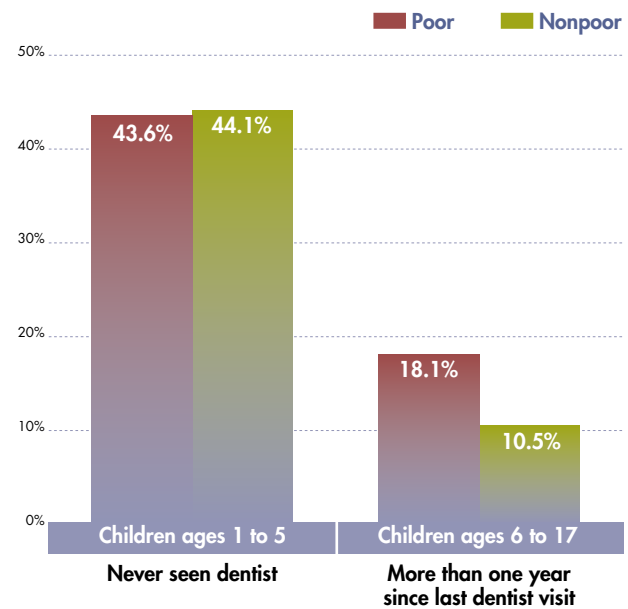
Figure 4: Physician care among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

According to the leading medical associations for pediatric physical and dental care, children should receive an initial oral examination between 6 and 12 months of age.¹⁹ Figure 5 shows that among children ages 1 to 5 years, just a little more than half of either group has seen a dentist. Comparisons of older children suggest that poor children see the dentist less often. Figure 5 shows that poor children ages 6 to 17 years are more than one and a half times as likely to have passed a year without a dental check-up as their nonpoor counterparts.

Figure 5: Dental care among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

Behavior

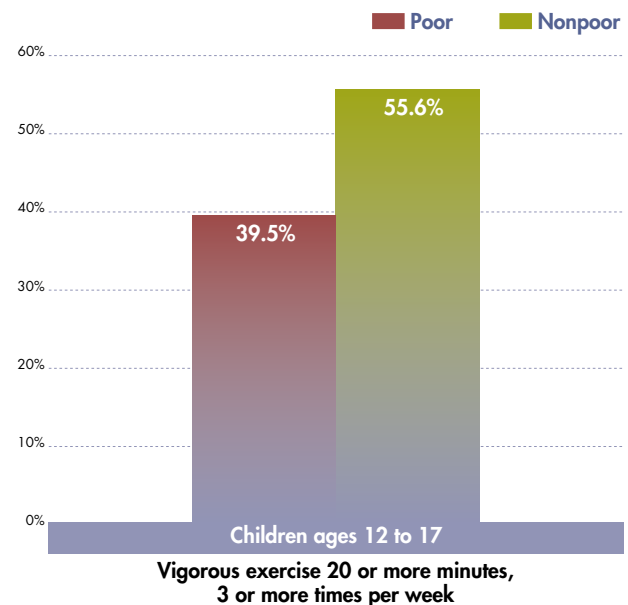
Epidemiologists estimate that behavior contributes to up to half of overall population differences in one of the clearest indicators of a healthy life – mortality.²⁰ This section includes indicators of some of the most essential elements of healthy behavior – good nutrition, regular exercise, and the avoidance of harmful substances. For the purposes of this brief, behavior is viewed within an ecological framework as action influenced by individual, interpersonal, community, and social relationships, and not simply the result of individual choice.²¹

Good nutrition is a critically important behavioral determinant of good overall health. In addition to experiencing higher rates of food insecurity, which is addressed in a related brief, poor children are less likely to be well nourished.²²

As with nutrition, exercise habits are formed early in life. Intentional exercise, however, is most commonly tracked among adolescents. One of the goals of *Healthy People 2010* is to increase the proportion of adolescents who engage in vigorous exercise for at least three intervals of 20 minutes or more per week.²³

Figure 6 shows that poor adolescents (ages 12 to 17) are less likely than nonpoor adolescents to meet this threshold (40 percent vs. 56 percent).

Figure 6: Exercise among poor and nonpoor children, 2007-2008

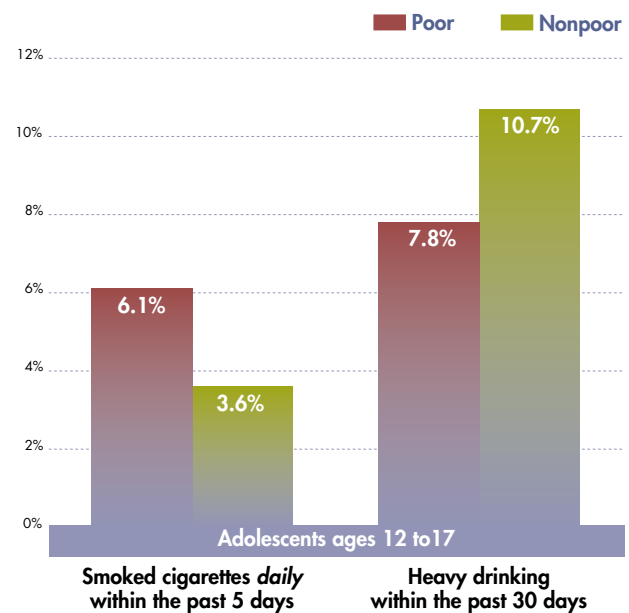


Source: NCCP calculations based on the National Health and Nutrition Examination Survey (NHANES) 2007-2008.

Regular cigarette smoking poses well-documented long-term risks for disease and premature death, and cigarette use in adolescence is associated with long-term cigarette dependence.²⁴ Figure 7 shows that poor adolescents were 1.5 times as likely as nonpoor adolescents to report that they smoked cigarettes daily within the past five days (six percent vs. four percent).

Alcohol is the most common substance abused during adolescence, when it is often associated with motor vehicle accidents, injuries, and school problems.²⁵ Figure 7 shows that poor adolescents were slightly *less* likely than nonpoor adolescents to report drinking heavily (such as consuming five or more alcoholic beverages on at least one day) within the past month (eight percent vs. eleven percent).

Figure 7: Cigarette smoking and alcohol use among poor and nonpoor adolescents, 1999-2004



Source: National Health Statistics Reports, 2009.

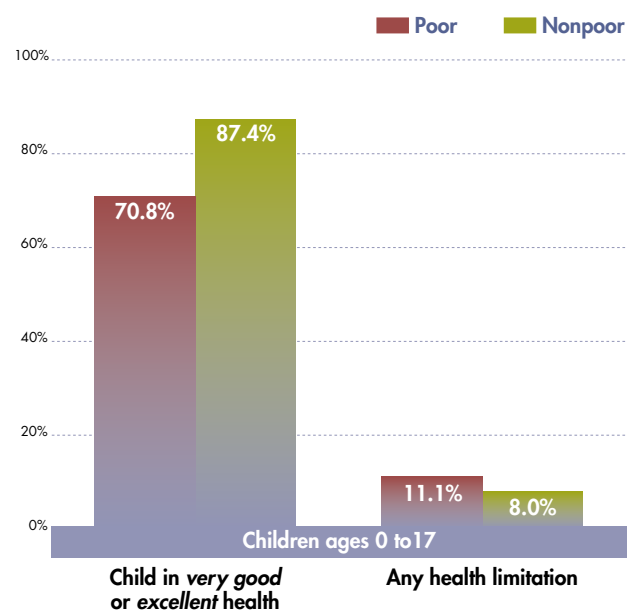
Health Outcomes

Each of the preceding domains is important to the extent that it affects children's health. This section assesses health outcomes directly, including parents' overall assessment of their children's health and health limitations, neonatal and infant health, asthma, emotional and behavioral problems that interfere with learning, and indicators of unhealthy body weight.

Research shows that self-rated health on a five-point scale from "poor" to "excellent," is a reliable predictor of later survival, morbidity, and health care need.²⁶ Parents' reports of their children's health seem to be similarly reliable.²⁷ Figure 8 shows that poor children's parents are less likely than nonpoor children's parents to describe their children's health as "very good" or "excellent" (71 percent vs. 87 percent).

Overall health limitations include chronic conditions that limit a child's ability to fully participate in activities appropriate to his or her age, such as walking, playing, or school work. Examples of such conditions

Figure 8: Overall health and health limitations among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

are problems with vision, hearing, or speech; birth defects; injuries; developmental delays, including mental retardation; epilepsy; or asthma. Figure 8 shows that poor children are almost twice as likely to have a serious health limitation (11 percent vs. 8 percent).

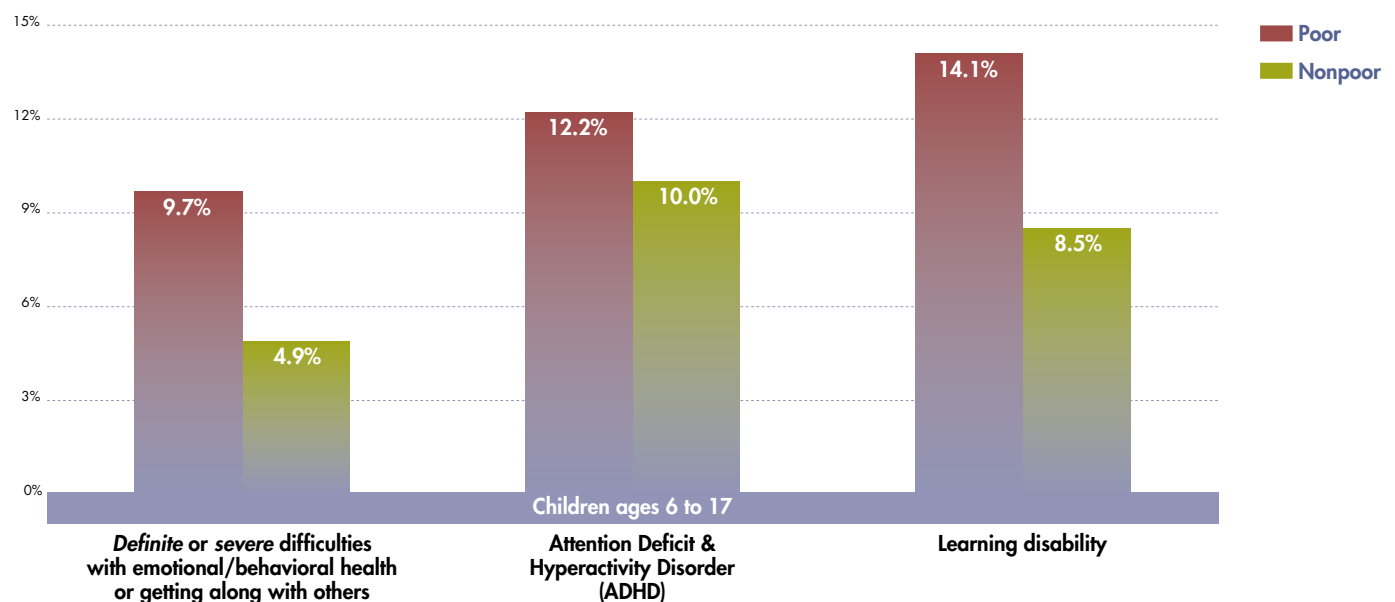
Low birthweight (that is, less than 5 lbs. 5 oz.) and preterm births (that is, before 37 weeks gestation), which are highly correlated, are among the leading causes of infant death in the U.S. Further, children born with low birthweight are at a higher risk of suffering poor health and economic outcomes later in life.²⁸ Poor children are slightly more likely than nonpoor children to be born low birthweight (11 percent vs. 9 percent, not shown).

Asthma is one of the most common chronic health conditions in children and the leading cause of child hospitalizations.²⁹ Asthma can be aggravated by second-hand smoke and pollution, and yet managed with the use of medication. Poor children are more likely than nonpoor children to have been diagnosed with asthma (18 percent vs. 13 percent). This is consistent with the existing literature on asthma disparities by income, race, and ethnicity.³⁰

When poor child health interferes with learning it detracts from children's ability to achieve their fullest potential. Emotional problems, learning disabilities, and conditions like Attention Deficit and Hyperactivity Disorder (ADHD) often pose significant obstacles to children's academic and career achievements.³¹ Figure 9 shows that poor parents are more than twice as likely as nonpoor parents to report their child has "definite to severe" emotional, behavioral, or social problems (10 percent vs. five percent). They are also more likely to report that their child has been diagnosed with ADHD (12 percent vs. 10 percent) or a learning disability (14 percent vs. nine percent).

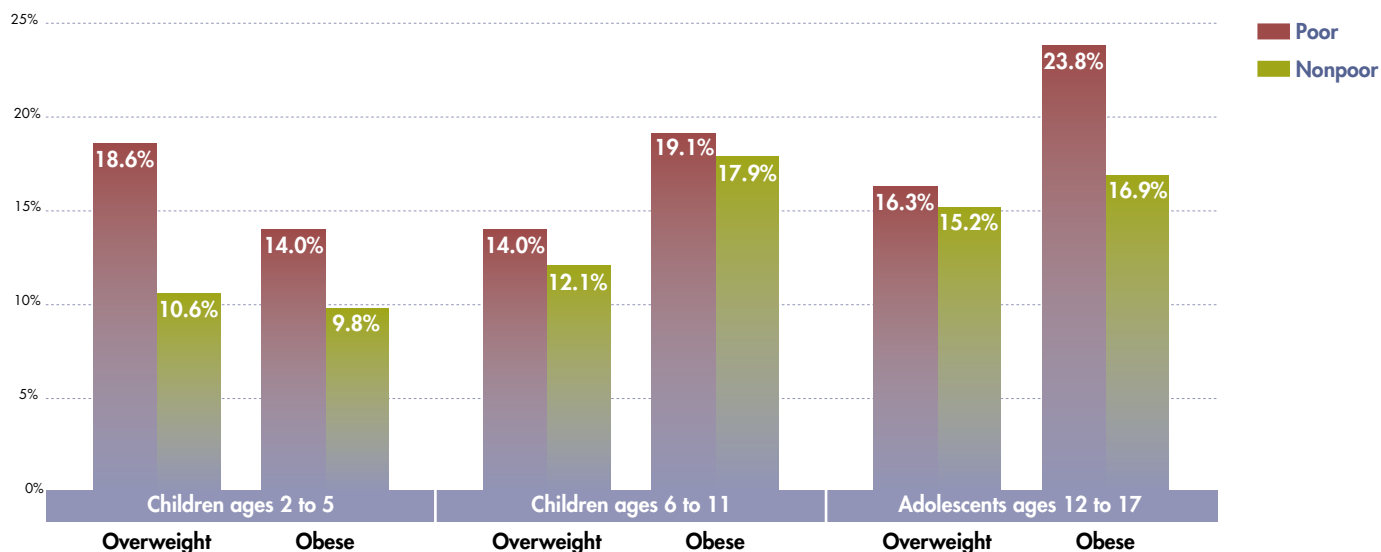
One of the clearest indicators of health interfering with education is health-related absenteeism.³² For this report, we consider health-related school absences of five days or more (such as about three percent of the school year) as an indicator of children whose health is beginning to interfere with education. Poor school-aged children are more likely than nonpoor children to have missed five or more days of school in the past year for health related reasons (20 percent vs. 15 percent, not shown).

Figure 9: Emotional and behavioral problems and learning disabilities among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

Figure 10: Overweight and obese among poor and nonpoor children, 2009



Source: NCCP calculations based on the National Health Interview Survey (NHIS) 2009.

Children who are overweight are more likely to have poor self esteem and to be overweight as an adult, which poses greater risks for future health conditions, such as diabetes, heart disease, stroke, and certain cancers.³³ Following the definitions of overweight and obesity established by the Centers for Disease Control and Prevention, we characterize children with a body mass score between the 85th and 94th percentile of normal for their age and sex as overweight, and those

with a body mass score greater than or equal to the 95th percentile for age and sex, as obese. Figure 10 shows that within each of the three age groups of children, poor children are more likely to be overweight and obese than nonpoor children. The gap in overweight is greatest among young children ages 2 to 5 years, and the gap in obesity is greatest among adolescents ages 12 to 17.

Policy Recommendations: Promising Practices for Reducing Health Disparities

The relationship between health and income is one of the most well-documented and longstanding dimensions of inequality. Throughout history the poor have been more vulnerable to the prevailing threats to health – famines in the agricultural era, contagious diseases in the industrial era, and degenerative diseases in our own era.³⁴ Within this context, improving poor children's health entails collective investments to reduce exposure to known toxins, to provide families with the means to access high-quality, responsive care to promote healthy behaviors, and to remediate illnesses.

This report finds evidence of health disparities between poor and nonpoor children within each of the five health domains considered – environmental health, health insurance coverage, access to healthcare services, healthy behaviors, and health outcomes. It closes by highlighting some particularly promising efforts within three of these five domains.

Environmental health: Efforts to reduce parental smoking

Two of the most troubling findings of this report are that more than one-quarter of poor children live in a family with someone who smokes every day, and nearly one-quarter of the mothers of poor children smoked during pregnancy.

Efforts to reduce smoking during pregnancy have been rigorously evaluated and some have shown promise. A review of 64 clinical trials, the most rigorous research designs available for assessing the effectiveness of intervention programs, finds that three-quarters of the programs reduced smoking rates among expecting mothers, by six percent, on average.³⁵

Access to Healthcare Services: New federal funding for home visiting programs and oral health programs

If the financial means to pay for healthcare were all that separated the health experiences of the poor from the nonpoor, health insurance might completely eliminate health disparities. Unfortunately, the disadvantages of poor families are more complex. In addition to the means to pay for healthcare, poor children need to be assured of care responsive to the stresses affecting low-income families. One model of care with demonstrable effects is the home health visiting program.

In home health visiting programs, professionals assess mother and children's health needs, offering informed advice about prenatal care, delivery, and newborn care, and assisting in preparing a safe home for newborn care. Although currently present in 40 states, the implementation of the programs varies widely depending on the objectives of the program and the populations of children they serve.³⁶ Consequently, their effects have been mixed. However, research suggests the most successful programs, such as the Nurse Family Partnership, have reduced child maltreatment and accidental injuries, improved child health and parenting practices, as well as increased parental employment and reduced children's exposure to the juvenile justice system and parents' reliance on public assistance.³⁷

President Obama's 2010 budget requested \$8.6 billion over 10 years to fund a major new home visiting initiative, a request that Congress did not explicitly address in its FY10 Consolidated Appropriation Labor-HHS Bill.³⁸ Since then, several bills supporting home visiting programs have been introduced in Congress, including the Early Support for Families Act (H.R. 2667) and the Pregnant Woman Support Act (S. 270 and H.R. 2035).

The Affordable Care Act, signed into law in March of 2010, provides \$1.5 billion over five years to support

maternal, infant, and early childhood home visiting programs. In response to a formal request from the Administration for Children and Families (ACF; a division of the U.S. Department of Health and Human Services) for guidance in implementing these programs, NCCP recommends targeting home visitation supports to the most vulnerable families; embedding proven and appropriate screening, referral, and behavioral health services within the model; and investing in technical assistance and support mechanisms to ensure quality service delivery.³⁹

In late July of 2009, the federal Department of Health and Human Services awarded the initial \$88 million of these funds to support efforts in the 49 states, the District of Columbia, and the five territories that submitted formal applications for these resources, (that is, excepting Wyoming).⁴⁰ State allocations were based on the share of the nation's poor children who reside in each state, with the largest grants (\$3.1 to \$7.8 million) going to the most populous states (California, Texas, New York, Florida, and Illinois).

New federal funding has also been committed to reducing disparities in oral health. The Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) requires states to provide dental coverage to all children enrolled in CHIP. In addition, CHIPRA gives states the option of providing reduced cost dental-only plans to privately insured children with limited dental coverage.

Behavior and outcomes: Reducing obesity through taxation, regulation, and increasing access to healthy foods

A recent editorial in the *Journal of the American Medical Association* argues that the national epidemic of obesity and inactivity threatens recent gains in quality and length of life attributable to reductions in cigarette smoking.⁴¹

A review of the full spectrum of policy recommendations aimed at reducing obesity is beyond the scope of this document and can be found elsewhere.⁴² Recommendations that specifically relate to young children, such as the taxation/regulation of sweetened

beverages and efforts to increase the healthy food choices for poor families are discussed here.

One promising approach is the taxation and/or regulation of sweetened beverages. Thirty-three states currently impose a sales tax on soft drinks, at a mean tax rate of 5.2 percent.⁴³ A number of high-quality clinical trials have found associations between sugar-sweetened beverage consumption and body weight. Between 1977 and 2002, the per-capita consumption of sugar-sweetened beverages in the U.S. doubled across all age groups. Based on the known price elasticity of soft-drinks in the U.S., public health advocates estimate that a one-cent-per-ounce tax on sugar-sweetened beverages could reduce calorie consumption from these beverages by 10 percent.

Although regressive, proponents argue that this excise tax encourages consumers to make better long-term consumption decisions, and raises public revenues that help to pay for the public health costs of private over-consumption. In addition, they argue, a national one-cent-per-ounce tax estimate that it could raise \$14.9 billion, which could then be used to support childhood nutrition programs.

Regulation is a means of limiting children's exposure to sweetened beverages, either by local health departments limiting the type and portion of sweetened juice served in child care facilities or the type of choices available in school vending machines. Although generally endorsed as a good policy choice for the prevention of obesity, the evidence of the effectiveness of such a policy is not clear.

Increasing access to healthy foods for poor families is a third area of potential policy action. Research suggests that obesity is to a large extent, an economic problem. Stated simply, fattening foods (high-density, low-nutrition foods) are cheaper than healthy foods (low-density, high-nutrition foods).⁴⁴ Policy options for states include adding green market stamps into their food stamp and WIC programs, and offering incentives for businesses to relocate or change their current practice to locations where poor families have no access to fruits and vegetables (so-called "food deserts").

Data Sources and Definitions

This report draws primarily on the 2009 National Health Interview Survey (NHIS) and the 2007-2008 National Health and Nutrition Examination Survey (NHANES), two annual national health surveys, sponsored jointly by the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention, and the National Center for Health Statistics.

Established by the federal National Health Survey Act of 1956, NHIS is an annual survey used to monitor the health of the civilian noninstitutionalized population of the United States. The 2008 survey file, from which this report is drawn, contains information on a nationally representative sample of more than 74,000 individuals in close to 29,000 households. The NHIS is comprised of a core household interview in which the health status of each individual within the household is assessed, in addition to a set of questions about the health of one sample adult and one sample child for each family within each household. Data for children younger than 17 years old are reported by the person most knowledgeable about the child's health, often a parent or guardian.

NHANES provides detailed information about the health and nutritional status of adults and children. The NHANES is unique in that it combines information from survey interviews, professional physical examinations, and laboratory tests. Thus, while the NHIS asks a comprehensive series of questions of a large, representative sample of households and individuals, the NHANES collects more detailed survey, examination, and laboratory data on a smaller sample of respondents in 15 randomly selected counties across the country each year. This report draws on NHANES 2007-2008 data, which reflects the experiences of close to 10,000 individuals.

In order to compare health outcomes for poor and nonpoor survey respondents, this report uses similar household poverty measures available in the NHIS and the NHANES. Both surveys ask respondents to report the family's total income from several sources, including: earnings, retirement income, disability payments, interest income, and public assistance programs. Both surveys also characterize total family income relative to the census poverty threshold, taking into account not only the overall family size, but also the number of children in the family. In both surveys, families reported total income from the prior year and health status in the current year. Both surveys provide sampling weights to maintain the representativeness intended of survey responses, adjusting for selection, nonresponse, and stratification. These weights were used in this analysis.

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