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Introduction

Children in rural areas face particular risks to their health and well-being.^{1,2} Some risks relate to their demographic characteristics; rural children are more likely to live in poverty than those in urban areas.³ Some relate to their physical environment; the risks of injury and of death from injury are greater among rural children.⁴ Still others are related to the family and community contexts in which children grow up; rural youth are more likely to smoke or use chewing tobacco than their urban counterparts.⁵

Differences in the health status of urban and rural children are not necessarily attributable to children's geographic location but rather are related to the demographic characteristics of the children and families who live in rural areas. However, where these differences do exist, they can give program planners and policymakers important information which can be used to design and 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 to age 17 in the United States while taking into account the environments in which they grow and develop. Conducted for the third time in 2011–2012, 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 (HHS), 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).

This book presents information about the health and health care of children by location and by major demographic characteristics such as age, sex, race/ethnicity, and household income as a percent of the Federal Poverty Level (FPL). Unless otherwise noted, all graphs provide information on all children from birth to age 17. Children were classified by race and ethnicity using four categories: non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic children of multiple races or of a race other than those listed above.

How Locations Were Defined

Children were classified according to their residence 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 suburban towns from which commuters flow into an urban area. Large rural areas include large towns ("micropolitan" areas) with populations of 10,000–49,999

persons and their surrounding areas, and small rural areas include small towns and isolated rural areas with populations of 2,500–9,999 persons and their surrounding areas.⁶ The map on page 6 shows how these three types of areas are distributed across the United States. Of the 71.8 million children in the United States who could be classified into urban and rural areas, 58.9 million live in urban areas, 6.5 million live in large rural areas, and 6.4 million live in small rural areas (rural/urban designation could not be determined for 2.4% of children).

The data presented in this chart-book represent bivariate analyses of children's health, demographic, family, and neighborhood characteristics for children living in urban, large rural, and small rural areas. "Total" percentages include all children, regardless of whether or not they could be categorized into one of the three rural and urban categories. Pairwise tests were conducted to identify statistically significant differences between urban, large rural, and small rural areas, and those differences are highlighted in the text to the extent possible. More detailed tables presenting weighted frequencies, percentages, and standard errors are available on the web for each topic area. It is also important to note that the demographic distribution of children in rural and urban areas may influence differences (or lack of differences) that are presented in this book, however, multivariate analyses have not been conducted to account for any differences in demographics (i.e., race/ethnicity).

Key Findings

Urban and rural children differ in their demographic characteristics, which in turn can affect their health status and health risks. The NSCH found that children in rural areas were more likely to be poor than those in urban areas. Of those who lived in small rural areas, 26.2 percent lived in households with incomes below the Federal Poverty Level (FPL), as did 26.6 percent of children in large rural areas. Of children living in urban areas, 21.5 percent had household incomes below the FPL. Rural children were also more likely to be non-Hispanic White than urban children. Among children in urban areas, approximately half (49.5 percent) were non-Hispanic White, compared to 65.5 percent of those in large rural areas and 69.0 percent of those in small rural areas.

Overall, the survey found more similarities than differences with regard to the health status of children in urban and rural areas. Approximately 84 percent of children were reported by their parents to be in excellent or very good health, regardless of their urban or rural status. Children's oral health was also consistent across locations; the percentage of children reported to have excellent or very good oral health ranged from 69.8 to 71.8 percent. Children in urban and rural areas were also equally likely to be born prematurely, to be at risk of developmental delay, or to have at least one chronic condition.

However, rural children do face specific health risks. For example, children in rural areas were less likely than urban children ever to be fed breast milk: 81.0 percent of urban

children were ever breastfed, compared to 71.2 percent of children in large rural areas and 70.6 percent of those in small rural areas. Children living in rural areas were also more likely than urban children to be overweight or obese. More than one-third of children aged 10–17 in both large and small rural areas met the criteria for overweight or obesity (having a body mass index at or above the 85th percentile for their age and sex), compared to 30.1 percent of urban children. In addition, children in rural areas were more likely than urban children to live with someone who smokes; one-third of children in large and small rural areas lived with a smoker, compared to 22.2 percent of urban children.

Urban and rural children were equally likely to have health insurance, to be covered continuously, and to have insurance that is adequate to meet their needs. However, children in rural areas were less likely to have had a preventive health care visit in the past 12 months (80.8 percent of children in small rural areas and 81.4 percent of children in large rural areas did so, compared to 85.3 percent of children in urban areas) and to have had a preventive dental visit in the past 12 months (73.3 percent of children in large rural areas and 75.3 percent of children in small rural areas did so, compared to 78.0 percent of children in urban areas). There was no apparent difference in the percentage of rural and urban children with emotional, behavioral, or developmental problems who received the mental health services that they needed or in the percentage of young children who received standardized developmental screens.

Children in rural areas were found to experience greater risks to their

educational and social well-being. For example, children in rural areas were more likely to repeat a grade in school; 14.0 percent of school-aged children in small rural areas and 12.1 percent of those in large rural areas have repeated a grade, compared to 8.2 percent of urban children. Rural children were also less likely than their urban peers to participate in organized activities outside of school and to read for pleasure on a typical day.

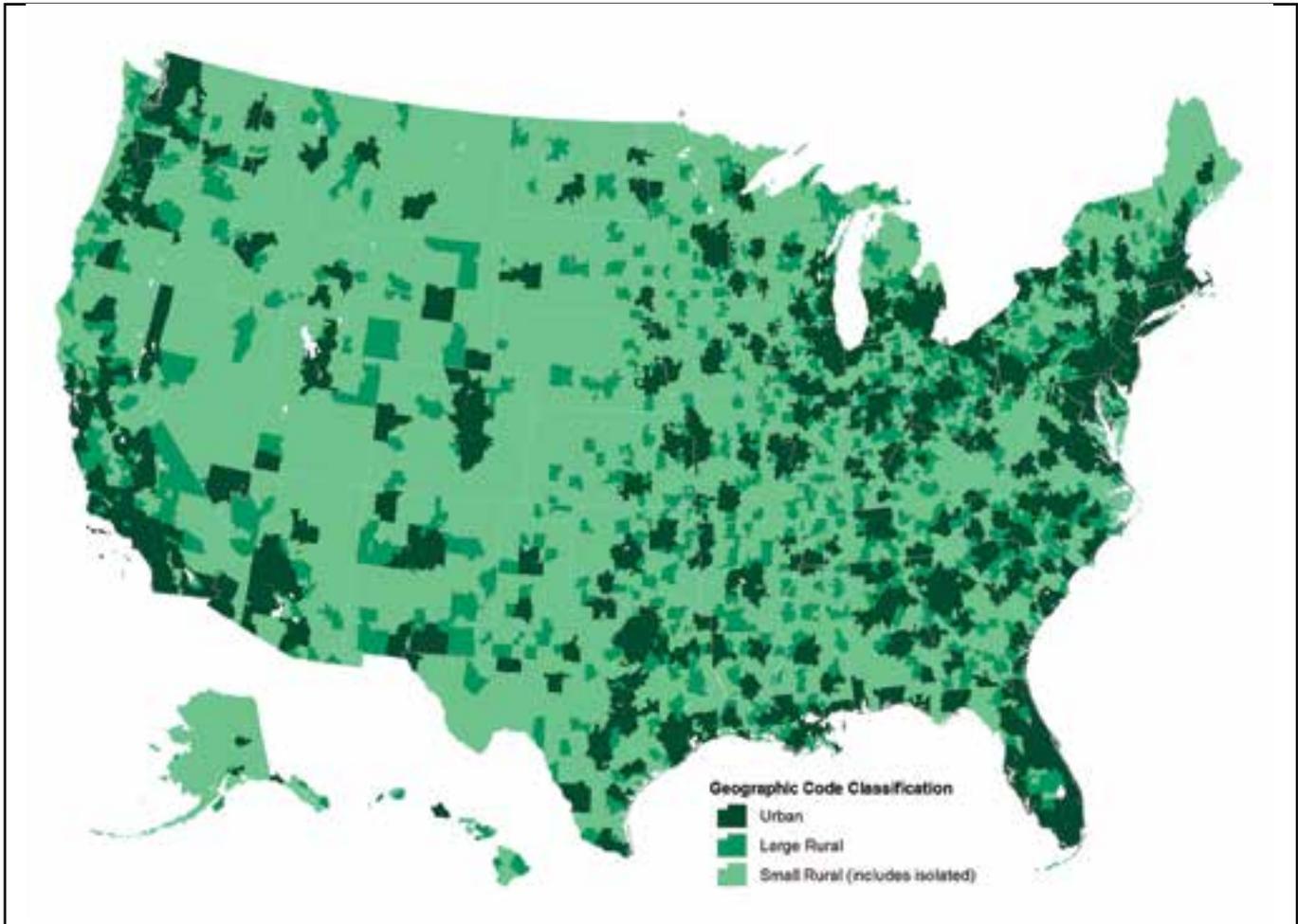
For other measures, however, rural children—especially those living in small rural areas—appeared to be well-protected on measures of connectedness to their families and communities. The percentage of children who shared a meal with their families every day in the past week was highest in small rural areas, where 52.9 percent of children did so. Parental stress is less common in small rural areas as well. The parents of 9.6 percent of children in small rural areas reported usually or always feeling stress associated with parenting, compared to 11.3 percent of those in urban and 12.3 percent of those in large rural areas.

Rural communities appear to provide health benefits for their residents. Children in rural areas were more likely to live in safe and supportive communities (i.e., parents reported watching out for each other's children, people in the neighborhood helping one another out), as reported by their parents, than urban children. However, they were less likely to have access to amenities such as sidewalks or walking paths, community or recreation centers, or parks or playgrounds than their urban counterparts.

The Technical Appendix at the end of this book summarizes information about the survey methodology and sample. For more in-depth information about the survey and its data, other resources are available.

For easy access to online analyses of the survey and its data, the Data Resource Center for Child and Adolescent Health (DRC) web site, sponsored by the Maternal and Child Health Bureau, provides access to the survey

data at 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>.



- 1 Singh GK, Siapush M. Widening Rural–Urban Disparities in Life Expectancy, U.S., 1969–2009. *Am J Prev Med* 2014;46(2):e19–e29.
- 2 Singh GK, Siapush M. Widening Rural–Urban Disparities in All-Cause Mortality and Mortality from Major Causes of Death in the USA, 1969–2009. *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 2014;91(2): 272-292.
- 3 Farrigan T, Hertz T, Parker T. *Rural poverty and well-being*. Washington, DC: U.S. Department of Agriculture, Economic Research Service; 2014.
- 4 Kim K, Ozegovic D, Voaklander DC. Differences in incidence of injury between rural and urban children in Canada and the USA: a systematic review. *Injury Prevention*. 2012;18(4):264–271.
- 5 Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE, Miech RA. *Monitoring the future: national survey results on drug use, 1975–2013, vol. 1: secondary school students*. Ann Arbor, MI: University of Michigan, Institute for Social Research; 2014.
- 6 WWAMI Rural Health Research Center and the U.S. Department of Agriculture, Economic Research Service. *Rural-Urban Commuting Area Codes*. <http://depts.washington.edu/uwruca/index.php>