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All State Profiles: www.commissiononhealth.org/statedata

Reaching America's Health Potential Starts With Healthy Children:

How Do States Compare?

Il parents want their children to grow up to live long, healthy lives, yet—unfortunately—not all children have the same opportunity to be healthy. Factors such as where children live, how much education their parents have and their race and ethnicity can make a real difference in their health—as children and as adults.

America's children are this nation's greatest resource, yet tremendous health differences exist among them—gaps that contradict the premise of equal opportunity for all Americans, undermine our economic productivity and affect our ability to compete globally.

The Robert Wood Johnson Foundation Commission to Build a Healthier America is examining how we live our lives and how the surrounding social, economic and physical environment can affect our health. Based on this inquiry, the Commission will identify specific, feasible steps to improve all Americans' health.

This chartbook, *America's Health Starts With Healthy Children: How Do States Compare?*, examines the health of children from different socioeconomic backgrounds in every state to document how healthy our nation's children are now and how healthy they could be if we as a nation were realizing our full health potential.

Why a chartbook on children's health? Research has consistently shown that brain, cognitive and behavioral development early in life are strongly linked to health outcomes later in life, including cardiovascular disease and stroke, high blood pressure, diabetes, obesity, smoking, drug use and depression. The right opportunities in early childhood can put a child on the path to good health.

For most of us—children and adults alike—there are big gaps between how healthy we are and how healthy we could be. Americans at every income and educational level could be significantly healthier. That's what this Commission is about—seeking the best, practical strategies to help all Americans reach their full health potential. And this chartbook helps make clear areas in which we can work together to make a difference.

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Executive Summary

Children's health is the foundation for health throughout life, and measures of child health are important indicators of the overall health of our nation. This chartbook provides state and national data on two important and widely-used measures of children's health: infant mortality and children's general health status as reported by their parents. This report also compares the current state of children's health in the United States to achievable national benchmarks. For infant mortality, this national benchmark is set at the current lowest rate of infant mortality seen in any state among mothers with 16 or more years of schooling. For children's general health status, the national benchmark is set at the lowest rate in any state of less than optimal health among children in families that both were higher income and practiced healthy behaviors. The gap between where we could be as a nation and the current status of children's health represents unrealized health potential.

The data illustrate a consistent and striking pattern of incremental improvements in health with increasing levels of family income and educational attainment: As family income and levels of education rise, health improves. In almost every state, shortfalls in health are greatest among children in the poorest or least-educated households, but even middle-class children are less healthy than children with greater advantages. The differences in health between children growing up in the most-advantaged social and economic conditions and all others contribute to unrealized health potential in every state. And there is room for improvement even in the most-advantaged groups, as indicated by comparison with national health benchmarks reflecting a level of good health that should be attainable for all children in every state.

National health benchmark:

The level of good health that should be attainable for all infants or children in every state. For infant mortality, the national benchmark used here—3.2 deaths per 1,000 live births—was the lowest infant mortality rate experienced among babies born to the most-educated mothers in any state. For children's general health status, the national benchmark—3.5 percent of children with less than excellent or very good health—was the lowest rate in any state of less than optimal health among children living in higher-income families where adults practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly).

Unrealized health potential is the difference between 'what is' (the current level of children's health) and 'what is attainable' (the level of health that would occur if all children were as healthy as children in the most socially-advantaged group).

Key Findings

The data reveal substantial shortfalls in America's health potential at the national level and in every state. The findings presented here provide new state-by-state evidence of the extent of unrealized health potential among children in the United States.

Infant Mortality

- In the United States overall during 2000-2002, more than six of every 1,000 babies born alive each year died before reaching their first birthdays. Overall infant mortality rates in states varied considerably, from 4.6 deaths per 1,000 live births in Massachusetts to 11.0 deaths per 1,000 live births in Washington, D.C.
- Nationally, and in nearly every state, infant mortality rates increased with decreasing levels of mothers' education. Compared with babies born to the most-educated mothers (those with at least 16 years of schooling), infant mortality rates were higher—by as much as 12 deaths per 1,000 live births—for babies born to the least-educated mothers (those with less than 12 years of completed schooling). With few exceptions, infant mortality rates also were higher—by up to five deaths per 1,000 live births—among babies born to mothers in the second highest education group (those with 13-15 years of completed schooling).
- While gaps in infant mortality by mothers' education were evident in every state, the difference between the overall infant mortality rate and the rate for babies born to the most-educated mothers varied from less than one (in Maine) to over seven (in Washington, D.C.) deaths per 1,000 live births.
- Even among babies born to the most-educated mothers, infant mortality rates in nearly every state exceeded the national benchmark—3.2 infant deaths per 1,000 live births—which should be attainable.

Children's General Health Status

- In the United States during 2003, 15.9 percent of children ages 17 years or younger had less than
 optimal (neither very good nor excellent) health. The percent of children with less than optimal
 health varied across states from 6.9 percent in Vermont to 22.8 percent in Texas.
- Nationally, and in every state, the percent of children with less than optimal health varied with family income. Compared with higher-income children (in families with incomes at or above 400% of the Federal Poverty Level), children in poor families (below 100% of the Federal Poverty Level) were more likely—over six times as likely, in some states—to be in less than optimal health. Differences were not confined to comparisons between the top and bottom groups. With few exceptions, children in middle-income families (200-399% of the Federal Poverty Level) also appear more likely—over twice as likely, in some states—than children in higher-income families to be in less than optimal health.
- While the gap in children's general health status by income was evident in every state, the size of
 the difference between the overall percent of children in less than optimal health and the percent
 among children in higher-income families varied across states—from a difference of 2 percent in
 New Hampshire to 16 percent in Texas.
- Even among children in higher-income families, the percent of children with less than optimal health in almost every state exceeded the national benchmark—3.5 percent—which should be attainable.



Introduction

Children's health is the foundation for health throughout life, and measures of child health are important indicators of our nation's overall state of health. This chartbook focuses on the health of children to explore whether we are reaching our full health potential as a nation and in every state. Considering the differences between 'what is' (current overall levels of child health) and 'what is attainable' (the levels of health that would be achieved if all children were as healthy as children in the most favorable social and economic conditions), the new state-by-state evidence presented here reveals substantial unrealized health potential among America's children.

Purpose

This chartbook is intended to inform, raise awareness and stimulate discussion. Its purpose is to provide information that will be helpful to policy-makers, advocates and other leaders in their efforts to: (1) assess how far they are from reaching the full health potential of children in their state; (2) raise awareness about the need to address social factors in order to close the current gaps in children's health; and (3) stimulate discussion and debate within states and nationally about promising directions for closing those gaps.

While analyzing the causes of the health gaps was not within the scope of this Commission's work, a large body of research shows that the causes are complex, and that medical care interventions are important but not sufficient. The information presented should be used as a point of departure for a process of inquiry—stimulating an exploration of the most promising national and state policies to realize America's full health potential by shaping healthier conditions in which children and their families live, work, learn and play.

This report was produced by research staff of the Robert Wood Johnson Foundation Commission to Build a Healthier America to aid Commissioners as they explore actions outside the medical care system that could improve the health of all Americans. Additional information about the Commission is available at www.commissiononhealth.org.

Content

Findings from America's Health Starts with Healthy Children: How Do States Compare? are presented in two forms: a print overview and a Web version that contains a wealth of state-by-state data. The print version includes three sets of charts. The first set describes how two key indicators of children's health vary markedly at the national level by social and economic factors. The second set of tables and maps describes differences in these indicators by social and economic factors at the state level, and states are ranked according to the size of the unrealized health potential in children's health. The final set of charts provides an example of the information that is available on the Commission Web site for every state.

Readers can download individual files for each state at www.commissiononhealth.org/statedata. The files provide data on infant mortality and children's general health status, as well as information on how social factors such as a family's income, parents' education levels and racial or ethnic group are linked with infant mortality and children's general health status in the state.

Children's Health Is an Indicator of Our Nation's Health

Children's Health Shapes Health Throughout Life

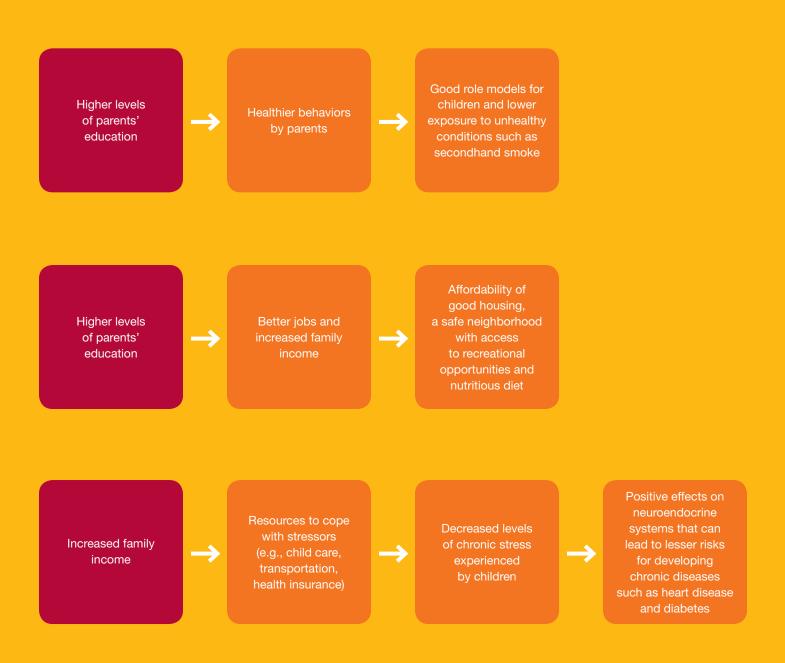
Good health and a nurturing and stimulating environment during childhood determine our potential for health and well-being throughout life. Getting a healthy start in life improves a child's chances of becoming a healthy adult and avoiding chronic conditions that can be limiting or disabling. Childhood obesity, for example, is a strong predictor of adult obesity, with the accompanying risks of chronic disease, disability and shortened life expectancy. In addition to children's health, child development also shapes adult health in powerful ways. A large body of research has consistently shown that cognitive and behavioral development early in life are strongly linked to an array of important health outcomes later in life. Adult health outcomes that have been linked to early child development (often through effects of educational attainment and/or health-related behaviors, and also through more direct physiologic effects) include heart disease and stroke, high blood pressure, diabetes, obesity, smoking, drug use and depression. These conditions account for a major portion of preventable illness and premature death in the United States.

What Shapes Children's Health?

A child's health is powerfully shaped by the environment in which he or she lives, learns and plays. Both family and community matter and private and public policies at the local, state and national level influence a child's opportunity to be healthy. This chartbook highlights three of many social factors that are known to be strongly related to children's health: levels of household income, educational attainment in the family, and racial or ethnic group. Many -although not all -modifiable factors known to influence children's health are shaped in significant ways by family income and/ or education. For example, educated parents may have a better understanding of health-related behaviors, along with resources to make healthier choices. They may be better able to obtain wellpaying jobs, which in turn can determine income and access to health insurance. Income is often linked with housing quality and neighborhood of residence, as well as being able to afford a healthy diet. In addition to family characteristics, community influences such as safety, school quality, presence of favorable role models and availability of healthful foods and recreational opportunities also affect children's health. Racial or ethnic group matters in part because it continues to influence educational and employment opportunities; in addition, discrimination and its legacy in residential segregation mean that black and Hispanic families more often live in substandard housing and unsafe or deteriorating neighborhood conditions compared with whites with similar incomes and education.

Medical care is important for children's health. For example, timely immunizations and regular treatment for conditions like asthma can make a big difference in overall well-being. Genetic predisposition to certain diseases also influences children's health. But many experts have concluded that medical care and genes actually play a relatively minor role compared with the influence of the physical and social conditions in which children grow up. Children continue to develop not only physically but also cognitively and behaviorally through adolescence, but the first five years of life are particularly crucial.

How Social Environments in Childhood Can Shape Health Later in Life



A child's health is powerfully shaped by the environment in which he or she lives, learns and plays. Both family and community matter.

What Do We Know About Ways to Improve Children's Health?

Although there is much more to learn about how to improve children's health, significant new knowledge developed over the past 15 years points us in promising directions. We now know that several modifiable factors can make a dramatic difference in children's health and well-being. Not surprisingly, the greatest improvement can generally be seen among those who start off farthest behind as a result of living in disadvantaged circumstances. We have learned, however, that potential improvements in health are not limited to children in poor and less-educated families; even children in families considered to be "middle class"—in other words, the majority of children in this country—can achieve improved health with timely interventions in the following areas:

- Adequate stimulation and interaction with supportive caregivers, including family, teachers and child-care workers.
- A nutritious diet and sufficient physical activity.
- Safe and health-promoting neighborhood conditions, with access to grocery stores, sidewalks and parks and recreational areas.

Improving children's social and physical environments—which are clearly linked with household income and education—enhances their health and cognitive, behavioral and physical development.

Improving children's health and cognitive, behavioral and physical development gives them the foundation needed to be healthy as adults.

For more information see Issue Brief 1: Early Childhood Experiences: Laying the Foundation for Health Across a Lifetime at www.commissiononhealth.org.

Measures of Child Health

- Infant mortality. Deaths during the first year of life were considered a key indicator of population health. Infant mortality rates—the number of infant deaths per 1,000 live births—were examined at the national and state levels for babies born to women ages 20 years or older; this age restriction permitted us to more completely examine differences in infant mortality by mother's education. Infant mortality rates were considered to be statistically reliable for groups with at least 20 infant deaths.
- Children's general health status. A parent's or guardian's overall assessment of a child's health (as excellent, very good, good, fair or poor), which studies show corresponds closely with objective clinical assessments by health professionals. The focus at the national and state levels was on the percentage of children ages 17 years or younger whose general health status was considered to be less than optimal—that is, assessed by their parents or guardians to be other than excellent or very good. Rates of less than optimal health were considered to be statistically reliable when the relative standard errors were 30 percent or less.

Social Factors

- Income. Taking family size into account, family income was categorized in 100-200 percent increments of the Federal Poverty Level (FPL), which has been defined as the amount of income providing a bare minimum of food, clothing, transportation, shelter and other necessities. In 2006, the U.S. FPL was \$16,079 for a family of three and \$20,614 for a family of four. Children were considered to be poor (with household incomes below 100% of FPL), near poor (100-199% of FPL), middle income (200-399% of FPL), or higher income (400% of FPL or higher).
- Education. Slightly different measures were used to describe education, depending on the indicator of children's health and data source. To examine infant mortality in relation to social factors, the educational attainment of the mother was measured in years of schooling and categorized to correspond to level of education (0–11 years, 12 years, 13–15 years, and 16 or more years). To describe social factors at the national and state levels and to examine children's general health status by those factors, education was categorized according to the highest level attained by any person in the household. Social factors were examined using four categories (less than high-school graduate, high-school graduate, some college and college graduate); children's general health status was examined using three categories (less than high-school graduate, high-school graduate and at least some college).
- Racial or ethnic group. Mother's (when examining infant mortality) and child's (when examining children's general health status) racial or ethnic group were considered using slightly different categories depending on the data source and size of the groups. At the national level, we considered: (a) all categories for which information was collected by the U.S. Census Bureau, to describe the racial or ethnic composition of all children; and (b) three categories—non-Hispanic whites, non-Hispanic blacks and Hispanics, to describe differences in the children's health indicators by racial or ethnic group. At the state level, we considered: (a) all categories for which information in the state was collected by the National Survey of Children's Health, to describe the racial or ethnic composition of all children; and (b) categories in the relevant data source that included at least 3 percent of children in the state (smaller groups and individuals reporting more than one racial or ethnic group were included with "other"), to describe differences in the children's health indicators.

Data Sources

Four sources of data were used to produce this chartbook:

- The 2006 American Community Survey (ACS), conducted by the U.S. Census Bureau, was analyzed to obtain information, nationally and in each state, on household income and racial or ethnic group.
- The 2005-2007 Current Population Survey (CPS), conducted by the U.S. Census Bureau, was analyzed to obtain information, nationally and in each state, on household education levels.
- The 2000-2002 Period Linked Birth/Infant Death Data Set from the Centers for Disease Control
 and Prevention, National Center for Health Statistics, was used to obtain information on infant
 mortality, nationally and in each state, by mother's educational attainment and mother's racial
 or ethnic group.
- The 2003 National Survey of Children's Health (NSCH), conducted by the Centers for Disease Control and Prevention, National Center for Health Statistics, was analyzed to obtain information on: children's general health status, nationally and in each state, by household income and education and by child's racial or ethnic group; children's general health status by income within racial or ethnic groups nationally; and children's general health status according to health-related behaviors of persons in their families, within each household income group nationally.

A full list of data sources, including complete descriptions and limitations of sources, can be found in the Technical Notes available at www.commissiononhealth.org/PDF/ChartbookTechNotes.pdf.

Analyses

We examined differences in each of the two measures of children's health by social groups at both the national and state levels. Infant mortality was examined, by mother's education and by mother's racial or ethnic group, at the national level and within each state; information on income was not included in the data source. Children's general health status was examined, by household income and level of education and by child's racial or ethnic group, at the national level and within each state; in addition, we examined differences at the national level in this health measure by income within racial or ethnic groups and by household health-related behaviors within income groups. We estimated the size of the "health gaps" for each state and Washington, D.C., using a standard measure known as the *Population Attributable Risk*, or PAR. In this report, the PAR was calculated at the state level to quantify the improvement in overall infant mortality or children's general health status that would occur if all infants or children in the state had the level of health experienced by those in the state's most socially-advantaged group. States were ranked according to the size of this health gap; states with the same size gap (to one decimal point) were given the same ranking. For mapping purposes, states were grouped based on the size of the gaps into three approximately equal groups (i.e., as having small, medium or large gaps).

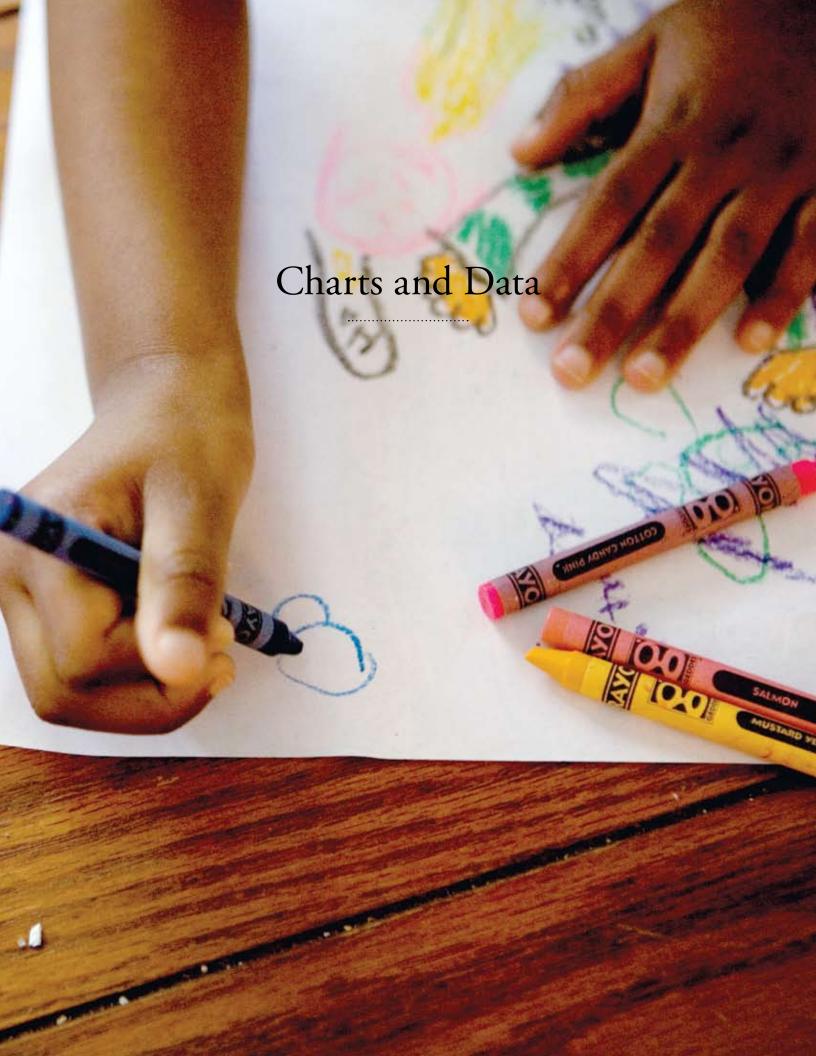
It is important to note that the highest education and income groups used here to reflect the most socially-advantaged groups were relatively large: Nationally, 35 percent of children lived in households with at least one adult who had graduated from college and 28 percent lived in families with incomes at or above four times the FPL. If the data sources had permitted comparisons with children in the top 5 or 10 percent of family education and income levels, the health differences could have been even larger. The health gaps reported here thus are likely to understate the true magnitude and extent of unrealized health potential in each state and in the nation overall.

A "national benchmark" was also calculated for each measure of children's health. This additional reference point-intended to represent a level of good health that should be attainable for all children in every state—is featured to emphasize two additional points:

- (1) Levels of health among children are better in some states than in others, even when only children in the highest income or education groups are considered.
- (2) Differences in health occur among children even within the most socially-advantaged groups. At every level of family income or education, children's opportunities for good health are also shaped by other factors, including whether the adults they live with practice good health-related habits like exercising regularly.

For infant mortality, the national benchmark used here -3.2 deaths per 1,000 live births, found in New Jersey and Washington state - was the lowest statistically-reliable infant mortality rate in any state for babies born to the most-educated mothers. (Information on health-related behaviors was not available in the infant mortality data source.) For children's general health status, the national benchmark - 3.5 percent of children in less than very good health, found in Colorado - was selected as the lowest statistically-reliable rate in any state of less than optimal health among children in higher-income households where adults practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly).

For further information on analytic methods, see the Technical Notes for this document at www.commissiononhealth.org/PDF/ChartbookTechNotes.pdf.

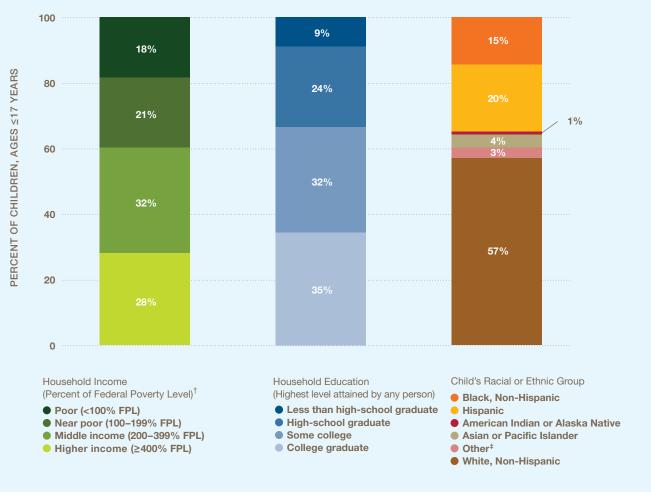


UNITED STATES:

Social Factors Affecting Children's Health

Health during childhood is powerfully linked with social factors such as the income and education levels of a child's family and his or her racial or ethnic group. This national snapshot of children ages 17 years or younger shows that:

- Two fifths of children nationwide live in poor or near-poor households, one third live in middleincome households and more than one fourth live in higher-income households.
- One third of children live in households where no one has schooling beyond high school, one third live with at least one person who has attended but not completed college and one third live with at least one college graduate.
- 57 percent of children nationwide are non-Hispanic white, 20 percent are Hispanic, 15 percent are non-Hispanic black, 4 percent are Asian or Pacific Islander, 1 percent are American Indian or Alaska Native and 3 percent are in another or more than one racial or ethnic group.



Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2006 American Community Survey (for data on income and racial or ethnic group); 2005-2007 Current Population Survey (for education data).

[†] Guidelines set by the U.S. government for the amount of income providing a bare minimum of food, clothing, transportation, shelter and other necessities. In 2006, the U.S. FPL was \$16,079 for a family of three and \$20,614 for a family of four.

^{‡ &}quot;Other" includes children in any other racial or ethnic group or in more than one group.

UNITED STATES:

Gaps in Infant Mortality

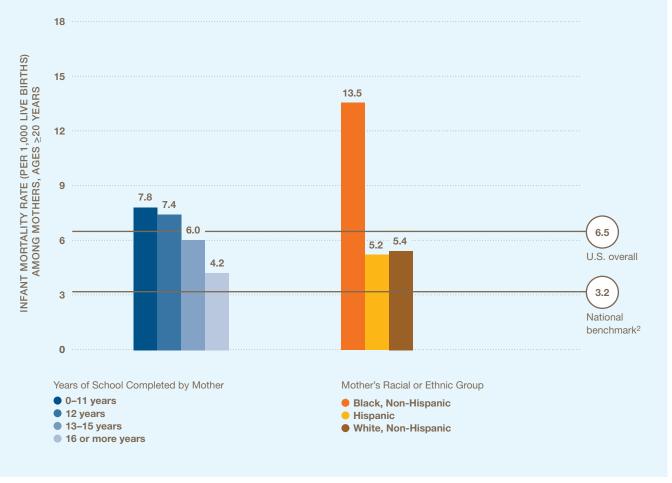
Infant mortality rates¹—a key indicator of overall health—vary by mother's education and racial or ethnic group nationally.

• Compared with babies born to the most-educated mothers, babies born to mothers with less education are more likely to die before reaching their first birthdays. While infant mortality rates are highest among babies born to mothers with 12 or fewer years of education, the rate for babies born to mothers with 13–15 years of schooling is approximately

40 percent higher than that for babies born to mothers with 16 or more years of schooling.

• The infant mortality rate among babies born to non-Hispanic black mothers is 2.5 times the rates seen among babies of non-Hispanic white or Hispanic mothers.

Comparing these rates against the national benchmark² for infant mortality reveals unrealized health potential among babies across maternal education and racial or ethnic groups. Infants in every group could do better.



Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2000-2002 Period Linked Birth/Infant Death Data Set.

¹ The number of deaths in the first year of life per 1,000 live births.

² The national benchmark for infant mortality represents the level of mortality that should be attainable for all infants in every state. The benchmark used here—3.2 deaths per 1,000 live births, seen in New Jersey and Washington state—is the lowest statistically-reliable rate among babies born to the most-educated mothers in any state.

Rates for groups including at least 20 infant deaths were considered to be statistically reliable.

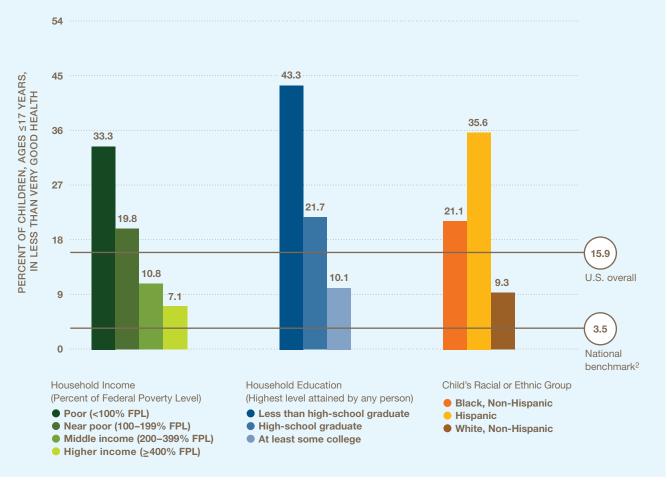
UNITED STATES:

Gaps in Children's General Health Status

In the United States overall, children's general health status¹ varies by family income and education and by racial or ethnic group. Children in the least-advantaged groups typically experience the worst health, but even children in middle-class families are less healthy than those with greater advantages.

- Compared with children in higher-income families, children in poor, near-poor or middle-income families were 4.7, 2.8 and 1.5 times as likely to be in less than optimal health.
- Compared with children living with someone who has completed some college, children in households without a high-school graduate were more than four times as likely—and those in households with a high-school graduate twice as likely—to be in less than optimal health.
- Non-Hispanic white children fare better than those who are non-Hispanic black or Hispanic.

Comparing these rates against the national benchmark² for children's general health status reveals unrealized health potential among children across income, education and racial or ethnic groups.



¹ Based on parental assessment and measured as poor, fair, good, very good or excellent. Health reported as less than very good was considered to be less than optimal.

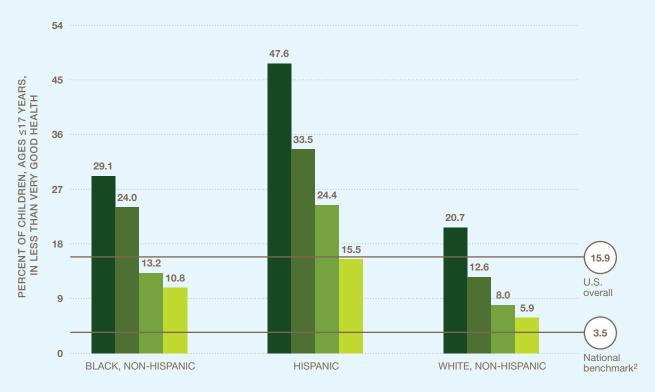
² The national benchmark for children's general health status represents the level of health that should be attainable for all children in every state. The benchmark used here—3.5 percent of children with health that was less than optimal, seen in Colorado—is the lowest statistically-reliable rate observed in any state among children whose families were not only higher income but also practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly). Rates with relative standard errors of 30 percent or less were considered to be statistically reliable.

Income Is Linked With Health Regardless of Racial or Ethnic Group

Gaps in children's health by income do not simply reflect differences by race or ethnicity; nor do they simply reflect differences between the rich and the poor. Both income and racial or ethnic group matter.

- Within each racial or ethnic group, a steep income gradient is evident. Children's general health status¹ improves as family income increases. Among non-Hispanic whites, for example, children in poor, near-poor or middle-income households were 3.5, 2.1 and 1.4 times as likely to be in less than very good health as children in higher-income households.
- At each level of income, non-Hispanic black and Hispanic children fared worse than non-Hispanic whites.

The extent of unrealized health potential is even greater when considering the level of children's health that should be attainable. At every income level in every racial or ethnic group, the percentage of children in less than optimal health was higher than the national benchmark² for children's general health status.



Household Income (Percent of Federal Poverty Level)

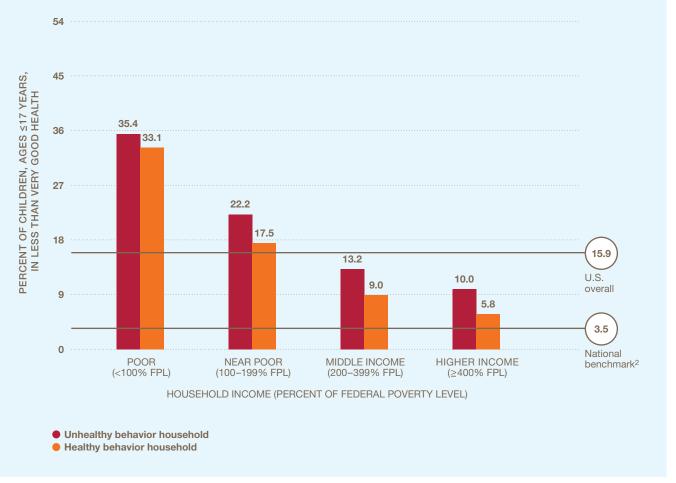
- Poor (<100% FPL)
- Near poor (100–199% FPL)
- Middle income (200–399% FPL)
- Higher income (≥400% FPL)

- 1 Based on parental assessment and measured as poor, fair, good, very good or excellent. Health reported as less than very good was considered to be less than optimal.
- 2 The national benchmark for children's general health status represents the level of health that should be attainable for all children in every state. The benchmark used here—3.5 percent of children with health that was less than optimal, seen in Colorado—is the lowest statistically-reliable rate observed in any state among children whose families were not only higher income but also practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly). Rates with relative standard errors of 30 percent or less were considered to be statistically reliable.

Health-Related Behaviors and Income Matter for Children's Health

Differences in children's general health status¹ occur not only across social groups but also depending on health-related behaviors in families. At every income level, children living in families where no one exercises regularly or someone smokes are more likely to be in less than optimal health than children in families with healthier behaviors.

The national benchmark for children's general health status reflects the best (in this case, lowest) statistically-reliable rate of less than optimal health observed in any state among children whose families were both higher income and practiced healthy behaviors. This benchmark—3.5 percent of children with less than optimal health, seen in Colorado—reflects a level of good health that should be attainable for all children nationally and in every state.



¹ Based on parental assessment and measured as poor, fair, good, very good or excellent. Health reported as less than very good was considered to be less than optimal.

² The national benchmark for children's general health status represents the level of health that should be attainable for all children in every state. The benchmark used here—3.5 percent of children with health that was less than optimal, seen in Colorado—is the lowest statistically-reliable rate observed in any state among children whose families were not only higher income but also practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly). Rates with relative standard errors of 30 percent or less were considered to be statistically reliable.

Gaps in Infant Mortality Rates by Mother's Education: How Do States Compare?

Differences in infant mortality rates¹ by mother's education are similar at the state level to those seen nationwide. In almost every state, differences in infant mortality are seen between babies born to the mosteducated mothers (who are least likely to die in the first year of life) and babies born to mothers with less education. Rates of infant mortality are highest among babies born to mothers with less than 12 years of schooling, but rates among babies born to mothers

with 12 years or 13–15 years of schooling are also typically higher than rates among babies whose mothers had 16 or more years of schooling. Comparing states based on the size of the gaps² between the infant mortality rate for the state as a whole and that among babies born to the most-educated mothers tells us that there is unrealized health potential among babies not just at the national level but in every state as well.

Infant Mortality Rate (per 1,000 Live Births) by Years Percentage of Population That of Schooling Completed by Mother Week Filthurated Totality Gap? icentage of Population That Mumber of Babi Alabama 51,730 9.7 6.4 2.4 8.8 11.1 7.9 30 Alaska 3.4‡ 8,862 6.4 11.1 7.6 3.4 3.0† 79.9 49 Arizona 74,349 6.5 6.9 7.5 5.7 4.6 1.8 14 Arkansas 10.0 8.6 2.6 34 31,287 7.8 7.2 5.2 California 475,993 5.2 5.5 5.5 5.1 3.7 74.0 1.5 9 Colorado 59,523 7.1 6.3 5.8 3.3 65.4 23 Connecticut 39.413 59 8.1 7.6 5.7 3.9 18 Delaware 9,669 9.2 11.6 7.7 5.9 48 **District of Columbia** 6,575 11.0 14.3 11.7 8.8 3.7 62.0 51 Florida 7.3 180,492 6.7 8.7 5.8 4.1 74.2 2.6 34 Georgia 115.607 8.1 9.0 9.6 7.2 4.9 46 Hawaii 15,681 6.7 8.8 6.6 7.1 5.4 74.0 1.4 Idaho 18,446 6.5 9.6 6.6 5.3 5.0 6 Illinois 163,328 7.4 8.3 8.4 7.6 5.1 23 Indiana 9.7 8.1 Iowa 4.8 34,193 5.5 9.6 5.9 4.2 5 Kansas 8.6 8.8 34,764 6.5 5.2 4.5 18 Kentucky 6.2 9.8 6.6 5.7 3.9 76.0 2.4 30 Louisiana 14.1 9.7 8.0 55,230 9.3 6.3 43 Maine 12,425 4.8 5.0† 6.7 3.3 4.0 68.0 8.0

Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2000-2002 Period Linked Birth/Infant Death Data Set.

¹ The number of deaths during the first year of life per 1,000 live births.

² Defined as the size of improvement in the state's overall rate if all infants experienced the infant mortality rate of infants whose mothers had completed 16 or more years of schooling.

³ Number of babies born alive to mothers ages 20 years or older; this number represents a yearly average for 2000-2002.

Infant Mortality Rate (per 1,000 Live Births) by Years Percentage of Propulation That of Schooling Completed by Mother Overall Mant Mortality Rate Week Furnitated Wortality Cap? 16 of More Years Overall ated Ranking on Size of Interit Number of Elabes 13-15 Years 12 Years Maryland 66.626 7.4 9.3 8.8 6.7 5.3 58.1 20 Massachusetts 76,054 4.6 5.9 5.9 4.7 3.4 2 Michigan 119,692 7.6 11.0 8.2 7.1 4.7 69.9 2.8 38 4.3 3.7 Minnesota 62,382 5.1 7.4 6.5 6 Mississippi 34,973 9.9 12.4 10.9 8.9 6.8 45 Missouri 66,265 7.1 10.7 8.2 6.8 4.2 2.9 40 9.719 6.6 6.9 6.6 5.1 9 Montana 8.4 Nebraska 22,501 6.5 7.8 8.4 6.1 5.0 66.7 1.6 12 Nevada 27,802 5.8 6.2 6.1 5.3 80.2 27 13,635 4.7 4.6^{\dagger} 6.1 4.6 3.5 2 **New Hampshire New Jersey** 107,543 5.8 7.8 6.8 5.4 3.2 2.6 34 **New Mexico** 22,722 6.1 5.3 6.9 5.9 3.8 27 234,672 5.8 6.8 2.1 20 **New York** 6.8 **North Carolina** 103,827 8.0 9.7 9.3 7.8 5.6 71.8 32 **North Dakota** 7,005 7.5 17.2 9.0 6.5 5.4 64.9 23 Ohio 134,592 7.3 11.0 8.3 6.4 4.4 2.8 38 Oklahoma 42.447 7.6 9.2 8.8 6.6 4.7 2.9 40 Oregon 40,603 5.2 6.2 6.0 4.5 3.8 9 Pennsylvania 130,384 6.8 7.4 40 Rhode Island 11.454 6.8 5.4 4.4 16 6.3 South Carolina 47,431 8.5 11.6 9.2 7.8 5.3 46 South Dakota 9,347 6.3 9.2 7.1 6.7 4.0 27 9.8 4.9 67.404 8.6 11.7 8.0 50 Tennessee 312,957 5.5 5.6 6.0 5.1 3.9 13 **Texas** Utah 44,263 5.1 7.8 5.5 4.6 4.0 2 5,889 8.4† 7.1 3.61 3.4 1.8 14 Vermont 5.2 Virginia 89,630 6.9 10.3 8.3 6.7 4.2 37 Washington 72,219 5.2 6.8 5.4 4.3 3.2 65.8 20 West Virginia 17,924 7.4 11.3 7.2 6.7 4.4 43 Wisconsin 62,161 6.4 7.6 5.6 3.9 67.5 32

5,491

3,580,884

Wyoming

United States

8.5†

7.8

5.8

6.5

4.8

6.0

4.0†

4.2

76.7

70.6

1.9[‡]

7.3

7.4

16

⁴ The percent of babies whose mothers had completed fewer than 16 years of schooling.

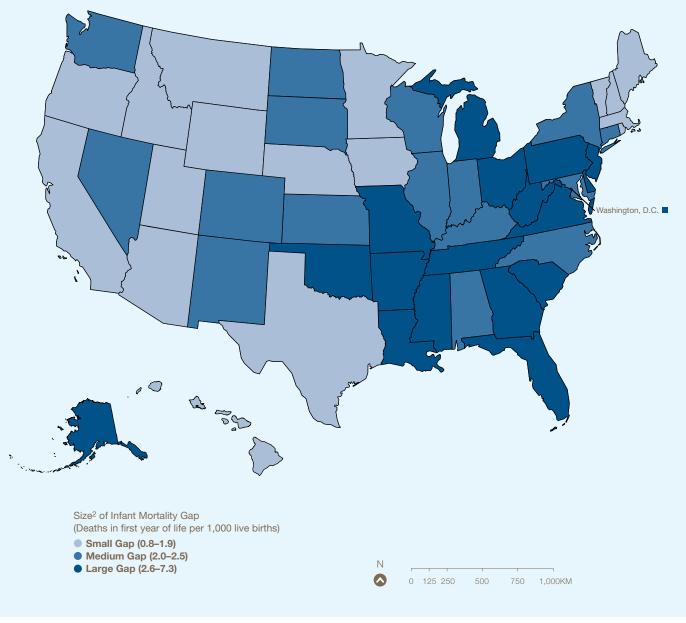
⁵ Ranked by size of gap, from smallest to largest; states with the same size gap were assigned the same ranking.

[†] This estimate of infant mortality is based on fewer than 20 deaths and hence may be statistically unreliable.

[‡] Fewer than 20 infant deaths occurred among babies born to mothers with 16 years or more of education in this state; thus, the estimate of the size of the infant mortality gap by mother's education is considered statistically unreliable.

Gaps in Infant Mortality Rates by Mother's Education: How Do States Compare?

In almost every state, rates of infant mortality among babies born to mothers ages 20 years or older were lowest for those whose mothers had the most education and increased as the level of maternal education decreased. Although the size of the state-level gap¹ in infant mortality by mother's education varies markedly across the United States, there is unrealized health potential among babies in every state.



Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2000–2002 Period Linked Birth/Infant Death Data Set.

¹ Defined as the size of improvement in the state's overall rate if all infants experienced the infant mortality rates of infants whose mothers had completed 16 or more years of schooling.

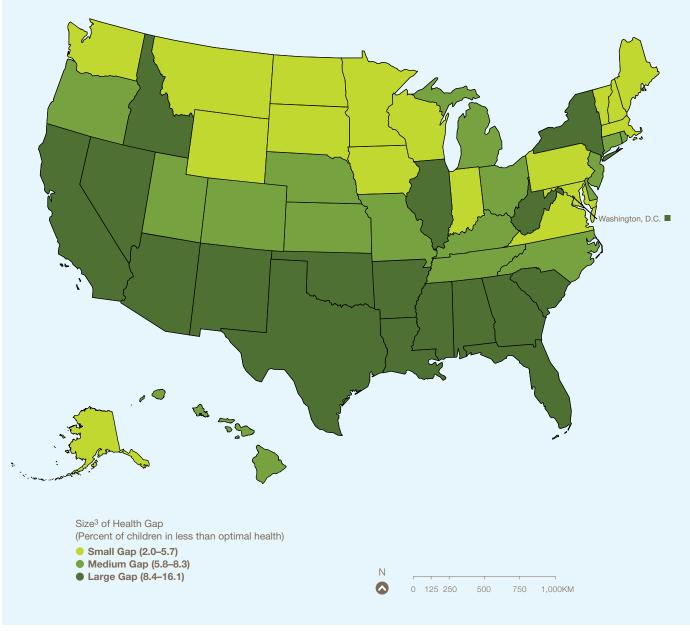
² States were grouped into three approximately equal groups based on the size of the gaps in infant mortality rates by mother's education.

Note: Because fewer than 20 infant deaths occurred among babies born to mothers with 16 years or more of education in Alaska and Wyoming, estimates of the infant mortality gap by mother's education in these states are considered statistically unreliable.

Gaps in Children's General Health Status by Family Income: How Do States Compare?

In almost every state, the percent of children ages 17 years or younger in less than optimal health was lowest among children in higher-income families and increased as family income decreased.

Although the size of the state-level gap² in children's general health status by family income varies markedly, there is unrealized health potential among children in every state.



- 1 Assessed by their parents to be in less than very good or excellent health.
- 2 Defined as the size of the improvement in the state's overall rate if all children had the level of health experienced by children in higher-income families.
- 3 States were grouped into three approximately equal groups based on the size of the gaps in children's general health status by family income.

Gaps in Children's General Health Status by Family Income: How Do States Compare?

Differences in children's general health status¹ by family income are similar at the state level to those seen among children nationally. In almost every state, children in higher-income families experience better health than all other children in families with lower incomes. Compared with children in higher-income families, children in poor families experience

particularly marked shortfalls, but with few exceptions even those in middle-income families appear less healthy than those at the top. Comparing states based on the size of the gaps² in children's general health status by income tells us that there is unrealized health potential among children not just at the national level but in every state as well.

| | | | | | Percent of Children in Less Than Optimal Health by Household Income (Percent of Federal Poverty Level) | | | | | |
|----------------------|-----------|--------------------|--------------------------|-----------|--|-----------------|---------------|--|-----------------|---------|
| | Aumber of | Overall Processing | ate of less than poor to | Dolo FPL) | or to 1990 FRL | come ggolo rell | cent of Feder | de frontated to football the first to football the footba | Ranking Ranking | on Sire |
| Alabama | 1,102,924 | 16.9 | 33.2 | 18.4 | 11.3 | 5.4 | 80.9 | 11.6 | 48 | |
| Alaska | 188,133 | 11.9 | 23.7 | 9.5 | 9.4 | 6.7 | 83.4 | 5.2 | 12 | |
| Arizona | 1,512,175 | 19.3 | 38.8 | 23.2 | 11.2 | 6.3 | 78.7 | 13.0 | 49 | |
| Arkansas | 678,604 | 17.9 | 31.9 | 19.2 | 9.1 | 9.5 | 83.3 | 8.4 | 34 | |
| California | 9,378,237 | 22.5 | 41.0 | 27.9 | 16.5 | 9.1 | 71.2 | 13.4 | 50 | |
| Colorado | 1,147,831 | 13.4 | 38.0 | 17.6 | 9.6 | 5.1 | 67.1 | 8.3 | 33 | |
| Connecticut | 832,105 | 12.7 | 29.7 | 20.4 | 11.7 | 6.9 | 57.0 | 5.8 | 18 | |
| Delaware | 198,401 | 14.8 | 30.7 | 20.5 | 11.0 | 7.5 | 69.1 | 7.3 | 26 | |
| District of Columbia | 107,436 | 17.4 | 27.8 | 20.4 | 13.0 | 6.4 | 75.9 | 11.0 | 45 | |
| Florida | 3,907,632 | 13.9 | 28.3 | 17.0 | 9.3 | 5.0 | 75.5 | 8.8 | 39 | |
| Georgia | 2,287,060 | 14.6 | 26.0 | 22.1 | 8.9 | 5.7 | 73.8 | 8.9 | 41 | |
| Hawaii | 295,749 | 13.3 | 26.5 | 16.0 | 8.6 | 6.8 | 79.4 | 6.5 | 22 | |
| Idaho | 370,187 | 12.9 | 25.1 | 17.1 | 8.6 | 4.5 | 82.2 | 8.4 | 34 | |
| Illinois | 3,219,265 | 16.7 | 34.6 | 21.9 | 11.7 | 8.3 | 70.5 | 8.4 | 34 | |
| Indiana | 1,596,856 | 12.5 | 26.9 | 15.9 | 8.9 | 6.7 | 76.1 | 5.7 | 17 | |
| lowa | 689,306 | 11.8 | 25.1 | 15.2 | 8.9 | 7.1 | 77.1 | 4.8 | 10 | |
| Kansas | 692,666 | 13.7 | 35.3 | 15.4 | 8.5 | 7.6 | 77.4 | 6.1 | 20 | |
| Kentucky | 989,559 | 13.1 | 26.8 | 12.9 | 9.7 | 5.3 | 79.2 | 7.8 | 29 | |
| Louisiana | 1,172,477 | 17.8 | 30.4 | 18.5 | 12.0 | 6.7 | 80.9 | 11.1 | 46 | |
| Maine | 285,070 | 9.1 | 18.5 | 11.5 | 7.1 | 4.8 | 77.9 | 4.3 | 7 | |

¹ Based on parental assessment and measured as poor, fair, good, very good or excellent.

² Defined as the size of the improvement in the state's overall rate if all children had the level of health experienced by children in higher-income families.

| | | Percent of Children in Less Than Optimal Health by Household Income (Percent of Federal Poverty Level) | | | | | | | | |
|----------------|-----------|--|---------------------|-----------|----------------|----------|---------------|--|------------------------------|--------|
| | urber (| Orlegal K | tal Health' Poor 10 | Solo FPL) | or to 1990 FPL | rigle th | Cont of Feder | ge of Population de Mere Elimin de Norte Elimin GER Size of H | rnat Rankingo Rankingo | n Size |
| | Mr. Age | On Obr. | P00(210 | Mes. 400 | Wic 50c | HigOne | Le. Mos | Gar Silv | Ka of k. | |
| Maryland | 1,373,206 | 12.2 | 27.3 | 17.2 | 9.6 | 8.5 | 59.5 | 3.6 | 2 | |
| Massachusetts | 1,480,745 | 11.3 | 28.4 | 19.7 | 8.3 | 5.7 | 59.7 | 5.6 | 16 | |
| Michigan | 2,527,842 | 15.0 | 34.1 | 19.6 | 10.8 | 7.8 | 72.1 | 7.3 | 26 | |
| Minnesota | 1,244,232 | 9.6 | 16.7 | 15.5 | 8.0 | 5.8 | 67.9 | 3.8 | 4 | |
| Mississippi | 757,175 | 19.3 | 29.5 | 21.1 | 11.4 | 8.5 | 85.6 | 10.9 | 44 | |
| Missouri | 1,401,584 | 12.1 | 21.2 | 14.5 | 11.1 | 5.4 | 76.5 | 6.8 | 25 | |
| Montana | 214,360 | 9.9 | 17.3 | 10.6 | 7.9 | 4.8 | 84.5 | 5.1 | 11 | |
| Nebraska | 438,253 | 13.6 | 29.0 | 19.6 | 8.4 | 7.0 | 78.6 | 6.5 | 22 | |
| Nevada | 579,030 | 20.4 | 43.5 | 23.5 | 14.0 | 9.2 | 76.0 | 11.2 | 47 | |
| New Hampshire | 305,116 | 8.3 | 13.3 | 11.5 | 7.6 | 6.4 | 64.9 | 2.0 | 1 | |
| New Jersey | 2,125,387 | 15.6 | 37.9 | 26.1 | 12.5 | 8.0 | 56.6 | 7.6 | 28 | |
| New Mexico | 499,905 | 18.1 | 30.7 | 17.9 | 12.7 | 9.1 | 83.5 | 9.0 | 42 | |
| New York | 4,498,836 | 16.8 | 37.7 | 19.6 | 10.9 | 8.3 | 71.7 | 8.5 | 38 | |
| North Carolina | 2,080,668 | 14.6 | 26.9 | 17.0 | 11.0 | 6.5 | 75.8 | 8.1 | 32 | |
| North Dakota | 146,143 | 9.2 | 15.5 | 10.4 | 8.7 | 5.4 | 80.6 | 3.8 | 4 | |
| Ohio | 2,807,666 | 11.1 | 24.1 | 14.5 | 7.4 | 5.0 | 75.9 | 6.1 | 20 | |
| Oklahoma | 874,700 | 13.7 | 25.7 | 14.3 | 9.3 | 5.3 | 82.8 | 8.4 | 34 | |
| Oregon | 845,439 | 13.3 | 28.8 | 16.9 | 9.7 | 5.5 | 75.9 | 7.8 | 29 | |
| Pennsylvania | 2,815,445 | 12.6 | 30.4 | 18.0 | 7.4 | 7.1 | 74.5 | 5.5 | 15 | |
| Rhode Island | 242,626 | 13.2 | 34.5 | 16.1 | 9.0 | 5.4 | 71.0 | 7.8 | 29 | |
| South Carolina | 1,018,081 | 17.4 | 30.4 | 21.3 | 11.7 | 8.2 | 79.0 | 9.2 | 43 | |
| South Dakota | 192,623 | 11.0 | 17.7 | 14.5 | 8.6 | 5.6 | 82.6 | 5.4 | 13 | |
| Tennessee | 1,388,714 | 14.6 | 25.6 | 16.3 | 11.2 | 7.9 | 78.1 | 6.7 | 24 | |
| Texas | 6,213,401 | 22.8 | 44.1 | 26.3 | 13.7 | 6.7 | 76.9 | 16.1 | 51 | |
| Utah | 738,594 | 10.7 | 22.3 | 13.3 | 8.2 | 4.8 | 80.7 | 5.9 | 19 | |
| Vermont | 137,011 | 6.9 | 15.6 | 10.2 | 5.9 | 2.4 | 73.8 | 4.5 | 9 | |
| Virginia | 1,792,362 | 9.9 | 14.6 | 17.4 | 7.7 | 6.2 | 66.1 | 3.7 | 3 | |
| Washington | 1,490,659 | 12.6 | 30.4 | 11.7 | 9.7 | 8.1 | 70.1 | 4.4 | 8 | |
| West Virginia | 389,291 | 15.8 | 25.8 | 17.5 | 10.8 | 7.0 | 85.4 | 8.8 | 39 | |
| Wisconsin | 1,327,839 | 11.7 | 30.2 | 13.8 | 8.2 | 6.3 | 74.1 | 5.4 | 13 | |
| Wyoming | 120,356 | 10.9 | 29.1 | 13.2 | 5.7 | 7.0 | 79.7 | 3.9 | 6 | |
| | | | | | | | | | | |

15.9

United States

72,718,963

33.3

19.8

10.8

7.1

73.4

8.8

³ The percent of children who live in families with incomes below 400 percent of the Federal Poverty Level.

⁴ Ranked by size of gap, from smallest to largest; states with the same size gap were assigned the same ranking.

A State Snapshot: North Carolina

Snapshots of all states can be found at www.commissiononhealth.org/statedata

Unrealized Health Potential:

A Snapshot of North Carolina



UNREALIZED HEALTH POTENTIAL AMONG CHILDREN

Based on two important indicators of health, infant mortality and children's general health status, children in North Carolina are not as healthy as they could be. The levels of health for most North Carolina children fall short of levels for children in the most-advantaged subgroups in the state and across the country. This snapshot describes these gaps as well as the social factors that are linked with these differences in health.

INFANT MORTALITY

North Carolina ranks 32nd among states based on the size of the gap in infant mortality by mother's education, when comparing the current overall state rate of 8.0 deaths per 1,000 live births with the lower rate—5.6 deaths per 1,000 live births—seen among infants born to the state's most-educated mothers. Even if North Carolina achieved this lower rate overall, infant mortality in the state would still exceed the *national benchmark* of 3.2 deaths per 1,000 live births—the lowest infant mortality rate seen in any state among babies born to mothers with 16 or more years of schooling. In North Carolina, infant mortality rates in every maternal education and racial or ethnic group did not meet the national benchmark.

CHILDREN'S GENERAL HEALTH STATUS

North Carolina ranks 32nd among states based on the size of the gap in children's general health status by family income, when comparing the current overall rate of 14.6 percent of children in less than optimal health with the lower rate—6.5 percent—seen among children in higher-income families. Even if North Carolina achieved this lower rate overall, the state's rate would still exceed the *national benchmark* for children's general health status of 3.5 percent—the lowest rate of less than optimal health seen in any state among children in families that both were higher income and practiced healthy behaviors. In North Carolina, the general health status of children in every income, education and racial or ethnic group did not meet the national benchmark.

SOCIAL FACTORS AFFECTING CHILDREN'S HEALTH

Social factors such as income, education and racial or ethnic group can greatly affect a child's health. This snapshot describes these factors and how they are linked with infant mortality and children's general health status in the state.

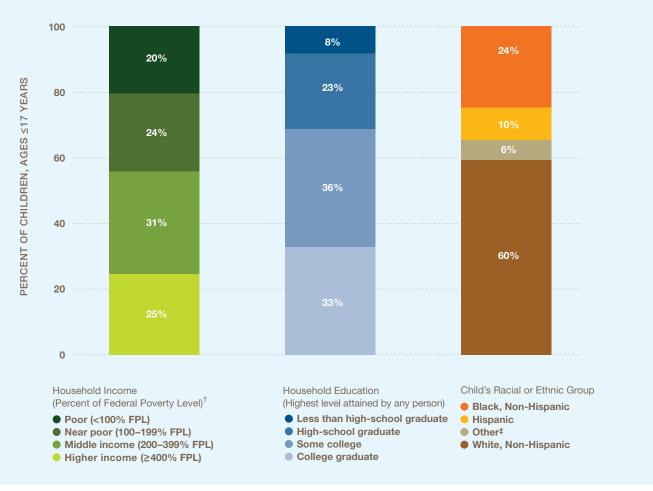


NORTH CAROLINA:

Social Factors Affecting Children's Health

Health during childhood is powerfully linked with social factors such as the income and education levels of a child's family and his or her racial or ethnic group. This snapshot of children ages 17 years or younger in North Carolina shows that:

- Approximately two fifths of North Carolina's children live in poor or near-poor households, one third live in middle-income households and one fourth live in higher-income households.
- Approximately one third of children in North Carolina live in households where no one has education beyond high school, one third live with at least one person who has attended but not completed college and one third live with at least one college graduate.
- Three fifths of North Carolina's children are non-Hispanic white, 24 percent are non-Hispanic black and 10 percent are Hispanic.



Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2006 American Community Survey (for data on income and racial or ethnic group); 2005-2007 Current Population Survey (for education data).

[†] Guidelines set by the U.S. government for the amount of income providing a bare minimum of food, clothing, transportation, shelter and other necessities. In 2006, the U.S. FPL was \$16,079 for a family of three and \$20,614 for a family of four.

^{‡ &}quot;Other" includes children in any other racial or ethnic group or in more than one group.

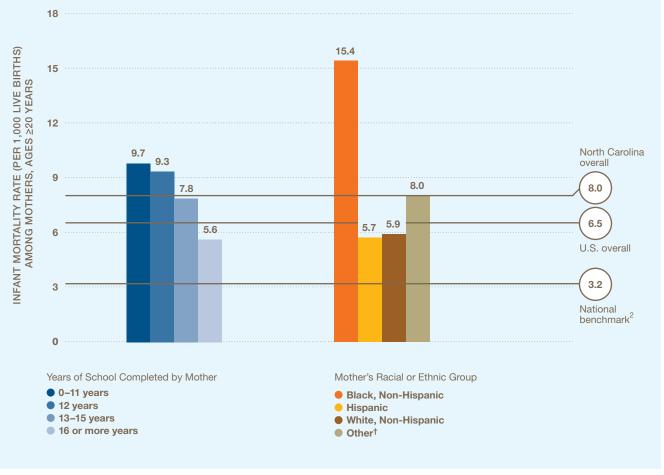
NORTH CAROLINA:

Gaps in Infant Mortality

Infant mortality rates¹—a key indicator of overall health—vary by mother's education and racial or ethnic group in North Carolina.

- Compared with babies born to the most-educated mothers, babies born to mothers with less education are more likely to die before reaching their first birthdays. While the infant mortality rate is highest among babies born to mothers with less than 12 years of education, the rate for babies born to mothers with 13 to 15 years of schooling is 40 percent higher than the rate for babies born to more-educated mothers.
- The infant mortality rate among babies born to non-Hispanic black mothers is approximately
 2.5 times the rates seen among babies of non-Hispanic white or Hispanic mothers.

Comparing North Carolina's experience against the national benchmark² for infant mortality reveals unrealized health potential among North Carolina babies across maternal education and racial or ethnic groups. Infants in every group could do better.



Prepared for the RWJF Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco. Source: 2000-2002 Period Linked Birth/Infant Death Data Set.

- 1 The number of deaths in the first year of life per 1,000 live births.
- 2 The national benchmark for infant mortality represents the level of mortality that should be attainable for all infants in every state. The benchmark used here —3.2 deaths per 1,000 live births, seen in New Jersey and Washington state—is the lowest statistically-reliable rate among babies born to the most-educated mothers in any state.
- † Defined as any other or unknown racial or ethnic group, including any group representing fewer than 3 percent of all infants born in the state during 2000-2002.

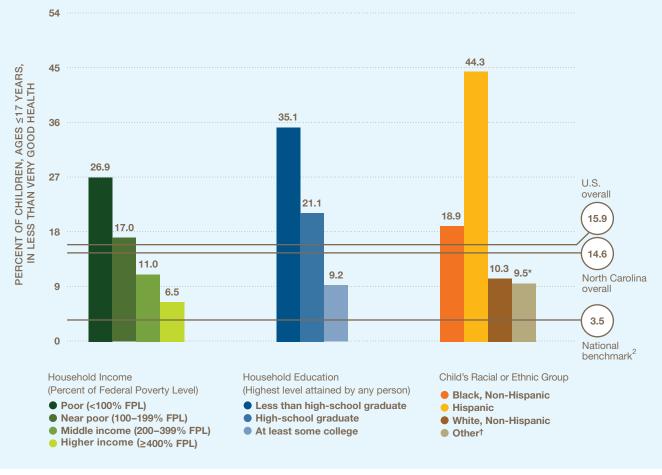
NORTH CAROLINA:

Gaps in Children's General Health Status

Within North Carolina, children's general health status¹ varies by family income and education and by racial or ethnic group. Children in the least-advantaged groups typically experience the worst health, but even children in middle-class families appear to be less healthy than those with greater advantages.

- Children in poor families are four times as likely and children in near-poor families are approximately
 2.5 times as likely to be in less than optimal health as children in higher-income families.
- Children in households without a high-school graduate are nearly four times as likely to be in less than optimal health as children living with an adult who has completed some college.
- Hispanic children are more than four times as likely and non-Hispanic black children are nearly twice as likely to be in less than optimal health as non-Hispanic white children.

Comparing North Carolina's experience against the national benchmark² reveals unrealized health potential among North Carolina children in every income, education and racial or ethnic group.



- 1 Based on parental assessment and measured as poor, fair, good, very good or excellent. Health reported as less than very good was considered to be less than optimal.
- 2 The national benchmark for children's general health status represents the level of health that should be attainable for all children in every state. The benchmark used here—3.5 percent of children with health that was less than very good, seen in Colorado—is the lowest statistically-reliable rate observed in any state among children whose families not only were higher-income but also practiced healthy behaviors (i.e., non-smokers and at least one person who exercised regularly).
- Rate has a relative standard error greater than 30 percent and is considered statistically unreliable.
- † Defined as any other or more than one racial or ethnic group, including any group with fewer than 3 percent of children in the state in 2003.



The Robert Wood Johnson Foundation Commission to Build a Healthier America is a national, independent, non-partisan group of leaders tasked with seeking ways to improve the health of all Americans. Launched in February 2008, the Commission is investigating how factors outside the health care system—such as income, education and environment—shape and affect opportunities to live healthy lives. The Commission, which is co-chaired by former senior White House advisors Mark McClellan and Alice Rivlin, expects to issue a full set of recommendations in April 2009. For more information about the Commission and its activities, please visit:

www.commissiononhealth.org

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