

RURAL/URBAN DIFFERENCES IN HEALTH CARE ARE NOT UNIFORM ACROSS STATES

Barbara A. Ormond, Stephen Zuckerman, and Aparna Lhila

When people think of the segment of the United States population most dependent on the health care safety net, they may first imagine the urban poor in crowded emergency rooms at urban public hospitals. Although this group no doubt has serious health care problems, residents of rural areas may, in fact, have greater health care needs and face access barriers that are no less substantial. Rural populations are generally older, poorer, and have lower levels of education than their urban counterparts. There are far fewer hospitals and physicians in rural communities; the time it takes to travel to health care providers is often greater and public transportation less available. These problems may be magnified in rural areas far distant from any urban center.

As the federal government gives states greater responsibility for designing health policies, the fundamental differences between rural and urban areas as well as among different types of rural areas will need to be recognized. Although state policymakers need to understand the differences that exist between rural and urban areas *within their borders* in order to design effective policies, most national data sets containing the relevant health care information (e.g., the National Health Interview Survey [NHIS] and the Medical Expenditure Panel Survey [MEPS]) do not allow for this type of substate geographic analysis.

This information gap can be filled in part by the National Survey of America's Families (NSAF), a survey of children and adults under the age of 65 in over 44,000 households that is being conducted as part of the Urban Institute's *Assessing the New Federalism* (ANF) study.¹ The NSAF provides representative information on the nonelderly population for 13 ANF focal states and for the nation as a whole.² Among a broad range of demographic and economic data, the NSAF contains information on insurance coverage, health status, access to care, and use of health services. Of the ANF states, only eight have substantial rural populations; this brief presents state-level data for these states—Alabama, Colorado, Michigan, Minnesota, Mississippi, Texas, Washington, and Wisconsin.³

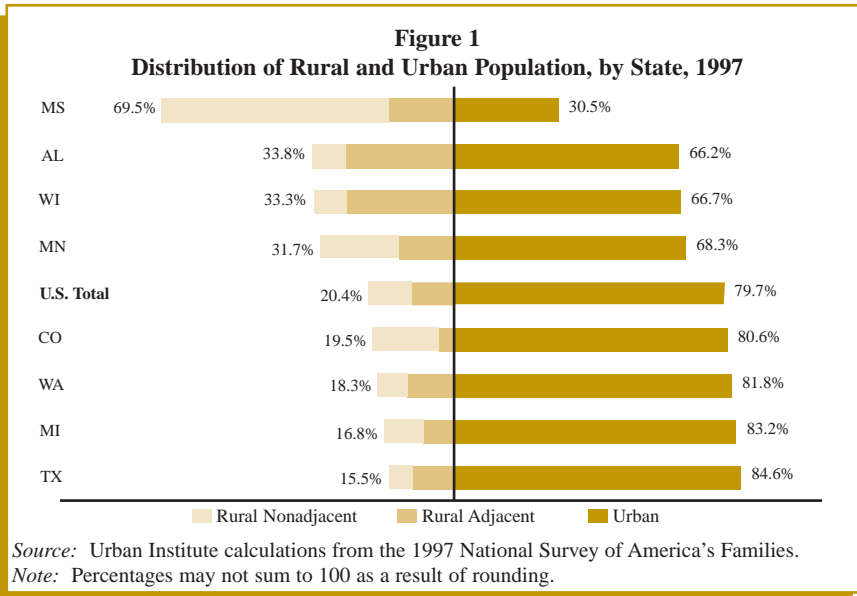
Data and Methods

Data are presented for three types of geographic areas—urban; rural, adjacent; and rural, nonadjacent. These classifications are based on the ranking of the respondent's county of residence on the rural-urban continuum code.⁴ Counties encompassing metropolitan statistical areas were classified as urban; those contiguous to metropolitan areas were classified as rural, adjacent; and counties not contiguous to metropolitan areas were classified as rural, nonadjacent.⁵ In the remainder of this brief, the terms rural, adjacent and rural, nonadjacent are shortened to adjacent and non-adjacent, respectively.

The national comparisons between urban and rural residents can be construed as differences in these health indicators that occur *on average* in the nation. The NSAF allows us to look behind these averages and examine the extent to which differences between urban and rural areas vary across the states. The data that follow show that national patterns may not necessarily be reflected in all states and that some states may have problem areas that are not apparent in national statistics. Differences that are significant at either the 90 or 95 percent level of confidence (distinguished in the tables) are referred to in the text as "significant."

NSAF data show that nationally in 1997, 20.4 percent of the population lived in rural areas. Mississippi was by far the most rural of the study states, with 69.5 percent of its population living in rural (adjacent and nonadjacent) areas (figure 1). Alabama and Wisconsin were the next most rural, each with about one-third of its population in rural counties. The picture changes substantially when the nature of the rural area in each state is considered. Mississippi's rural population was concentrated in areas far from urban influence; 53.7 percent of Mississippians lived in nonadjacent counties. Minnesota and Colorado had smaller total proportions of their populations in rural areas, but with 18.3 and 15.5 percent of their populations in nonadjacent counties, these rural populations were more isolated than those of Alabama and Wisconsin, where only 7.7 and 7.6

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percent lived in nonadjacent counties. Tables 1 through 4 and figure 1 present the states in order of descending share of the population residing in all rural counties.

Poverty in Rural Areas

Income has been shown to be correlated with many of the health status and access characteristics considered in this brief (Zuckerman et al. 1999). NSAF data show that rural areas are poorer than urban areas, and the more isolated the rural area, the greater the degree of poverty. Nationally, 13.8 percent of the urban population in 1997 was poor (household income below 100 percent of the federal poverty level [FPL]). This proportion rose to 15.8 percent in adjacent areas and 22.5 percent in nonadjacent areas. A similar pattern holds for the proportion of the population that was near poor (household income between 100 and 200 percent of the FPL), with the near-poverty rate rising from 17.3 percent in urban areas to 21.5 and 24.6 percent in adjacent and nonadjacent areas, respectively. The pattern of rising incidence of poverty with more remote residence generally holds across the eight states (data not shown). The role of poverty in explaining rural-urban differences in health status, access, and health care utilization will be addressed in future analyses.

Results

Insurance Coverage

Figure 2 contrasts patterns of insurance coverage between urban and rural areas

for the nation as a whole. As can be seen, the proportion of the nonelderly population covered by private health insurance—predominantly employer-sponsored coverage—falls as county of residence gets more remote. While 74.6 percent of urban residents had private insurance (employer-sponsored and other private), only 71.5 percent of residents in adjacent counties and 62.6 percent in nonadjacent counties had such insurance. Employer-sponsored insurance is less common in rural areas, in part because of the greater prevalence of small businesses, lower wages, and self-employment (Coburn et al. 1998). Other private coverage is more common—7.6 percent in nonadjacent areas,

compared with 5.6 percent in adjacent areas and 4.9 percent in urban areas—but not enough to bring total private coverage up to urban norms.

To some extent, the shortfall in private coverage in nonadjacent areas is offset by higher rates of public coverage. In nonadjacent areas, 15.5 percent of residents were publicly insured, compared with 11.1 percent in urban areas. One reason that public coverage rates were higher in nonadjacent areas than in urban areas is that poverty rates were higher.⁶ However, the higher rates of public coverage were not sufficient to fully offset the gap in employer-sponsored coverage. As a result, 21.9 percent of residents in nonadjacent counties were uninsured, versus only 14.3 percent in urban areas. Adjacent areas, on the other hand, had public coverage rates that were comparable to those in urban areas, leaving 17.5 percent of residents in adjacent counties uninsured. The poverty rate in adjacent counties was significantly above the urban poverty rate, but the difference is smaller than that observed for nonadjacent counties.

The pattern of lower rates of private insurance and higher rates of public insurance in nonadjacent areas is replicated in each of the eight study states. Furthermore, the high rates of uninsurance (table 1) in nonadjacent areas observed nationally occurred in all these states (only in Texas and Wisconsin were nonadjacent rates not significantly different from urban rates).

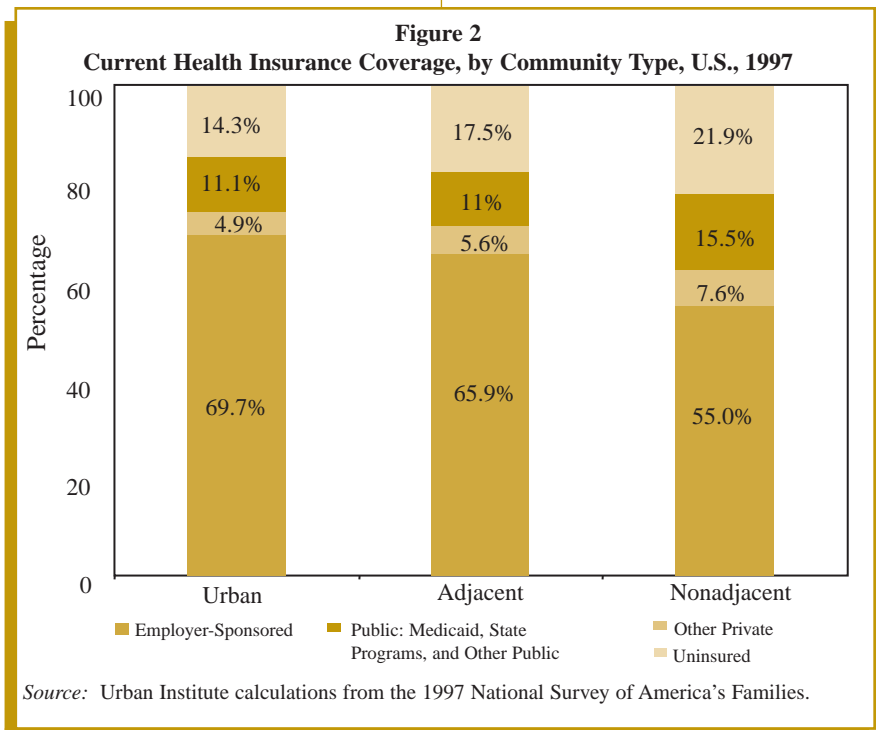


Table 1
Uninsurance Rate of Nonelderly Population,
by State and Community Type

	Urban (%)	Rural	
		Adjacent (%)	Nonadjacent (%)
U.S.	14.3	17.5**	21.9**
Mississippi	16.0	23.1**	20.8**
Alabama	13.9	22.5**	19.2**
Wisconsin	8.8	8.2	12.0
Minnesota	6.3	8.2	14.0**
Colorado	13.7	22.1*	22.3**
Washington	9.9	18.1**	26.9**
Michigan	8.8	11.9	13.3**
Texas	24.2	29.4**	27.4

** Indicates the difference between urban and rural is significant at the 95 percent confidence level.

* Indicates the difference between urban and rural is significant at the 90 percent confidence level.

Source: Urban Institute calculations from the 1997 National Survey of America's Families.

The uninsurance rate in nonadjacent counties in Washington was particularly high in comparison with urban counties in the state—26.9 percent versus 9.9 percent. Uninsurance rates were also higher in adjacent areas than in urban areas in all states except Wisconsin, where rates were actually lower, although not significantly; in Michigan and Minnesota the differences were not significant. Uninsurance rates in adjacent counties in Alabama, Mississippi, and Texas were actually higher than those in the state's more remote rural counties.

As was seen nationally, low rates of employer-sponsored coverage not offset by higher rates of other private coverage resulted in higher uninsurance rates in both adjacent and nonadjacent areas of Alabama, Colorado, Mississippi, Texas, and Washington (data not shown). In the other three states—Michigan, Minnesota, and Wisconsin—the convergence of urban and adjacent uninsurance rates can be traced to the fact that private coverage (employer and other private) in adjacent areas was similar to that found in urban areas. In the nonadjacent areas of these three states, both other private and public coverage were generally higher than in urban areas but not enough to make up for the lower level of employer-sponsored insurance.

Health Status

Lower rates of insurance coverage in rural areas would not necessarily be a problem if rural residents were less likely to need health care. However, the data in table 2 show that, nationally,

the reported health status of rural residents—especially those in nonadjacent counties—appears to be worse than that of urban residents. The proportion of urban residents reporting that their health status was fair or poor was 9.6 percent, compared with 13.1 percent for nonadjacent residents. Adjacent area residents, on the other hand, reported poor or fair health at a rate (9.0 percent) that is not significantly different from the urban rate.

State-level differences in reported health status only weakly follow the national patterns. In four of the eight states studied, there were no significant differences between urban and rural areas in the share of the population in fair or poor health. Health status was significantly worse in nonadjacent areas relative to urban areas only in Alabama

and Washington. These results show that health status in remote counties is not worse than in urban counties in most study states. However, at the state level, it appears that health problems may be more widespread among residents of less remote rural counties, a result not apparent in the national data. Health status was significantly worse in adjacent areas in Alabama, Mississippi, Texas, and Washington.

Health Care Visits

The data in table 3 show that, despite their poorer health status, rural residents are getting less professional medical attention than their urban counterparts. Nationally, 77.3 percent reported seeing a doctor or other health professional the year prior to the survey, compared with 74.4 percent for adjacent residents and 71.8 percent for nonadjacent residents. These differences in health care utilization would be more pronounced were it not for the fact that nonphysician providers play a larger role in rural health care. Data not presented indicate that rural residents were significantly less likely to have seen a physician (64.8 percent for nonadjacent areas and 66.5 percent for adjacent areas, compared with 71.6 percent for urban areas) but significantly more likely to have consulted some other type of health professional, such as a nurse or physician's assistant (26.2 percent for nonadjacent areas and 27.2 percent for adjacent areas, compared with 24.2 percent for urban areas).

The data in table 3 also show that the percentage of the population that visited a doctor or other health professional during the 12 months prior

Table 2
Population in Fair or Poor Health, by State and Community Type

	Urban (%)	Rural	
		Adjacent (%)	Nonadjacent (%)
U.S.	9.6	9.0	13.1**
Mississippi	11.9	18.1**	13.9
Alabama	11.3	16.0**	20.0**
Wisconsin	7.6	7.4	9.0
Minnesota	6.4	5.8	6.6
Colorado	7.7	10.4	6.9
Washington	7.7	11.1**	11.2*
Michigan	8.1	6.0	9.0
Texas	12.2	16.3*	11.2

** Indicates the difference between urban and rural is significant at the 95 percent confidence level.

* Indicates the difference between urban and rural is significant at the 90 percent confidence level.

Source: Urban Institute calculations from the 1997 National Survey of America's Families.

Table 3
Population Visiting a Doctor or Other Health Professional,
by State and Community Type

	Urban (%)	Rural	
		Adjacent (%)	Nonadjacent (%)
U.S.	77.3	74.4**	71.8**
Mississippi	71.6	71.5	67.8**
Alabama	78.1	69.7**	67.1**
Wisconsin	78.3	76.1	74.2
Minnesota	80.5	77.0*	73.2**
Colorado	78.8	74.0	77.4
Washington	78.8	76.4	73.0**
Michigan	80.3	73.8**	76.2*
Texas	71.4	65.6*	63.5**

** Indicates the difference between urban and rural is significant at the 95 percent confidence level.

* Indicates the difference between urban and rural is significant at the 90 percent confidence level.

Source: Urban Institute calculations from the 1997 National Survey of America's Families.

to the survey was consistently lower in nonadjacent counties relative to urban counties across all of the study states. The differences between nonadjacent and urban counties are significant in six states—Alabama, Minnesota, Mississippi, Texas, Michigan, and Washington. For adjacent counties in Alabama, Michigan, Minnesota, and Texas, the percentage of the population with a visit was significantly lower than the rate in urban counties.

Lack of Confidence in Getting Needed Care

Given their higher implied need for health services and lower rates of utilization, it is not surprising that rural residents reported being less confident in their access to health care services. The national data in table 4 show that a higher percentage of nonadjacent residents reported that they did not feel confident about their access to care, although the percentage is not large and the difference relative to urban areas is only moderately significant. The national difference between urban and adjacent counties is not statistically significant.

In four states—Colorado, Michigan, Mississippi, and Texas—residents of adjacent counties were significantly more likely to report not being confident in their ability to get care than were urban residents. In Alabama and Washington, the rate at which people lacked confidence in their access to care was significantly higher in both adjacent and nonadjacent counties.

These results suggest that the national patterns mask differences between rural and urban areas in people's confidence in their ability to get needed medical care that may be important in shaping state policy.

State Profiles

When viewed from the perspective of the individual study states, these data suggest that, in certain states, there is a convergence of problems facing rural residents. In Alabama, Mississippi, and Washington, people in rural areas were significantly more likely than urban residents to be in fair or poor health and uninsured and significantly less likely than urban residents to visit a health care provider or be confident they could get needed care. The problems were

more consistently significant in Alabama across both adjacent and nonadjacent counties. In Washington, the problems were strikingly more pronounced in nonadjacent areas, with only reported health status appearing as a significant problem in adjacent counties. In Mississippi, adjacent counties seem to have had a more adverse set of indicators, with the exception that nonadjacent counties had the lowest rates of provider visits within the state.

A convergence of problems is also seen in Minnesota. Rural residents of Minnesota's nonadjacent counties were more likely to be uninsured and less likely to visit a health care provider. However, because Minnesota's rural population was not less healthy and did not lack confidence in getting needed care, the implications of the problems may be less severe in this state.

Findings and Policy Implications

The national results confirm many of the rural health care problems that have been identified elsewhere (e.g., Schur and Franco 1999), including low incomes, inadequate insurance coverage, health problems, and lower rates of service use.⁷ All of these indicators point to a clear need for a health care safety net in rural communities.

The state-specific data reveal that rural-urban differences in access and utilization are not present to the same degree in all of the study states. Rural circumstances in some states are not as severe as the national data suggest,

Table 4
Population Lacking Confidence in Getting Needed Care, by State
and Community Type

	Urban (%)	Rural	
		Adjacent (%)	Nonadjacent (%)
U.S.	8.6	9.2	10.1*
Mississippi	8.8	15.2**	9.0
Alabama	7.3	11.7**	11.2*
Wisconsin	5.5	4.3	6.7
Minnesota	4.4	4.8	5.8
Colorado	8.4	19.7**	11.4
Washington	6.5	12.3**	12.6**
Michigan	5.6	10.0*	7.0
Texas	11.2	14.1*	12.7

** Indicates the difference between urban and rural is significant at the 95 percent confidence level.

* Indicates the difference between urban and rural is significant at the 90 percent confidence level.

Source: Urban Institute calculations from the 1997 National Survey of America's Families.

while in other states they are more severe. Reported health status is not always worse in rural communities, for example, and service use is not always lower when compared with urban areas within states. On the other hand, individual states have problems that are masked by the national data, as seen in the case of confidence in the ability to get needed care. For example, although adjacent area residents nationally were not less confident in their ability to get needed care, residents of rural communities in half of the study states expressed concerns significantly more frequently than did urban residents in their states. Despite these state variations in the health care indicators, there were no states in which rural areas had fewer health care problems than urban areas.

Observations from site visits to rural communities in five states⁸ undertaken as part of the ANF project are consistent with these findings. In all of the communities visited, there were systems in place to meet, in large part, the health care needs of rural residents (Ormond, Wallin, and Goldenson 2000). The study communities employed a range of approaches to rural health care provision, using federal, state, and local resources with varying degrees of success. Consistent with the data presented here, however, no one community seemed to have addressed all of the difficulties inherent in trying to meet the needs of a geographically dispersed population that is relatively poor and sick.

While there is no precise link between the magnitude of uninsurance rate differences and expected differences in access, these data have shown that rural-urban differences in access are smaller than differences in uninsurance rates. For example, nationally uninsurance rates are over 50 percent higher in nonadjacent areas than in urban areas, implying that the rural safety net has a larger gap to fill than the urban safety net. Although problems stemming from this high level of uninsurance in rural areas could have been intensified by the much lower level of provider supply, it appears this did not occur, the probability of seeing a health care provider in nonadjacent areas is only 7 percent lower than in urban areas. The small difference in utilization in the face of large difference in insurance coverage suggests that rural safety net providers are filling a larger portion of the needs of their uninsured than are their urban counterparts.

Notes

1. See Kondratas, Weil, and Goldstein (1998) for a description of the ANF project.

2. See Kenney et al. (1999) for a description of the survey design and methodology.

3. The other ANF states are California, Florida, New Jersey, and New York. These each have less than 10 percent of their populations classified as rural and less than 3 percent as rural, nonadjacent. Data from Alaska is excluded from the national analysis since the rural-urban classification scheme used is not applicable to Alaska.

4. The rural-urban continuum code is based on a classification scheme developed by the Department of Agriculture in 1975, as revised in 1988. For the purposes of this analysis, counties ranked 0–3 on the continuum code (counties encompassing metropolitan statistical areas) were classified as urban; those ranked 4, 6, or 8 (counties contiguous to metropolitan areas) were classified as rural, adjacent; and those ranked 5, 7, or 9 (counties not contiguous to metropolitan areas) were classified as rural, nonadjacent. For comparison, counties were also ranked according to the urban influence code (Ghelfi and Parker 1997), with those ranked 1 or 2 classified as urban; those ranked 3–6 classified as rural, adjacent; and those ranked 7–9 classified as rural, nonadjacent. Only eight respondents (two in Wisconsin, two in Arkansas, and four in South Dakota) changed ranking when this alternative system was used. All eight are coded as rural, adjacent by the rural/urban continuum code but would be coded as rural, nonadjacent by the urban influence code.

5. Total sample size is 89,460, with 69,718 in urban areas, 10,001 in rural, adjacent areas, and 9,741 in rural, nonadjacent areas. Interviews were conducted over the telephone. Telephone households were selected using random-digit-dialing techniques. For nontelephone households, NSAF employs an area probability design. This means that only some counties are sampled and that those actually selected, therefore, represent not only themselves but other nonselected counties.

To make full use of NSAF data at a substate level, some nontelephone households from selected counties were imputed to similar nonselected ones in order to achieve, by imputation, a more representative spread of nontelephone households across all counties. No nontelephone households from urban counties were imputed to rural counties or vice versa. However, within rural counties in the eight study states, nontelephone households were imputed between adjacent and

nonadjacent counties. By design, this imputation process produces estimates that differ from the nonimputed data. However, the estimates are not affected greatly because only 0.69 percent of the adjacent data nationally are imputed from nontelephone households in nonadjacent counties and 0.87 percent of the nonadjacent data are from adjacent counties.

6. While the proportion of the population that is over age 65 and, hence, eligible for Medicare is higher in rural areas than in urban areas, the NSAF covers only the nonelderly population. The higher rate of public insurance in rural areas cannot, therefore, be attributed to the prevalence of Medicare.

7. The results presented in Franco and Schur are derived from the 1996 MEPS, the 1994 NHIS, and the 1994 Robert Wood Johnson National Access to Care Survey. Because of survey methodology, the results are not directly comparable across surveys. The patterns in the data, however, are consistent across the various surveys.

8. Alabama, Minnesota, Mississippi, Texas, and Washington.

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This series presents findings from the National Survey of America's Families (NSAF). First administered in 1997, the NSAF is a survey of 44,461 households with and without telephones that are representative of the nation as a whole and of 13 selected states (Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, Washington, and Wisconsin). As in all surveys, the data are subject to sampling variability and other sources of error. Additional information about the survey is available at the Urban Institute Web site: <http://www.urban.org>.

The NSAF is part of *Assessing the New Federalism*, a multiyear project to monitor and assess the devolution of social programs from the federal to the state and local levels. Alan Weil is the project director. The project analyzes changes in income support, social services, and health programs. In collaboration with Child Trends, the project studies child and family well-being.

The project has received funding from The Annie E. Casey Foundation, the W.K. Kellogg Foundation, The Robert Wood Johnson Foundation, The Henry J. Kaiser Family Foundation, The Ford Foundation, The John D. and Catherine T. MacArthur Foundation, the Charles Stewart Mott Foundation, The David and Lucile Packard Foundation, The McKnight Foundation, The Commonwealth Fund, the Stuart Foundation, the Weingart Foundation, The Fund for New Jersey, The Lynde and Harry Bradley Foundation, the Joyce Foundation, and The Rockefeller Foundation.

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Publisher: The Urban Institute, 2100 M Street, N.W., Washington, D.C. 20037

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