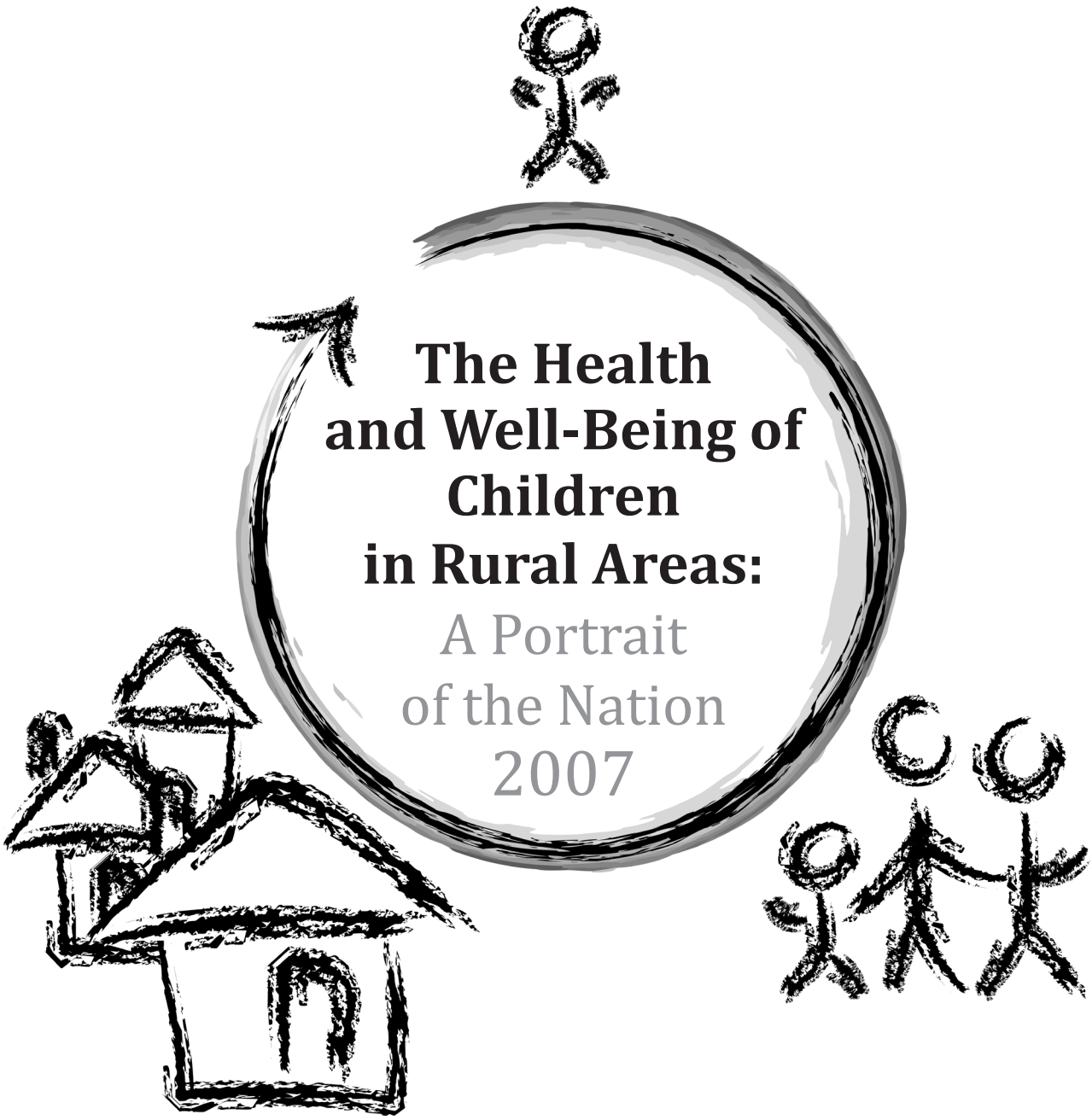

The Health and Well-Being of Children in Rural Areas:

A Portrait of the Nation 2007

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The publication is also available online at www.mchb.hrsa.gov and www.cdc/nchs/slaits.htm

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Introduction

Children in rural areas face particular risks to their health and well-being. Rural children are more likely to live in poor families,[1] are more vulnerable to death from injuries,[2] and are more likely to use tobacco than their counterparts in urban areas.[3] Rural families also face particular challenges in gaining access to health care, as they often have to travel greater distances to use health services.[4] In 2010, of the 2,052 non-metropolitan (including rural and frontier) counties in the United States, 704 were designated as Health Professional Shortage Areas (HPSAs) for primary care, 467 were considered HPSAs for dental care, and 521 were designated as HPSAs for mental health services. In addition, 1,505 entire counties were considered Medically Underserved Areas by the Federal Government.[5]

Discrepancies in health status and health risks may be attributable both to children's geographic location as well as to the demographic characteristics of the children and families who live in rural areas. Where these differences do exist, they can give program planners and policymakers important information with which to target services and interventions.

The National Survey of Children's Health (NSCH) provides a unique resource with which to analyze the health status, health care use, activities, and family and community environments experienced by children in rural and urban areas. The NSCH was designed to measure the health and well-being of children from birth through age 17 in the United States while taking into account the environments in which they grow and develop. Conducted for the second time in 2007, the survey collected information from parents on their children's health, including oral, physical, and mental health, health care use and insurance status, and social activities and well-being. Aspects of the child's environment that were assessed in the survey include family structure, poverty level, parental health and well-being, and community surroundings. The survey was supported and developed by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB) and was conducted by the Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS).

How Locations Were Defined

Children were classified as residing in an urban area, a large rural area, or a small or isolated rural area, based on their ZIP code, the size of the city or town, and the commuting pattern in the area. Urban areas include metropolitan areas and surrounding towns from which commuters flow into an urban area, including suburban and less densely populated areas. Large rural areas include large towns ("micropolitan" areas) with populations of 10,000 to 49,999 persons and their surrounding areas. Small or isolated rural areas include small towns with populations of 2,500 to 9,999 persons and their surrounding areas.[6] Thus, it is important to recognize that the geographic categories used here describe the location's commuting pattern and proximity to a city or large town, not necessarily the population density of the child's home town.

The map on page 6 shows how these three types of areas are distributed across the United States. Of the 73.7 million children in the U.S., 60.2 million live in urban areas, 6.7 million live in large rural areas, and 6.8 million live in small or isolated rural areas.

Findings of the Survey

Urban and rural children differ in their demographic characteristics, which, in combination with geographic factors, can affect their health status and health risks. Children in rural areas are more likely to be poor than those in urban areas. Of those who live in small or isolated rural areas, 23.3 percent have household incomes below the Federal poverty level (FPL), as do 23.7 percent of children in large rural areas. Of children living in urban areas, 17.4 percent have household incomes below the FPL. Rural children are also more likely to be non-Hispanic White. Among children in urban areas, just over half (53.0 percent) are White, compared to two-thirds (67.1 percent) of those in large rural areas and nearly three-quarters (73.8 percent) of those in small rural towns.

Children's overall health status does not vary substantially by location; approximately 84 percent of children are reported by their parents to be in excellent or very good health, regardless of where they live. (This percentage was slightly

lower, about 80 percent, among older children in rural areas.) While not quite as good as physical well-being, children's oral health was equally consistent across locations; the percentage of children reported to have excellent or very good oral health ranged from 69.0 to 71.1 percent.

Children living in large rural areas are slightly more likely than those in small rural or urban areas to have chronic conditions, including physical conditions and emotional, behavioral, and developmental conditions. Nearly one-quarter (24.9 percent) of children in large rural areas had at least one of 16 chronic conditions asked about in the survey, compared to approximately 22 percent of children in other locations. Thirteen percent of children in large rural areas were reported to have at least one of 7 emotional, behavioral, or developmental conditions (attention deficit disorder/attention deficit hyperactivity disorder [ADD/ADHD], anxiety, autism spectrum disorder, depression, developmental delay, oppositional defiant disorder [ODD] or conduct disorder, or Tourette Syndrome), compared to 11.1 percent of children in large rural or urban areas.

Across locations, approximately 90 percent of children currently have health insurance. Children living in rural areas are more likely to have public insurance, such as Medicaid or CHIP, and urban children are more likely to be privately insured. Some children have insurance that does not fully meet their needs, because it doesn't cover the services a child needs, allow access to needed providers, or it requires burdensome out-of-pocket payments. Older children (ages 12-17) in small rural areas were the most likely to have insurance that was not adequate (30.1 percent).

Rural children face specific health risks. For example, children from birth through age 5 in rural areas are less likely than urban children ever to be fed breast milk: 77.0 percent of urban children were ever breastfed, compared to 67.6 percent of children in large rural areas and 69.8 percent of those in small rural communities. Children living in rural areas are also more likely than urban children to be overweight or obese. More than one-third of rural children aged 10-17 met the criteria for overweight or obesity (having a BMI at or above the 85th percentile for their age and sex)—34.6 percent of children in large rural areas and 35.2 percent of those in small rural areas—compared to 30.9 percent of urban children. In addition, children in rural areas are more likely than urban children to live with someone who smokes. One-third (33.1 percent) of children in large rural areas and 35.0 percent of those in small rural areas lived with a smoker, compared to 24.4 percent of urban children.

Children in rural areas experience other risks to their educational and social well-being as well. Children in rural areas are more likely to repeat a grade in school; 12.6 percent of school-aged children in large rural areas and 13.5 percent in small rural areas (including 17.4 percent of boys) have repeated a grade, compared to 10.0 percent of urban children. Rural children are also more likely to spend more than an hour each weekday watching television or videos: 60.9 percent of children in large rural areas did so, compared to 53.0 percent of children in small rural areas and 53.9 percent of urban children.

In other cases, rural children—especially those living in small rural areas—appear to be well protected on measures of connectedness to their families and communities. The percentage of children who shared a meal with their families every day in the past week was highest in small rural areas, where 50.7 percent of children did so, and parents of children in small rural areas were the least likely to report usually or always feeling parenting stress. The percentage of children who attend religious services once a week or more is highest in small rural areas (57.5 percent). Children in small rural areas are also the most likely to participate in physical activity every day (34.7 percent).

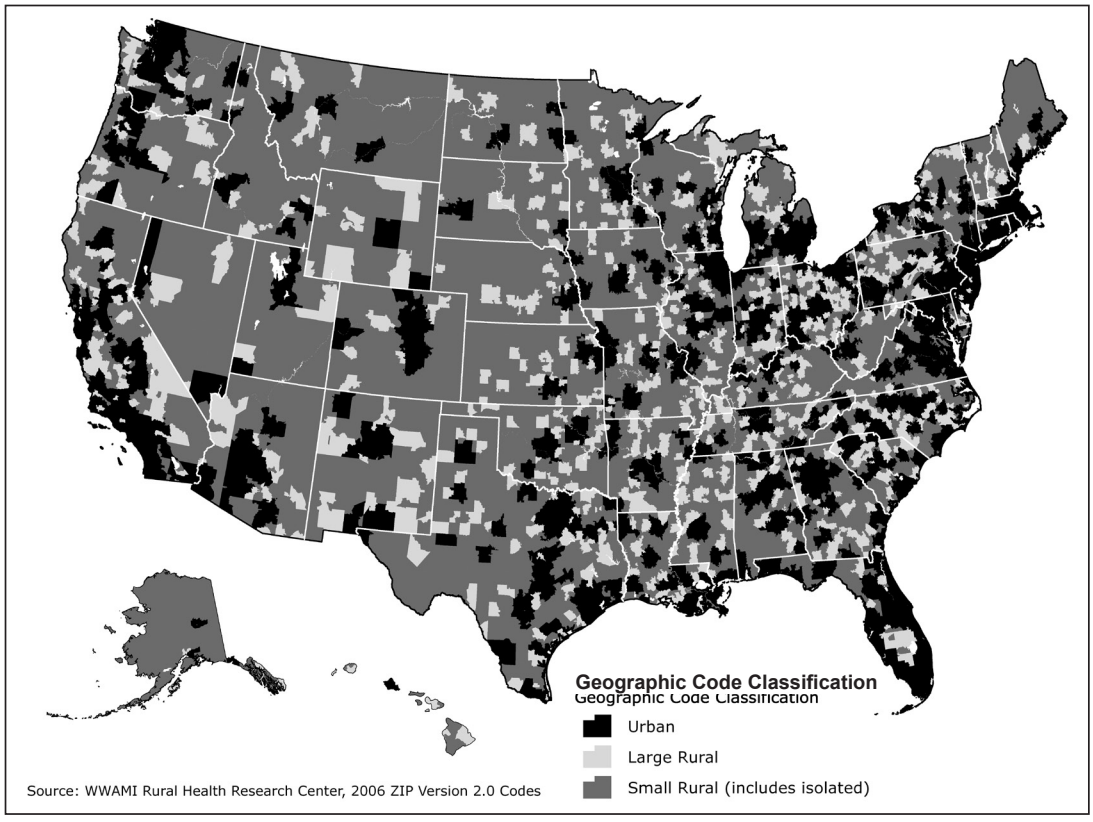
Rural communities themselves appear to provide health benefits for their residents as well. Children in rural areas are more likely than urban children to live in safe and supportive communities, as reported by their parents. However, they are less likely to have access to amenities such as community or recreation centers or parks or playgrounds than their urban counterparts.

This book presents information about the health and health care of children by location and by major de-

mographic characteristics such as age, sex, race and ethnicity, and household income as compared to the Federal poverty level. Unless otherwise noted, all graphs provide information on all children from birth through age 17. Children were classified by race and ethnicity in seven categories: non-Hispanic White, non-Hispanic Black, Hispanic (in homes where English is the primary spoken language), Hispanic (in homes where Spanish is the primary spoken language), non-Hispanic American Indian/Alaska Native (alone or in combination with other races), multiracial, and single races other than those listed above. All comparisons presented in the text of this chartbook are statistically significant at the .05 level; however, unless otherwise specified, other differences presented in the graphs have not been tested for significance and should be interpreted with caution.

A few limitations of the survey should be noted. All information presented here is based on parental reports and was not independently verified. In addition, the analyses in this book are simple tabulations; they do not use complex analytic techniques and do not control for demographic or other factors that may influence the differences among populations.

The Technical Appendices at the end of this book presents information about the survey methodology and sample. For more in-depth information about the survey and its findings, other resources are available. For more detailed analyses of the survey's findings, the Data Resource Center (DRC) on Child and Adolescent Health web site provides online access to the survey data. The interactive data query feature allows users to create their own tables and to compare survey results at the national and state levels and by relevant subgroups such as age, race/ethnicity, and income. The Child & Adolescent Health Measurement Initiative (CAHMI) leads the Data Resource Center in partnership with state and family leaders, including numerous Title V leaders, Family Voices, other family organizations and public and private sector child health data experts. It is sponsored by the Maternal and Child Health Bureau within the Health Resources and Services Administration. The website for the DRC is: www.childhealthdata.org. More complex analyses can be conducted using the public use data set available from the National Center for Health Statistics at: http://www.cdc.gov/nchs/about/major/slaits/nsch.htm



Technical Appendix

About the Survey

The National Survey of Children's Health (NSCH) was fielded using the State and Local Area Integrated Telephone Survey (SLAITS) mechanism. SLAITS is conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC). It uses the same large-scale random-digit-dial sampling frame as the CDC's National Immunization Survey.[15]

Approximately 2.8 million telephone numbers were randomly generated for inclusion in the NSCH. After eliminating numbers that were determined to be nonresidential or nonworking, the remaining numbers were called to identify households with children less than 18 years of age. From each household with children, one child was randomly selected to be the focus of the interview.

The respondent was the parent or guardian in the household who was knowledgeable about the health and health care of the randomly selected child. For 73.5 percent of the children, the respondent was the mother. Respondents for the remaining children were fathers (20.5 percent), grandparents (4.2 percent), or other relatives or guardians (1.8 percent).

Surveys were conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, and Korean. Overall, 5.3 percent of the interviews were completed in Spanish, and 0.2 percent of the interviews were conducted in one of the four Asian languages.

Data Collection

Data collection began on April 5, 2007 and ended on July 27, 2008, with interviews conducted from telephone centers in Chicago, Illinois and Las Vegas, Nevada. A computer-assisted telephone interviewing system was used to collect the data. A total of 91,642 interviews were fully or partially completed for the NSCH, with 79 percent of the interviews completed in 2007. The number of completed interviews varied by state, ranging from 1,725 in Vermont to 1,932 in Illinois.

The interview completion rate, which is the proportion of interviews completed after a household was determined to include a child under age 18, was 66.0 percent. The overall response rate, which is the product of the resolution rate (the proportion of telephone numbers identified as residential or nonresidential), the screener completion rate (the proportion of households successfully screened for children), and the interview completion rate, was 51.2 percent. This rate is based on the assumption that telephone numbers that were busy or rang with no answer on all attempts were nonresidential.

Overall response rates ranged from 39.4 percent in New Jersey to 61.9 percent in North Dakota. Several efforts were made to increase response rates, including sending letters to households in advance to introduce the survey, toll-free numbers left on potential respondents' answering machines to allow them to call back, and small monetary incentives for those households with children who initially declined to participate.

Data Analysis

For producing the population-based estimates in this report, the data records for each interview were assigned a sampling weight. These weights are based on the probability of selection of each household telephone number within each State, with adjustments that compensate for households that have multiple telephone numbers, for households without telephones, and for nonresponse.

With data from the U.S. Bureau of the Census, the weights were also adjusted by age, sex, race, ethnicity, household size, and educational attainment of the most educated household member to provide a dataset that was more representative of each State's population of noninstitutionalized children less than 18 years of age. Analyses were conducted using statistical software that accounts for the weights and the complex survey design.

Responses of "don't know" and "refuse to answer" were considered to be missing data. Records with missing data on the variables of interest were excluded from all analyses, with one exception. For households with missing data for income or household size, the household income relative to the federal poverty level was multiply imputed.

Children's areas of residence were classified according to the Rural-Urban Commuting Areas (RUCAs).[16] The RUCA codes were developed by the U.S. Department of Agriculture's Economic Research Service and the University of Washington's Rural Health Research Center through

funding provided by the Federal Office of Rural Health Policy. The 10 RUCA codes were grouped into three categories. "Urban-focused areas" (RUCA codes 1.0, 1.1, 2.0, 2.1, 3.0, 4.1, 5.1, 7.1, 8.1, and 10.1) include metropolitan areas and surrounding towns from which commuters flow to an urban area; large rural areas (RUCA codes, 4.0, 4.2, 5.0, 5.2, 6.0, and 6.1) include large towns ("micropolitan" areas) with populations of 10,000 to 49,999 and their surrounding areas; and small or isolated rural areas (all remaining codes) include small towns with populations of 2,500 to 9,999 and their surrounding areas.

Children were classified by race and ethnicity in seven categories: non-Hispanic White, non-Hispanic Black, non-Hispanic American Indian/Alaska Native, other single races, other combined races, Hispanic (English speaking) and Hispanic (Spanish speaking). Racial and ethnic groups are mutually exclusive; that is, data reported for White, Black, American Indian/Alaska Native, multiracial, and children of other races do not include Hispanics, who may be of any race. These categories differ from the racial aggregation method recommended by the Office of Management and Budget, which keeps intact the five single-race categories and includes the four double-race categories that are most frequently reported. This analysis did not employ these nine groups because sample sizes did not support it. However, a separate category was included for American Indian/Alaska Natives, as well as those of other races, because their health risks may vary by locality.

Accuracy of the Results

The data from the NSCH are subject to the usual variability associated with sample surveys. Small differences between survey estimates may be due to random survey error and not to true differences among children or across States.

The precision of the survey estimates is based on the sample size and the measure of interest. Estimates at the national level will be more precise than estimates at the urban/rural level, and those for all children will be more precise than estimates for subgroups of children (for example, children in small rural areas or children of the same race). For national estimates of the health and health care of all children, the maximum margin of error is 0.8 percentage points.[17] For estimates reported by area of residence for all children, the maximum margin of error is 3.8 percentage points.

Availability of the Data

Except for data suppressed to protect the confidentiality of the survey subjects, all data collected in the NSCH are available to the public on the NCHS and MCHB websites. Data documentation and additional details on the methodology[18] are available from the National Center for Health Statistics (http://www.cdc.gov/slaits.htm).

Interactive data queries are possible through the Data Resource Center for the NSCH (www.childhealthdata.org). The Data Resource Center provides immediate access to the survey data, as well as resources and assistance for interpreting and reporting findings.

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