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Health Care Affordability and Medical Debt: Differences by Rurality, Region, and Socio-Demographic Characteristics

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Key Findings

- **Over 40% of rural residents and urban residents reported being worried about medical bills.**
- **Rural residents were more likely than their urban counterparts to have experienced problems paying medical bills (12% vs 10%, p<0.01) and inability to pay medical bills (8% vs 6%, p<0.01).**
- **Health care affordability and medical debt issues differed significantly among rural residents by race and ethnicity, sexual orientation, age, income, and type of health insurance.**
- **Rural individuals who were just above the poverty threshold were the most likely to worry about, have problems paying, or be unable to pay medical bills compared to rural residents at other income levels.**
- **Rural residents in the Western U.S. were more likely to be able to pay their medical bills than rural residents in the Northeast, North Central/Midwest, or Southern U.S.**

Purpose

The high cost of health care affects health at both the individual and population level, and rural residents experience inequities in health, access to care, and financial well-being. However, little research has examined how health care affordability differs by rural/urban residence, and how health care affordability varies along geographic and socio-demographic dimensions within rural areas. In this policy brief, we examine rural/urban differences in rates of health care (un)affordability, as well as among rural residents by key socio-demographic characteristics.

Background and Policy Context

Medical debt – that is, debt incurred because of health care costs and related expenditures – impacts 40% of adults in the U.S., amounting to more than 100 million people.[1] Medical debt has multiple deleterious effects including stress, creating barriers to accessing additional health care, and difficulty managing finances for other basic needs, such as housing and nutrition.[2–5] High rates of medical debt in a community may also negatively impact health care providers' and facilities' financial stability.[6]

Despite the widespread impact of medical debt on the U.S. population, relatively little is known about rural/urban differences in health care affordability issues, although there is some indication that rural residents experience greater rates of medical debt, as evidenced by higher rates of contact by debt collection agencies.[7] Even less is known about differences in health care affordability issues among rural residents by geography (e.g., region) and by other systems of stratification and marginalization associated with disparities in health care affordability such as race and ethnicity, sexual orientation, age, sex, family income, and insurance status.[8] This information is critical to inform tailored rural health policy, especially as rural residents experience poorer health and rural health care facilities navigate financially tenuous situations.[9–12] Furthermore, additional information on rural health care

affordability issues is needed to inform federal and state policies, such as Medicaid expansion, which has been shown to reduce medical debt.[9,10]

This policy brief highlights rural/urban differences in health care affordability and medical debt concerns, as well as among rural residents by socio-demographic factors including race and ethnicity, sexual orientation, age, sex, family income, insurance, and region of residence.

Approach

In this study, we used data from the 2022 National Health Interview Survey (NHIS), accessed through IPUMS Health Surveys at the University of Minnesota.[13] We limited the data to adults age 18 and over (N = 24,201) for the rural/urban analysis, and further limited the data to adults age 18 and over in rural areas (N = 3,979) for the within-rural analysis. We used the publicly available measure of rurality in the NHIS, which defines rural residents as respondents who live in nonmetropolitan counties.[14] We examined differences in health care affordability among rural residents by race and ethnicity, sexual orientation, age, sex, family income (as a ratio relating to the poverty threshold), insurance status, and region of residence. Insurance status was defined as having insurance from one of the following sources: private, dual-eligible (Medicare and Medicaid), Medicare Advantage, Medicare only (no Advantage), Medicaid only, other government insurer (including military health, Tricare, a state-sponsored public health insurance plan, or another coverage provided by a public program), unknown insurance status, and uninsured (including Indian Health Service with no other source of health insurance). Respondents who reported multiple types of insurance were coded under the following hierarchy: Private, Medicare Advantage, dual-eligible, Medicare only (no Advantage), Medicaid only, other government insurance, uninsured, and unknown insurance status. Region divisions follow the U.S. Census Bureau definitions:[15] Northeast (ME, NH, VT, MA, RI, CT, NY, NJ, PA), North Central/ Midwest (MI, OH, IN, IL, WI, MN, IA, MO, ND, SD, KS, NE), South (DE, MD, Washington D.C., VA, WV, NC, SC, GA, FL, KY, TN, MS, AL, TX, AR, OK, LA), and West (WA, AK, OR, CA, HI, MT, ID, WY, CO, NM, AZ, UT, NV). To protect respondent privacy, we suppressed cell sizes below N = 10.

Health care affordability and medical debt concerns were measured using survey respondents' answers to three questions: *"If you get sick or have an accident, how worried are you that you will be able to pay your medical bills?"*, *"In the past 12 months, did you or anyone in the family have problems paying or were unable to pay any medical bills?"*, and *"Do you/does anyone in your family have any medical bills that you are unable to pay at all?"* The first two questions are related to health care affordability, and the last question provides an indication of medical debt. Respondents were only asked if they were unable to pay medical bills if they responded "yes" to having problems paying medical bills. All answers were dichotomized to yes/no responses.

We used chi-square tests to determine statistically significant differences in health care affordability issues between rural and urban residents, and to determine statistically significant differences among rural residents in relation to these issues by race and ethnicity, sexual orientation, age, sex, family income, insurance status, and region of residence. We employed survey weights to generate nationally representative estimates.

Results

In Figure 1, we show that there was no statistically significant difference between rural and urban residents regarding worry about medical bills; more than 40% of respondents in both areas reported being worried. But rural residents were significantly more likely than their urban counterparts to have experienced problems paying medical bills (12.2% vs 10.0%, $p<0.01$) and inability to pay medical bills (8.3% vs 6.0%, $p<0.01$).

Figure 1. Health care affordability issues by rural vs. urban location

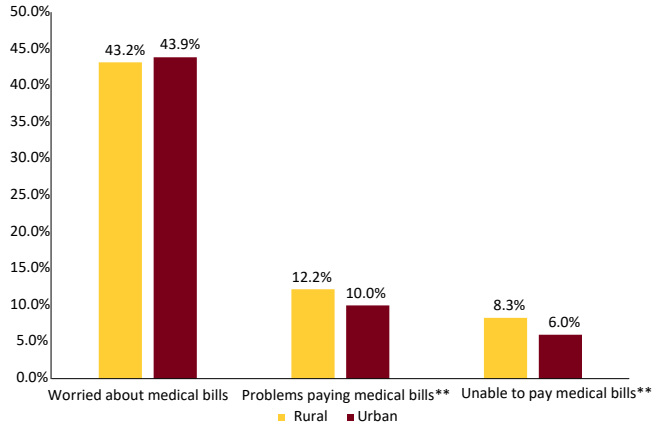

Table 1 shows differences in all three outcomes among rural residents by socio-demographic characteristics. Among rural residents in 2022, Hispanic individuals, non-Hispanic Black individuals, and individuals identifying as other/multiple races and ethnicities were most likely to be worried about medical bills, with group percentages ranging from 51.5 – 71.9%, while non-Hispanic White, Asian, and American Indian/Alaska Native individuals were least likely to be worried about medical bills, with group percentages ranging from 41.1 – 43.3%. Individuals identifying as other/multiple races and ethnicities were most likely to have experienced problems paying medical bills (23.7%), while White non-Hispanic individuals were the least likely to have experienced problems paying medical bills (11.5%). Hispanic individuals, non-Hispanic Black individuals, and individuals identifying as other/multiple races and ethnicities were most likely to be unable to pay their medical bills, with group percentages ranging from 12.4 – 14.9%, while non-Hispanic White individuals were least likely to be unable to pay their medical bills (7.6%).

Examining other demographic differences, we found that rural residents identifying as lesbian, gay, or bisexual (LGB) were more likely to be worried about medical bills (55.2%) and have experienced problems paying medical bills (18.6%) than rural residents identifying as heterosexual (42.7% and 11.9%, respectively). Rural adults 65+ years old were less likely to be worried about medical bills (32.8%), have experienced problems paying medical bills (7.6%), or be unable to pay medical bills (3.9%) than their younger counterparts.

We found differences by income and insurance status as well. Rural individuals with family in-

Table 1. Health care affordability issues among rural residents by socio-demographic characteristics

Sociodemographic Characteristics	Worried about Medical Bills (subgroup %s)	Problems Paying Medical Bills (subgroup %s)	Unable to Pay Medical Bills (subgroup %s)
Race and Ethnicity (p-value)	P<0.001	P<0.01	P<0.01
White, non-Hispanic	41.1	11.5	7.6
Black, non-Hispanic	51.5	17.1	14.9
Hispanic	71.9	17.1	12.4
Asian	41.1	n/a**	n/a**
American Indian/Alaska Native	43.3	n/a**	n/a**
Other/multiple	52	23.7	14.7
Sexual Orientation (p-value)	P<0.05	P<0.05	P: 0.056
Lesbian, Gay, Bisexual	55.2	18.6	13.2
Heterosexual	42.7	11.9	8.1
Age (p-value)	P<0.001	P<0.01	P<0.01
18-24	40.1	11.2	7.1
25-34	46.9	12.7	9.2
35-44	46.7	14.7	10.4
45-54	49.0	14.6	10.4
55-64	48.7	14.7	10.8
65+	32.8	7.6	3.9

P-values of "P>0.05" or lower indicate statistically significant differences between sociodemographic characteristics within each of the categories of health care unaffordability. Table percentage denominators are the subgroups within each socio-demographic characteristic. (For example, 41.1% of rural White non-Hispanic residents are worried about medical bills, 11.5% of rural White non-Hispanic residents have experienced problems paying medical bills, and 7.6% of rural White non-Hispanic residents were unable to pay medical bills.)

***N < 10; suppressed to protect privacy*

Table 1 Cont'd. Health care affordability issues among rural residents by socio-demographic characteristics

Sociodemographic Characteristics	Worried about Medical Bills (subgroup %)	Problems Paying Medical Bills (subgroup %)	Unable to Pay Medical Bills (subgroup %s)
Sex (p-value)	P: 0.080	P: 0.463	P: 0.674
Male	41.5	11.7	8.0
Female	44.9	12.7	8.5
Poverty Ratio (p-value)	P<0.001	P<0.001	P<0.001
<100% (below poverty threshold)	45.8	18.9	13.4
100-199%	53.7	20.3	15.5
200-299%	46.7	12.8	7.5
300-399%	39.0	8.0	5.9
400% or more	34.0	4.8	2.3
Insurance type (p-value)	P<0.001	P<0.001	P<0.001
Private	40.8	10.2	6.5
Dual-Eligible	44.1	14.5	7.6
Medicare Advantage	37.0	13.4	8.1
Medicare only (no Advantage)	40.4	13.9	9.1
Medicaid only	44.3	14.3	11.1
Uninsured	67.8	18.9	15.4
Other government insurer	25.3	n/a**	n/a**
Unknown insurance status	48.3	n/a**	n/a**
Region (p-value)	P: 0.140	P: 0.309	P<0.01
Northeast	41.8	11.9	8.5
North Central/Midwest	39.9	11.1	7.3
South	46.4	13.7	10.6
West	42.9	10.8	3.9

P-values of "P>0.05" or lower indicate statistically significant differences between sociodemographic characteristics within each of the categories of health care unaffordability. Table percentage denominators are the subgroups within each socio-demographic characteristic. (For example, 41.1% of rural White non-Hispanic residents are worried about medical bills, 11.5% of rural White non-Hispanic residents have experienced problems paying medical bills, and 7.6% of rural White non-Hispanic residents were unable to pay medical bills.)

***N < 10; suppressed to protect privacy*

come-to-poverty ratios of 400% or higher were least likely to be worried about medical bills (34.0%), have experienced problems paying medical bills (4.8%), and be unable to pay medical bills (2.3%), while rural individuals with family income-to-poverty ratios between 100-199% were most likely to be worried about medical bills (53.7%), have experienced problems paying medical bills (20.3%), and be unable to pay medical bills (15.5%). Notably, individuals with family income-to-poverty ratios between 100-199% were more likely to experience health care affordability and medical debt concerns than rural individuals below the poverty threshold (with group percentages of 45.8%, 18.9%, and 13.4%, respectively).

Rural uninsured individuals were most likely to worry about medical bills (67.8%), have experienced problems paying medical bills (18.9%), and be unable to pay medical bills (15.4%). Rural individuals with

other government insurance were least likely to worry about medical bills (25.3%) and rural individuals with private insurance were least likely to have experienced problems paying medical bills (10.2%) and inability to pay medical bills (6.5%).

In terms of geographic region, rural residents of the Western U.S. were less likely to be unable to pay medical bills (3.9%) compared to rural residents of the Northeast, North Central/Midwest, and Southern U.S., with group percentages from 7.3 – 10.6%.

Discussion and Implications

In this brief, we found that health care affordability and medical debt issues were more likely to be reported by rural residents than urban residents, specifically regarding experiencing problems paying with or being unable to pay medical bills. This is consistent with prior research showing that rural residents are more likely to report problems with medical affordability.[16] In both groups, more than four in ten respondents reported being worried about paying medical bills. These high rates are concerning, given that other research has found links between health care cost concerns and not seeking health care services.[17]

Among rural residents, the Hispanic, non-Hispanic Black, and other/multiple races/ethnicities groups had the highest percentages of individuals worried about paying medical bills, having experienced problems paying medical bills, and being unable to pay medical bills. These findings connect to prior research showing that Hispanic rural residents were less likely than rural residents of all other races and ethnicities to access preventive care.[18] In contrast, the non-Hispanic White, Asian, and American Indian/Alaska Native groups had the lowest percentages of individuals worried about paying medical bills, having experienced problems paying medical bills, and being unable to pay medical bills. The American Indian/Alaska Native group finding may be due to the small size of this population in our sample. Alternatively, this group may experience lower adverse health care affordability and medical debt outcomes due to utilizing care through the Indian Health Services (IHS). More research is needed in this area.

Rural residents who identified as LGB were more likely to worry about medical bills and have experienced problems paying medical bills. Both rural residents (as compared to urban residents) and LGB individuals (as compared to heterosexual individuals) are more likely to have lower incomes and poorer health outcomes, which may contribute to concerns around medical bills.[19] More research is needed to further explore the impact of medical debt on the rural LGBTQ+ population. However, some research finds barriers in access to care for rural LGBTQ+ populations, relative to their cisgender and heterosexual counterparts and to urban residents.[20-22]

Rural individuals with higher family income-to-poverty ratios were less likely to worry about their medical bills, have experienced problems paying medical bills, and be unable to pay medical bills than rural individuals with lower family income-to-poverty ratios. Notably, rural individuals who were just above the poverty threshold were more likely to worry about their medical bills, have experienced problems paying medical bills, and be unable to pay medical bills than rural individuals below the poverty line. These individuals living near – but above – the poverty line may have family incomes too high for public insurance through Medicaid,[23] but not sufficiently high enough to comfortably cover their medical expenses. This highlights a policy need concerning health care affordability for rural families living just above the poverty threshold. Medicaid expansion allows for household incomes below 138% of the federal poverty level to qualify for Medicaid, but not all states have chosen to expand Medicaid, including many states with large rural populations such as Texas.[24] Expanding Medicaid in these states could help alleviate insurance-related health care affordability issues among rural residents in these states.

Rural adults age 65 and over were less likely to worry about their medical bills, have experienced problems paying medical bills, and be unable to pay medical bills compared to adults under age 65. This is likely due to adults age 65 and over being eligible to receive Medicare and other social security benefits as a way to help pay for medical bills.[25] Medicare is an important source of insurance for over 58 million people age 65 and over.[26] Still, more than one-third of all Medicare beneficiaries in this analysis reported worry about paying their bills, and Medicare beneficiaries can still face significant out-of-pocket spending.[27] This is a troubling indicator that access to health insurance may not be

sufficient to alleviate health care-related financial stress in our current system.

Uninsured rural individuals were the most likely to worry about their medical bills, have experienced problems paying medical bills, and be unable to pay medical bills compared to rural insured individuals. This is likely due to high out-of-pocket costs that uninsured individuals pay whenever they need health care services, and demonstrates the importance of health insurance. However, not all insurance is equal in regard to health care affordability outcomes; after the uninsured, the unknown, dual-eligible, and Medicaid only were the next most-worried groups, and 40.8% and 40.4% of privately insured and Medicare only insured individuals reported worry. Even the least-worried group, the Medicare Advantage group, had 37.0% of individuals reporting worry. There has been an ongoing rise in cost-sharing for insured individuals,[28] likely leading to increased worry. Affordability of health care coverage and cost-sharing liabilities also have implications for health care-seeking behaviors, as those who are uninsured or underinsured and more likely to be worried about paying medical bills may in turn be more likely to delay health care services.[24,29,30] Rural residents of the Western U.S. were less likely to be unable to pay medical bills than rural residents of the Northeast, North Central/Midwest, and Southern U.S. This reflects existing research that shows that individuals living in the Southern U.S. are more likely to report experiencing medical debt than other regions of the country, followed by those living in the Midwest and Northeast.[31] These findings warrant future research that explores patterns of health care utilization by region, and what protective factors and systems may exist in the Western U.S. that make it less likely for rural residents living in this region to report that they are unable to pay their medical bills. Possible explanations include that the most populous states in the West have high rates of insured individuals, and that almost all Western states have expanded Medicaid.[24,32]

Conclusion

Health care affordability and medical debt are important issues impacting access to care in rural areas. The findings of this brief demonstrate that health care affordability and medical debt issues impact rural residents more often than urban residents. Our findings also show that health care affordability and medical debt issues are differently distributed across rural populations with notable differences across race and ethnicity, sexual orientation, age, family income, insurance status, and region. Our findings also show how common concerns about health care costs are, with more than 40% of adults in rural and urban areas alike reporting worry about affording care. Such worry may be a predecessor to medical debt, and may also prevent people from seeking timely and necessary care. Policies to improve health care affordability and medical debt should consider their implications for rural residents.

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