
National Health Statistics Reports

Number 134 ■ December 4, 2019

Differences in Select Measures of Health Care Access, Utilization, and Financial Burden by Urbanicity, 2017

by Emily P. Terlizzi, M.P.H., and Robin A. Cohen, Ph.D.

Abstract

Objective—This report examines select measures of health care access, utilization, and financial burden by metropolitan statistical area (MSA) status among adults aged 18–64.

Methods—Data from the 2017 National Health Interview Survey were used to examine how a usual place to go for care, visits to a doctor or emergency room in the past year, unmet medical need due to cost, inability to afford prescription medications, and problems paying medical bills differed by MSA status among adults aged 18–64. Estimates are presented for adults living in a large MSA (population of 1 million or more), living in a small MSA (less than 1 million in population), and not living in an MSA.

Results—In 2017, adults not living in an MSA generally had reduced access to or use of health care, and a higher financial burden associated with their care, compared with those in more populous areas. However, after controlling for selected sociodemographic and health characteristics, it was found that for the measures examined, adults not living in MSAs were more likely to have a usual place to go for care but less likely to have financial burden associated with their care compared with those in small or large MSAs.

Conclusion—The unadjusted results show that adults not living in an MSA are more likely to have financial burden associated with their health care and reduced access to or use of health care services compared with those in large MSAs. However, the differences in the measures examined may be due to differential distributions of poverty levels, insurance coverage status, or other sociodemographic or health characteristics between the MSA status categories rather than MSA status itself.

Keywords: access and use • unmet medical needs • metropolitan statistical area (MSA) • National Health Interview Survey (NHIS)

Introduction

Death rates for all causes generally increase as population density decreases and are highest among those in nonmetropolitan areas (1). In addition, prevalence of chronic conditions, such as hypertension and arthritis, as well as mental health conditions are higher among those living in nonmetropolitan or rural areas (1,2). Risk factors such as obesity and smoking are also highest among those in more rural areas (1,3). Differential access to and use of health care by urbanicity may be both contributing to these disparities and creating an obstacle to addressing them. Barriers such as long travel distances and provider and specialist shortages are especially present for those living in more rural areas (4,5). In addition, urban residents are more likely to have higher family incomes and to have health insurance than rural residents (1,2,6), which are factors that may enable persons to acquire health care (7). This study examines differences in select measures of health care access and use by urbanicity, both before and after controlling for sociodemographic and health characteristics.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics



Methods

Data source

Data from the 2017 National Health Interview Survey (NHIS) were used to generate the estimates presented in this report. NHIS is a multipurpose health survey of the U.S. civilian noninstitutionalized population conducted continuously throughout the year by the National Center for Health Statistics (NCHS). Data are collected in person at the respondent's home using computer-assisted personal interviewing, but follow-ups to complete interviews may be conducted by telephone.

NHIS consists of both a core set of questions that remain relatively unchanged from year to year as well as supplemental questions that are not asked every year. The core consists of four main components: Household Composition Section, Family Core, Sample Adult Core, and Sample Child Core. The Household Composition Section collects basic demographic and relationship information about all members of all families living in the household. The Family Core collects demographic, health insurance, and basic health information about all family members from a single family member (family respondent). For the Sample Adult Core, one adult per family (sample adult) is randomly selected to respond to detailed health questions. For the Sample Child Core, one child per family (sample child) is randomly selected, and a knowledgeable adult (usually a parent) responds on the child's behalf. Further information on the design, content, and use of NHIS is available from: <https://www.cdc.gov/nchs/nhis/index.htm>. Although some measures were collected for all persons in the Family Core, only the 19,408 persons who were selected as sample adults and aged 18–64 were included in this study. The response rate for the Sample Adult component was 53.0% in 2017 (8).

Metropolitan statistical area status

In this report, urbanicity is measured using metropolitan statistical area (MSA) status. The Office of Management and Budget (OMB) defines MSAs according

to published standards that are applied to U.S. Census Bureau data. Generally, an MSA consists of a county or group of counties containing at least one urbanized area with a population of 50,000 or more (9). In addition to the county or counties that contain all or part of an urbanized area, an MSA may contain other adjacent counties that are economically and socially integrated with the central city. The number of adjacent counties included in an MSA is not limited, and boundaries may cross state lines. Data from the 2017 NHIS classifies households using the February 2013 metropolitan and micropolitan statistical area delineations, which resulted from applying the 2010 OMB standards to U.S. Census 2010.

This report classifies MSA status into three categories: large MSA, small MSA, and not in MSA. Respondents were first categorized as either living in an MSA or not, using the criteria outlined above. Those who did not live in an MSA were classified as “not in MSA.” Next, those who were determined to live in an MSA were split into two groups, depending on that MSA's size. Those who lived in an MSA with a population of 1 million or more were classified as living in a large MSA, and those who lived in an MSA with a population of less than 1 million were classified as living in a small MSA.

This classification may differ from other measures of urbanicity. MSAs are generally thought of as more urban, while nonmetropolitan areas are generally thought of as more rural, but these definitions do not overlap exactly. For example, a study using 2000 data found that the OMB definition of metropolitan and nonmetropolitan, and the Census Bureau definition of urban and rural, had close but not absolute agreement (10). More than 82% of the population were similarly classified using these two definitions (metropolitan and urban, and nonmetropolitan and rural), while the remaining 18% of the population were discordantly categorized (metropolitan and rural, and nonmetropolitan and urban). Both the definitions and delineations have changed since 2000, but the discordance between measurements of urbanicity should be noted. The MSA classification scheme used in this report is consistent with other NHIS reports and products (11,12).

Health care access and use measures

Survey questions regarding unmet medical need due to cost and problems paying medical bills are included in the Family Core, while survey questions regarding having a usual place to go for care, having seen or talked to a health care professional, emergency room visits, and inability to afford prescription medications are included in the Sample Adult Core.

Having a usual place for care is based on the following question: “Is there a place that you usually go to when you are sick or need advice about your health?” Those who had positive responses were asked a follow-up question: “What kind of place [is it/do you go most often]—a clinic, doctor's office, emergency room, or some other place?” Sample adults who reported having the emergency room as their usual place for medical care are defined as not having a usual place of care.

Having seen or talked to a health care professional in the past 12 months, or having had a recent visit with a health care professional, is based on the following question: “About how long has it been since you last saw or talked to a doctor or other health care professional about your own health? Include doctors seen while a patient in a hospital.” Responses of 6 months or less, or more than 6 months but not more than 1 year ago, are included in this measure.

Any emergency room visit in the past 12 months was based on the following question: “During the past 12 months, how many times have you gone to a hospital emergency room about your own health?” Responses of at least one emergency room visit in the past 12 months are included in this measure.

Unmet medical need due to cost is based on the following set of questions: “The following questions are about the use of health care. Do not include dental care. During the past 12 months, [have you delayed seeking medical care/has medical care been delayed for anyone in the family] because of worry about the cost?” and “During the past 12 months, was there any time when [you/ someone in the family] needed medical care, but did not get it because [you/the

family] couldn't afford it?" If the family respondent answered positively and there were other people in the family, they were asked a follow-up question: "For which family member was medical care delayed?" and "Who didn't get needed care?" respectively. Persons who had care delayed, didn't get needed care, or both were considered as having unmet medical need due to cost. However, only the responses collected regarding sample adults are included in this analysis.

Being unable to afford prescription medications in the past 12 months is based on the following question: "During the past 12 months, was there any time when you needed any of the following, but didn't get it because you couldn't afford it? ... Prescription medicines."

Problems paying medical bills is based on the following question: "In the past 12 months, did [you/anyone in the family] have problems paying or were unable to pay any medical bills? Include bills for doctors, dentists, hospitals, therapists, medication, equipment, nursing home, or home care."

Sociodemographic and health characteristics

Sociodemographic and health characteristics of adults presented in this report include: age, sex, race and ethnicity, employment status during the last week (categorized as employed, not employed, and not in workforce, with the latter defined as those who are not working and not looking for work), state Medicaid expansion status, poverty level (calculated using NHIS imputed income files), health insurance coverage status (categorized as private, Medicaid and other public, other coverage, and uninsured), health status, and number of chronic conditions. Chronic conditions, as reported by the sample adult, were identified using the methodology detailed by Ward and Schiller (13). State Medicaid expansion status (as of January 1, 2017) was determined based on state of residence. All other characteristics examined were reported by the family respondent, although age and sex were verified by the sample adult at the beginning of their interview.

Statistical analysis

This report first presents the percent distribution of sociodemographic and health characteristics by MSA status for the civilian noninstitutionalized population of adults aged 18–64 (Table 1). Next, estimates of select measures of health care access, use, and financial burden are examined by MSA status, both unadjusted as well as adjusted for several sociodemographic and health characteristics (Table 2).

Unadjusted descriptive analyses are included to examine how these measures of health care access and utilization differ by urbanicity. This report then presents adjusted results from a series of multiple logistic regressions to see if associations between urbanicity and measures of health care access and use persist after adjustment for potential sociodemographic or health characteristics. When selecting covariates to include in the regression models, those chosen were hypothesized to potentially confound the association between MSA status and measures of health care access, use, or financial burden. Sociodemographic variables such as age group, sex, and race and Hispanic ethnicity were included in the models to control for differential health care access and use and for differences of these characteristics between MSA status groups. Health insurance status and poverty level were included as well, because they differ by MSA status and are enabling factors for accessing and using health care (7). State Medicaid expansion status also was included in the models because previous research has shown that those living in rural areas may disproportionately benefit from Medicaid expansion (14). Health status was included because it differs by MSA status and may influence persons' use of health care services. When selecting covariates to include in the model, employment status and number of chronic conditions were initially included but subsequently dropped to reduce collinearity and overspecification of the model. Adjusted odds ratios (AORs) and adjusted percentages presented were generated from logistic regression models that include MSA status, age, sex, race and ethnicity, health insurance coverage

status, state Medicaid expansion status, poverty level, and health status (Table 2, Technical Notes Table). Adjusted percentages are the predicted marginal probabilities estimated for the average person in a given MSA group after adjusting for all other variables included in the model. The 95% confidence intervals (CIs) for each AOR and adjusted percentage were generated from the models, while the 95% CIs for unadjusted results were generated using the Korn–Graubard method for complex surveys.

Estimates in this report were calculated using sample adult weights and, therefore, are representative of the U.S. civilian noninstitutionalized population of adults aged 18–64. Data weighting procedures are described in more detail elsewhere (8). Point estimates and the corresponding variances were calculated using SUDAAN software version 11.0.01, a software package designed to account for the complex sampling design of NHIS. Respondents with missing data or unknown information were excluded from the analysis. All estimates in this report meet NCHS standards of reliability as specified in "National Center for Health Statistics Data Presentation Standards for Proportions" (15).

Differences between distributions of sociodemographic and health variables were evaluated using chi-squared tests. For measures with distributions that differed by MSA status, differences between individual percentages were evaluated using two-sided significance tests. All reported differences are statistically significant ($p < 0.05$). No adjustments were made for multiple comparisons.

Results

Sociodemographic and health characteristics

In 2017, among adults aged 18–64, sociodemographic and health characteristics differed by MSA status. Adults who did not live in an MSA were more likely to be older than those living in either small or large MSAs: 47.3% of those not living in an MSA were aged

45–64 compared with 42.4% and 41.3%, respectively (Table 1). Those not in an MSA were also more likely to identify as non-Hispanic white than those living in a small or large MSA, and less likely to identify as Hispanic or non-Hispanic black. Adults who did not live in an MSA were less likely to be employed and more likely to not be in the workforce than adults in small or large MSAs (although the percentages of unemployed were similar), as well as less likely to have family incomes greater than 400% of the federal poverty level. Two-thirds of adults in large MSAs lived in a state that had expanded Medicaid, compared with one-half of those not in MSAs. Compared with those not living in an MSA, those living in either small or large MSAs were less likely to be uninsured (16.3% compared with 12.7% and 11.5%), to have Medicaid or other public coverage (16.0% compared with 13.5% and 12.4%), to be in fair or poor health (14.7% compared with 11.1% and 9.4%), and to have two or more chronic conditions (26.1% compared with 21.1% and 16.9%).

Measures of health care access and use

The percentage of adults aged 18–64 who had a usual place to go for care did not differ by MSA status (Figure 1, Table 2). However, after adjusting for sociodemographic and health characteristics, those living in a small (83.4%) or large (83.1%) MSA were less likely to have a usual place to go for care than those not in an MSA (86.4%), although these differences were slight. By contrast, the association between a recent visit with a health care professional and MSA status did not change after adjustment by covariates; those living in large MSAs were more likely to have seen or talked to a health care professional in the past 12 months than those not in MSAs (Figure 2, Table 2), although, again, differences were slight. Although adults living in a large MSA were less likely to have had a visit to an emergency room in the past 12 months (16.5%) than those living in a small MSA (19.0%) and those not in an MSA (21.3%), after

adjusting for sociodemographic and health characteristics, the percentages for this measure did not differ by MSA status (Figure 3, Table 2).

Measures of financial burden of care

All examined associations between MSA status and measures of financial burden of care differed before and after adjustment of covariates. Among adults aged 18–64 living in a large MSA, the percentage who had unmet medical need due to cost in the past 12 months (10.2%) was lower than among those not living in an MSA (12.8%) (Figure 4, Table 2). By contrast, after adjusting for sociodemographic and health characteristics, those living in a large MSA (11.4%) were more likely to have unmet medical need due to cost than those not in an MSA (9.7%). The percentage of those living in a large MSA who were unable to afford prescription medications in the past 12 months (5.8%) was lower than among those living in a small MSA

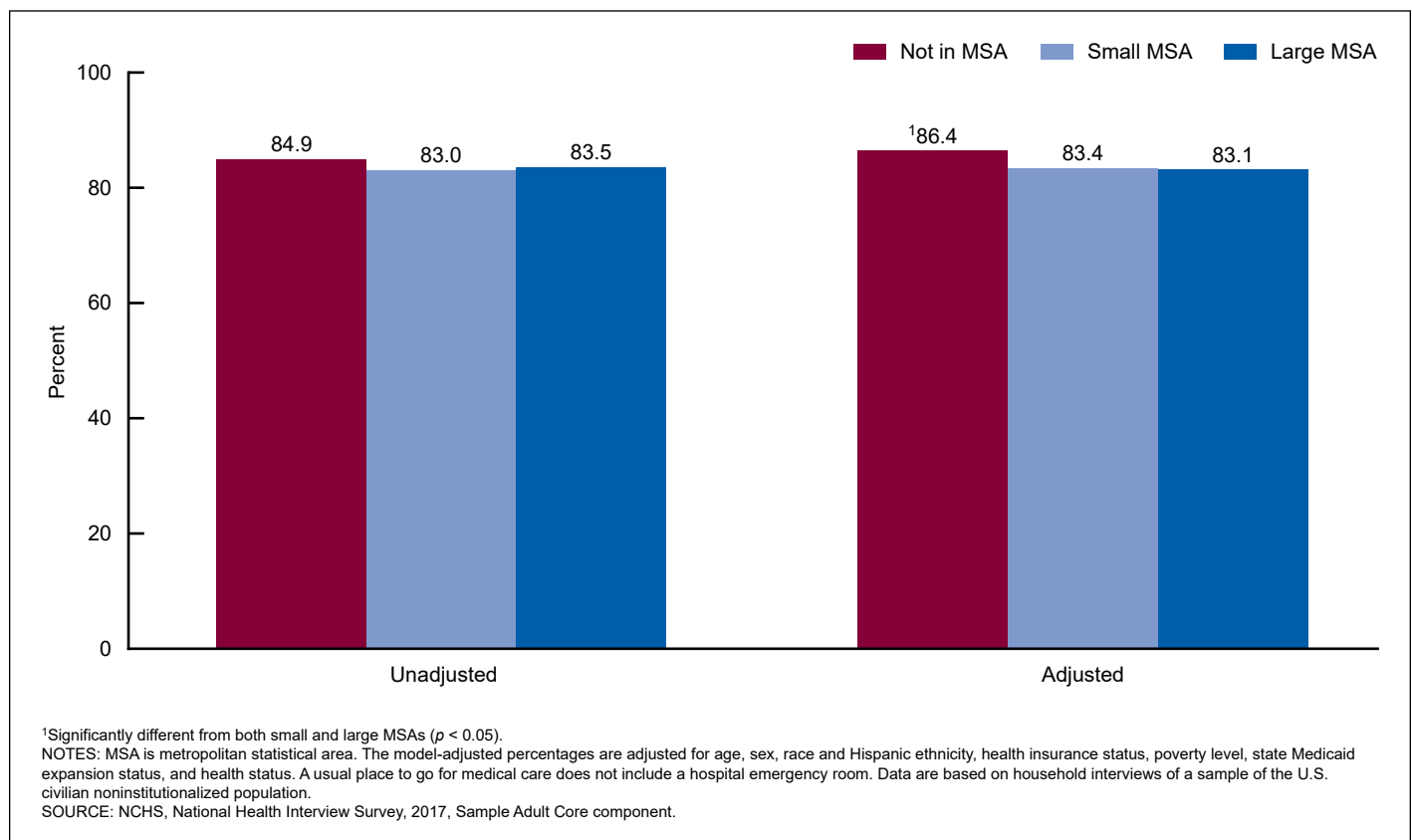


Figure 1. Percentage and model-adjusted percentage of adults aged 18–64 who had a usual place to go for medical care, by metropolitan statistical area status: United States, 2017

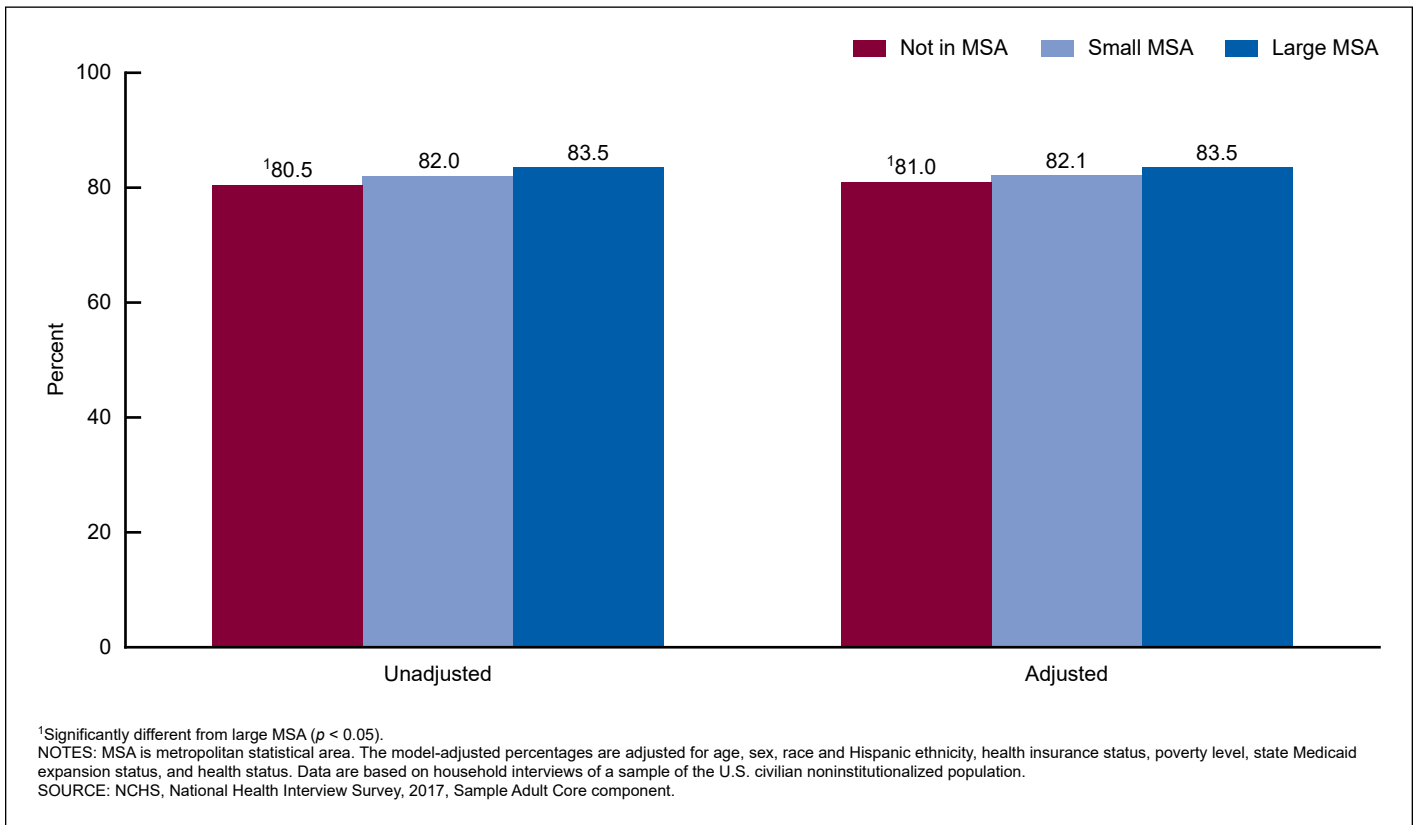


Figure 2. Percentage and model-adjusted percentage of adults aged 18–64 who had seen or talked to a health care professional in past 12 months, by metropolitan statistical area status: United States, 2017

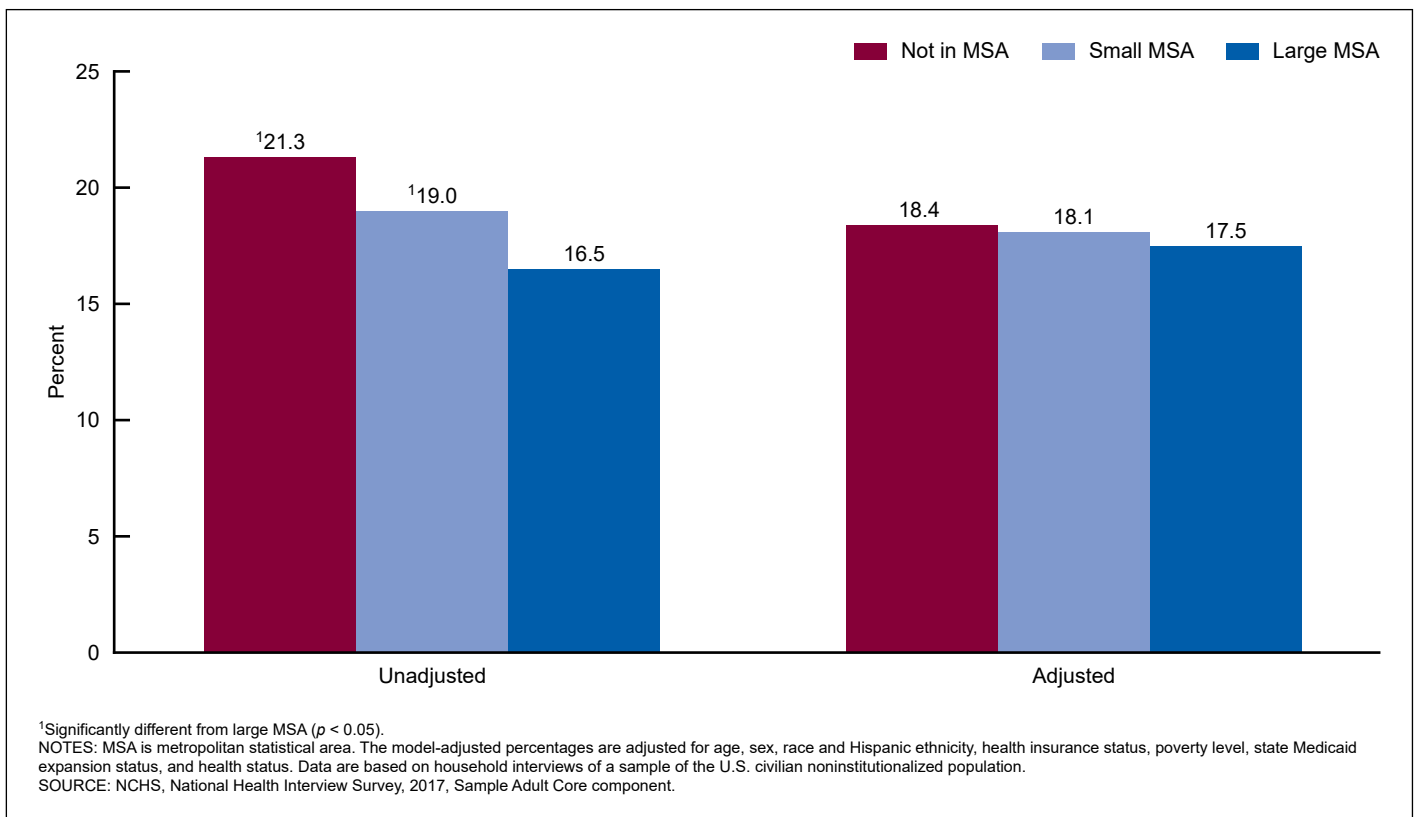


Figure 3. Percentage and model-adjusted percentage of adults aged 18–64 who had at least one visit to the emergency room in past 12 months, by metropolitan statistical area status: United States, 2017

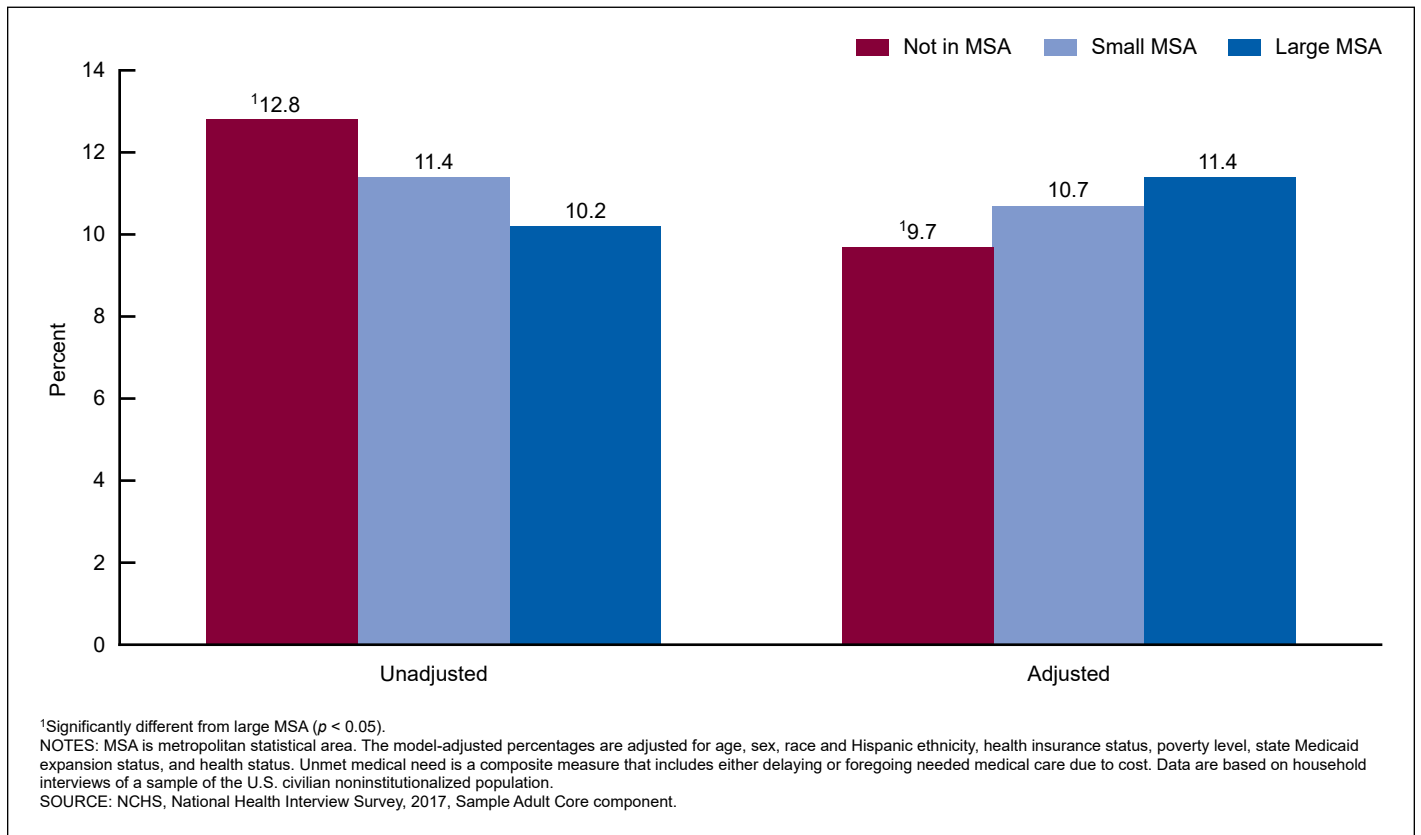


Figure 4. Percentage and model-adjusted percentage of adults aged 18–64 who had unmet medical need due to cost in past 12 months, by metropolitan statistical area status: United States, 2017

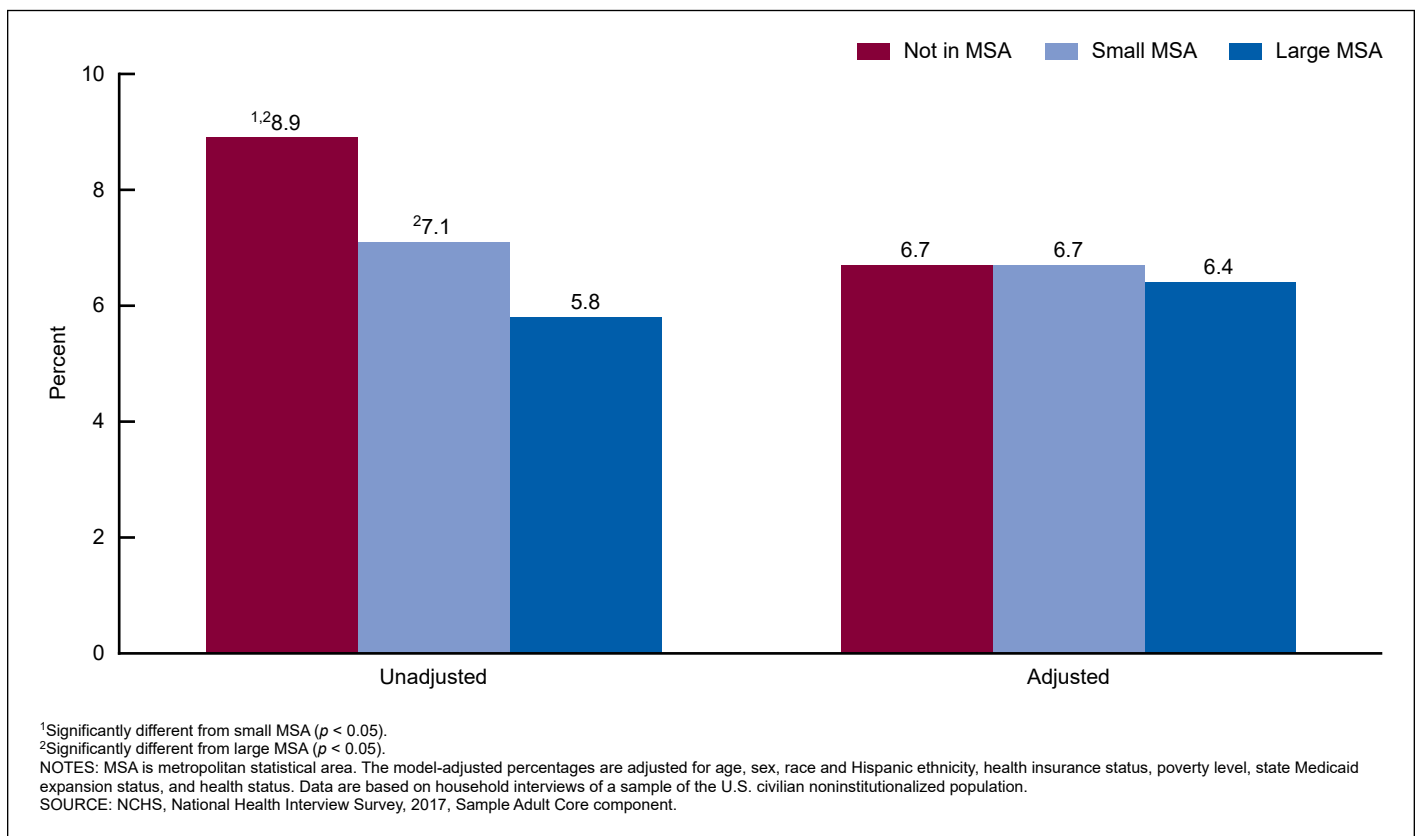


Figure 5. Percentage and model-adjusted percentage of adults aged 18–64 who needed prescription medication in past 12 months but could not afford it, by metropolitan statistical area status: United States, 2017

(7.1%) and those not in an MSA (8.9%) (Figure 5, Table 2). However, after adjusting for sociodemographic and health characteristics, the percentage who were unable to afford prescription medications did not differ by MSA status. Similarly, adults aged 18–64 living in a large MSA were less likely to be in families having problems paying medical bills in the past 12 months (13.5%) than those living in a small MSA (16.5%) and those not in an MSA (19.7%) (Figure 6, Table 2). However, after adjusting for sociodemographic and health characteristics, the percentage who were in families having problems paying medical bills did not differ by MSA status.

Discussion

Adults aged 18–64 not living in an MSA generally had reduced access to or use of health care, and higher financial burden associated with their care, compared with those in more populous areas. Although no difference was found by urbanicity in the percentage who had a usual place to go for care, adults not in

an MSA were less likely to have seen a doctor but more likely to have had a visit to an emergency room in the past 12 months compared with those in a large MSA. Those not in an MSA were also more likely to have unmet medical need due to cost, be unable to afford needed prescription medications, and be in families having problems paying medical bills in the past 12 months compared with those in a large MSA. These results are similar to those of a previous study which found that those in rural areas had higher financial burden associated with their health care (14).

However, after controlling for select sociodemographic and health characteristics for the measures examined, adults not living in MSAs had similar percentages of health care access and use and, in some cases, were less likely to have financial burden associated with their care. In the adjusted analysis, no statistically significant differences were found in the percentages of adults who were in families having problems paying medical bills, who had a visit to an emergency room, or who were unable to afford needed prescription medications

by urbanicity. For all measures examined in this report, after adjusting for selected sociodemographic and health characteristics, adults in small MSAs had similar use and access to health care as those in large MSAs.

Although the estimates differed by only a few percentage points, adults not in an MSA were still less likely to have seen a doctor in the past 12 months but were more likely to have a usual place to go for care after controlling for select sociodemographic and health characteristics. Supporting this study's finding, a previous study found that rural uninsured residents were more likely to have a regular source of care than urban uninsured residents (6). The authors of that study proposed that rural providers may be more willing to see patients regardless of insurance coverage or ability to pay compared with urban providers, because in their areas, fewer safety nets are available to assist rural residents (6). Perhaps related, where unadjusted percentages showed that adults not in an MSA were more likely to have unmet medical need due to cost than those in a large MSA,

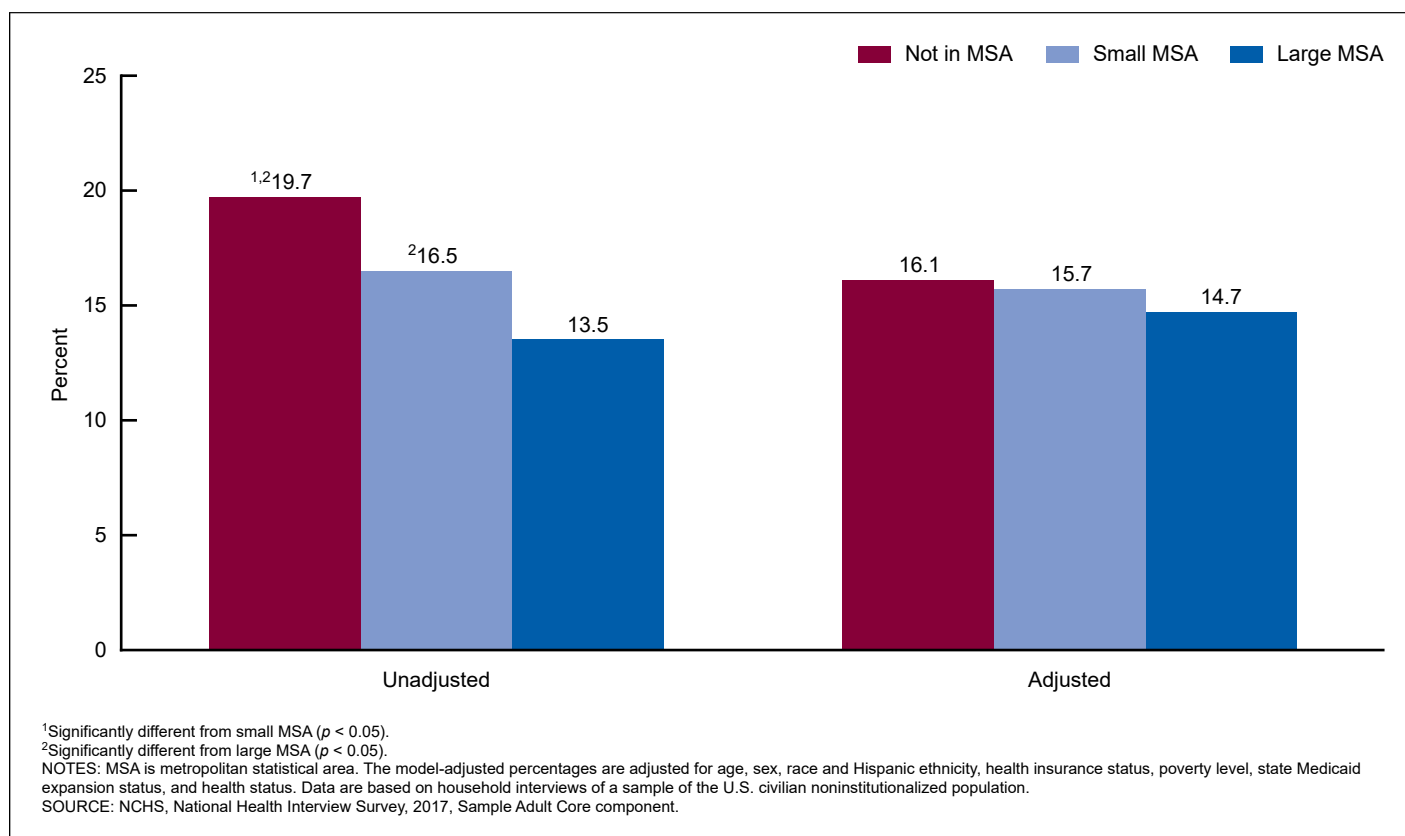


Figure 6. Percentage and model-adjusted percentage of adults aged 18–64 who were in families having problems paying medical bills in past 12 months, by metropolitan statistical area status: United States, 2017

this association was reversed after adjustment. This finding is supported by several other studies, which have found that rural residents were less likely to delay or forgo care due to cost compared with urban residents after adjusting for characteristics such as poverty level and insurance coverage (6,16). Ziller et al. suggest that differences in income and insurance coverage by urbanicity may explain the reversal of this association (16).

This study has shown that adults not living in an MSA are more likely to have financial burden associated with their health care and reduced access to or use of health care services compared with those in large MSAs. However, the differences in the measures examined may be due to differential distributions of poverty levels, insurance coverage status, or other sociodemographic or health characteristics between the MSA status categories, rather than MSA status itself.

This report is not without some limitations. First, NHIS responses are self-reported and, therefore, may be subject to recall bias. Second, several measures of utilization and financial burden ask about the respondent's experience in the past 12 months, while insurance status and MSA status are measured at the time of interview. Respondents may have acquired, switched, or dropped health insurance coverage or may have moved during the 12-month recall period, so that their status at the time of interview may not represent their health insurance status when using health care over the previous 12 months. Third, the adjusted models did not control for measures such as provider shortage areas, which particularly affect access to care in rural areas (5). Finally, this study stratified the population into those living in large MSAs, small MSAs, and not living in MSAs. This does not allow for examination into further differences between smaller groups within metropolitan classifications, but it does permit exploring more detail than a comparison between those living in urban and rural areas, as measured dichotomously. Despite these limitations, NHIS can be a useful tool to examine differences in health care access, utilization, and financial burden by urbanicity.

References

1. Meit M, Knudson A, Gilbert T, Yu ATC, Tanenbaum E, Ormson E, et al. The 2014 update of the rural–urban chartbook. Bethesda, MD: Rural Health Reform Policy Research Center. 2014.
2. Shaw KM, Theis KA, Self-Brown S, Roblin DW, Barker L. Chronic disease disparities by county economic status and metropolitan classification, Behavioral Risk Factor Surveillance System, 2013. *Prev Chronic Dis* 13:E119. 2016.
3. Matthews KA, Croft JB, Liu Y, Lu H, Kanny D, Wheaton AG, et al. Health-related behaviors by urban–rural county classification—United States, 2013. *MMWR Surveill Summ* 66(5):1–8. 2017.
4. Probst JC, Laditka SB, Wang JY, Johnson AO. Effects of residence and race on burden of travel for care: Cross sectional analysis of the 2001 US National Household Travel Survey. *BMC Health Serv Res* 7:40. 2007.
5. Council on Graduate Medical Education. Tenth report: Physician distribution and health care challenges in rural and inner-city areas. 1998. Available from: <https://www.hrsa.gov/advisorycommittees/bhpradvisory/cogme/reports/tenthreport.pdf>.
6. Hartley D, Quam L, Lurie N. Urban and rural differences in health insurance and access to care. *J Rural Health* 10(2):98–108. 1994.
7. Anderson RM, Davidson PL, Baumeister SE. Chapter 2: Improving access to care. In: Kominski GF, editor. *Changing the U.S. health care system: Key issues in health services policy and management*. San Francisco, CA: Jossey-Bass, 33–69. 2013.
8. National Center for Health Statistics. 2017 National Health Interview Survey (NHIS) public use data release: Survey description. 2018. Available from: https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2017/srvydesc.pdf.
9. Office of Management and Budget. Revised delineations of metropolitan statistical areas, micropolitan statistical areas, and combined statistical areas, and guidance on uses of the delineations of these areas. OMB Bulletin No. 13–01. Washington, DC. 2013.
10. Hart LG, Larson EH, Lishner DM. Rural definitions for health policy and research. *Am J Public Health* 95(7):1149–55. 2005.
11. Clarke TC, Norris T, Schiller JS. Early release of selected estimates based on data from the 2018 National Health Interview Survey. National Center for Health Statistics. 2019. Available from: <https://www.cdc.gov/nchs/nhis/releases/released201905.htm>.
12. National Center for Health Statistics. Technical notes for summary health statistics tables: National Health Interview Survey. 2019. Available from: https://www.cdc.gov/nchs/data/nhis/SHS_Tech_Notes.pdf.
13. Ward BW, Schiller JS. Prevalence of multiple chronic conditions among US adults: Estimates from the National Health Interview Survey, 2010. *Prev Chronic Dis* 10:E65. 2013.
14. Soni A, Hendryx M, Simon K. Medicaid expansion under the Affordable Care Act and insurance coverage in rural and urban areas. *J Rural Health* 33(2):217–26. 2017.
15. Parker JD, Talih M, Malec DJ, Beresovsky V, Carroll M, Gonzalez Jr JF, et al. National Center for Health Statistics data presentation standards for proportions. *National Center for Health Statistics. Vital Health Stat* 2(175). 2017. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf.
16. Ziller EC, Lenardson JD, Coburn AF. Rural adults delay, forgo, and strategize to afford their pre-ACA health care. Research and Policy Brief; no 61. Portland, ME: Maine Rural Health Research Center. 2015.

Table 1. Percent distribution of selected demographic and health characteristics among adults aged 18–64, by metropolitan statistical area status: United States, 2017

Selected characteristic	Not in MSA ¹ (95% CI)	Small MSA ² (95% CI)	Large MSA ³ (95% CI)
Total	100.0 ...	100.0 ...	100.0 ...
Age group†			
18–24	16.0 (14.0–18.1)	15.6 (14.3–17.0)	14.4 (13.3–15.5)
25–34	‡\$18.8 (17.3–20.4)	22.5 (21.3–23.7)	22.7 (21.6–23.8)
35–44	‡\$17.9 (16.5–19.4)	‡\$19.5 (18.3–20.7)	21.6 (20.6–22.6)
45–64	‡\$47.3 (44.8–49.8)	42.4 (40.8–44.0)	41.3 (40.0–42.6)
Sex			
Men	48.8 (46.4–51.1)	48.7 (47.2–50.3)	49.4 (48.1–50.6)
Women	51.2 (48.9–53.6)	51.3 (49.7–52.8)	50.6 (49.4–51.9)
Race and ethnicity†			
Hispanic	‡\$7.1 (4.4–10.8)	‡\$15.0 (12.8–17.5)	21.5 (20.3–22.8)
Non-Hispanic:			
White, single race	‡\$78.5 (72.9–83.4)	‡\$66.9 (64.3–69.5)	53.7 (52.1–55.4)
Black, single race	‡\$7.5 (4.7–11.3)	12.2 (10.5–14.1)	13.7 (12.7–14.9)
Asian, single race	‡\$1.2 (0.7–1.9)	‡\$3.3 (2.5–4.2)	8.8 (8.0–9.6)
Other and multiple races	‡\$5.6 (3.0–9.6)	2.6 (2.1–3.1)	2.2 (1.9–2.6)
Employment status†			
Employed	‡\$69.1 (66.5–71.6)	73.4 (72.1–74.7)	74.9 (73.8–76.1)
Unemployed	4.5 (3.5–5.7)	3.7 (3.1–4.3)	4.0 (3.5–4.5)
Not in workforce	‡\$26.4 (24.0–28.9)	‡\$22.9 (21.6–24.3)	21.1 (20.0–22.2)
State Medicaid expansion status†			
Expansion state	‡\$50.3 (41.7–59.0)	‡\$59.8 (55.2–64.3)	66.7 (65.0–68.2)
Nonexpansion state	‡\$49.7 (41.0–58.3)	‡\$40.2 (35.7–44.8)	33.3 (31.8–35.0)
Poverty level† ⁴			
138% FPL or less	‡\$24.8 (22.1–27.6)	‡\$21.3 (19.7–23.0)	17.2 (16.0–18.3)
More than 138% through 250% FPL	‡\$22.8 (21.2–24.5)	‡\$19.2 (17.9–20.6)	16.3 (15.4–17.3)
More than 250% through 400% FPL	‡\$22.3 (20.8–23.8)	‡\$21.3 (19.9–22.7)	18.1 (17.0–19.1)
More than 400% FPL	‡\$30.1 (27.5–32.8)	‡\$38.1 (36.2–40.1)	48.4 (47.0–49.9)
Health insurance status† ⁵			
Private	‡\$61.9 (58.9–64.9)	‡\$67.9 (65.9–69.8)	72.1 (70.8–73.3)
Medicaid or other public	‡\$16.0 (14.2–18.0)	13.5 (12.2–15.0)	12.4 (11.6–13.3)
Other coverage	‡\$5.7 (4.5–7.1)	‡\$5.9 (5.1–6.7)	4.0 (3.5–4.6)
Uninsured	‡\$16.3 (14.4–18.4)	12.7 (11.6–13.9)	11.5 (10.6–12.5)
Health status†			
Excellent or very good	‡\$56.9 (54.2–59.6)	‡\$62.7 (61.0–64.4)	66.3 (65.1–67.6)
Good	‡\$28.4 (26.2–30.5)	‡\$26.2 (24.8–27.7)	24.2 (23.2–25.3)
Fair or poor	‡\$14.7 (13.0–16.5)	‡\$11.1 (10.1–12.1)	9.4 (8.7–10.2)
Number of chronic conditions† ⁶			
None	‡\$45.9 (43.3–48.5)	‡\$51.4 (49.7–53.0)	56.3 (55.1–57.6)
1	28.0 (26.0–30.0)	27.5 (26.2–28.8)	26.8 (25.7–27.9)
2 or more	‡\$26.1 (24.1–28.2)	‡\$21.1 (19.9–22.4)	16.9 (15.9–17.9)

... Category not applicable.

† Chi-square test significant at $p < 0.05$.‡ Significantly different from large MSA within each measure at $p < 0.05$.§ Significantly different from small MSA within each measure at $p < 0.05$.¹Persons not living in a metropolitan statistical area (MSA).²Persons living in an MSA with a population of less than 1 million.³Persons living in an MSA with a population of 1 million or more.⁴Federal poverty level (FPL) is based on family income and family size, using the U.S. Census Bureau's poverty thresholds.

⁵Based on a hierarchy of mutually exclusive categories in the following order: private, Medicaid or other public, other coverage, and uninsured. Adults with more than one type of health insurance are assigned to the first appropriate category in the hierarchy. "Private" is any comprehensive private insurance plan (including health maintenance and preferred provider organizations), including those obtained through an employer, or those purchased directly, through local or community programs, or through the Health Insurance Marketplace or a state-based exchange. Private coverage excludes plans that pay for only one type of service, such as accidents or dental care. "Medicaid or other public" includes Medicaid, Children's Health Insurance Program (CHIP), and state-sponsored health plans. "Other coverage" includes other government-sponsored health plans, Medicare, and military plans. A person is defined as uninsured if they do not have any private health insurance, Medicare, Medicaid, CHIP, state-sponsored or other government-sponsored health plan, or military plan. A person is also defined as uninsured if they have only Indian Health Service coverage or only a private plan that pays for one type of service, such as accidents or dental care.

⁶Respondents were asked about the following 10 selected chronic conditions: hypertension, coronary heart disease, stroke, diabetes, cancer, arthritis, hepatitis, chronic obstructive pulmonary disease (COPD), weak or failing kidneys during the past 12 months, and current asthma. COPD is defined as ever having COPD or emphysema or having chronic bronchitis during the past 12 months. Unless a time frame is noted, chronic conditions are based on the respondents reporting ever being told by a doctor or other health care professional that they had the condition.

NOTES: CI is confidence interval. Data are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.

SOURCE: NCHS, National Health Interview Survey, 2017, Family Core and Sample Adult Core components.

Table 2. Unadjusted and model-adjusted percentages of adults aged 18–64, by selected measures of health care access and utilization and metropolitan statistical area status: United States, 2017

Measure of health care access or use	Unadjusted			Model adjusted ¹		
	Not in MSA ² (95% CI)	Small MSA ³ (95% CI)	Large MSA ⁴ (95% CI)	Not in MSA ² (95% CI)	Small MSA ³ (95% CI)	Large MSA ⁴ (95% CI)
Usual place to go for care ⁵	84.9 (82.8–86.9)	83.0 (81.6–84.3)	83.5 (82.4–84.5)	†‡86.4 (84.6–88.0)	83.4 (82.1–84.6)	83.1 (82.1–84.1)
Seen or talked to a health care professional in past 12 months	†80.5 (78.1–82.8)	82.0 (80.6–83.3)	83.5 (82.5–84.4)	†81.0 (78.9–82.9)	82.1 (80.8–83.4)	83.5 (82.5–84.4)
Emergency room visit in past 12 months	†21.3 (19.4–23.3)	†19.0 (17.5–20.5)	16.5 (15.6–17.5)	18.4 (16.9–20.0)	18.1 (16.8–19.5)	17.5 (16.6–18.5)
Unmet medical need due to cost in past 12 months	†12.8 (11.0–14.7)	11.4 (10.4–12.5)	10.2 (9.5–10.9)	†9.7 (8.4–11.1)	10.7 (9.9–11.7)	11.4 (10.6–12.2)
Unable to afford prescriptions in past 12 months	†‡8.9 (7.6–10.4)	†7.1 (6.3–7.8)	5.8 (5.2–6.5)	6.7 (5.8–7.8)	6.7 (6.0–7.3)	6.4 (5.8–7.1)
Problems paying medical bills in past 12 months	†‡19.7 (17.8–21.7)	†16.5 (15.3–17.8)	13.5 (12.6–14.5)	16.1 (14.6–17.7)	15.7 (14.6–16.8)	14.7 (13.8–15.7)

† Significantly different from large MSA within each measure at $p < 0.05$.

‡ Significantly different from small MSA within each measure at $p < 0.05$.

¹Model adjusted for age, sex, race and ethnicity, health insurance status, state Medicaid expansion status, poverty level, and health status.

²Persons not living in a metropolitan statistical area (MSA).

³Persons living in an MSA with a population of less than 1 million.

⁴Persons living in an MSA with a population of 1 million or more.

⁵Adults who reported having the hospital emergency room as their usual place for medical care are defined as not having a usual place of care.

NOTES: CI is confidence interval. Data are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.

SOURCE: NCHS, National Health Interview Survey, 2017, Family Core and Sample Adult Core components.

Table. Adjusted odds ratios for selected measures of health care access and utilization among adults aged 18–64: United States, 2017

Selected characteristic	Usual place to go for care ¹	Seen or talked to health care professional in past 12 months	Emergency room visit in past 12 months	Unmet medical need due to cost in past 12 months	Unable to afford prescriptions in past 12 months	Problems paying medical bills in past 12 months
MSA status ²						
Odds ratio (95% CI)						
Not in MSA ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Small MSA	†0.76 (0.62–0.92)	1.09 (0.92–1.29)	0.98 (0.85–1.13)	1.14 (0.94–1.40)	0.99 (0.81–1.21)	0.96 (0.83–1.12)
Large MSA	†0.74 (0.61–0.90)	†1.22 (1.03–1.44)	0.93 (0.82–1.07)	†1.23 (1.01–1.49)	0.94 (0.77–1.16)	0.89 (0.77–1.03)
Age group						
18–24	†0.47 (0.39–0.56)	†0.72 (0.61–0.87)	†1.31 (1.11–1.55)	†0.76 (0.61–0.94)	†0.65 (0.48–0.87)	1.21 (0.99–1.47)
25–34	†0.42 (0.36–0.48)	†0.65 (0.57–0.74)	†1.24 (1.09–1.42)	1.01 (0.85–1.18)	0.97 (0.79–1.19)	1.10 (0.95–1.27)
35–44	†0.67 (0.58–0.78)	†0.71 (0.63–0.81)	1.10 (0.97–1.25)	0.97 (0.83–1.14)	0.95 (0.79–1.15)	1.06 (0.92–1.20)
45–64 ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Sex						
Men ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Women	†1.89 (1.69–2.12)	†2.20 (1.97–2.45)	†1.32 (1.20–1.44)	†1.27 (1.13–1.43)	†1.62 (1.39–1.89)	†1.19 (1.06–1.33)
Race and ethnicity						
Hispanic	0.94 (0.80–1.11)	†0.78 (0.67–0.91)	†0.73 (0.62–0.85)	†0.59 (0.49–0.71)	0.85 (0.67–1.09)	0.94 (0.79–1.12)
Non-Hispanic:						
White, single race ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Black, single race	1.13 (0.93–1.37)	1.08 (0.89–1.31)	†1.24 (1.06–1.44)	†0.67 (0.55–0.80)	0.92 (0.74–1.15)	†1.34 (1.15–1.56)
Asian, single race	0.87 (0.68–1.10)	†0.74 (0.60–0.91)	†0.56 (0.44–0.71)	†0.43 (0.31–0.60)	†0.41 (0.25–0.68)	†0.49 (0.35–0.69)
Other and multiple races	0.99 (0.73–1.34)	0.85 (0.63–1.15)	1.26 (0.98–1.62)	0.91 (0.66–1.27)	1.12 (0.77–1.65)	1.25 (0.88–1.78)
Health insurance status ⁴						
Private ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Medicaid or other public	0.99 (0.80–1.22)	0.92 (0.76–1.12)	†1.68 (1.44–1.97)	†0.81 (0.65–1.00)	1.16 (0.89–1.52)	†0.77 (0.64–0.93)
Other coverage	†1.33 (1.01–1.76)	†1.90 (1.37–2.64)	†1.40 (1.16–1.69)	1.04 (0.83–1.30)	†1.42 (1.07–1.89)	0.96 (0.78–1.18)
Uninsured	†0.16 (0.14–0.19)	†0.23 (0.20–0.27)	1.10 (0.93–1.29)	†4.66 (3.96–5.48)	†3.41 (2.74–4.24)	†1.88 (1.59–2.22)
State Medicaid expansion status						
Expansion state ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Nonexpansion state	†0.88 (0.78–1.00)	1.03 (0.92–1.15)	0.98 (0.89–1.09)	1.05 (0.93–1.19)	†1.18 (1.02–1.38)	†1.36 (1.22–1.52)

See footnotes at end of table.

Table. Adjusted odds ratios for selected measures of health care access and utilization among adults aged 18–64: United States, 2017—Con.

Selected characteristic	Usual place to go for care ¹	Seen or talked to health care professional in past 12 months	Emergency room visit in past 12 months	Unmet medical need due to cost in past 12 months	Unable to afford prescriptions in past 12 months	Problems paying medical bills in past 12 months
Odds ratio (95% CI)						
Poverty level ⁵						
138% FPL or less	†0.53 (0.44–0.64)	†0.68 (0.57–0.81)	†1.55 (1.32–1.82)	†2.19 (1.78–2.70)	†2.24 (1.63–3.06)	†2.28 (1.89–2.75)
More than 138% through 250% FPL	†0.69 (0.58–0.82)	†0.71 (0.61–0.83)	†1.46 (1.25–1.69)	†2.11 (1.76–2.53)	†2.18 (1.68–2.83)	†2.81 (2.40–3.30)
More than 250% through 400% FPL	†0.69 (0.59–0.81)	†0.68 (0.59–0.79)	†1.22 (1.05–1.41)	†1.94 (1.64–2.31)	†1.95 (1.48–2.56)	†2.14 (1.82–2.52)
More than 400% FPL ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Health status						
Excellent or very good ³	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...	1.00 ...
Good	1.07 (0.94–1.22)	†1.16 (1.03–1.32)	†1.76 (1.57–1.97)	†1.99 (1.74–2.27)	†2.21 (1.85–2.65)	†1.91 (1.67–2.18)
Fair or poor	1.16 (0.95–1.41)	†2.44 (1.94–3.06)	†3.33 (2.88–3.85)	†4.08 (3.45–4.84)	†5.30 (4.29–6.54)	†3.55 (3.02–4.18)

... Category not applicable.

† Significantly different from reference ($p < 0.05$).

¹Adults who reported having the hospital emergency room as their usual place for medical care are defined as not having a usual place of care.

²Not in MSA consists of persons not living in a metropolitan statistical area (MSA). Small MSAs have a population of less than 1 million. Large MSAs have a population of 1 million or more.

³Reference group.

⁴Based on a hierarchy of mutually exclusive categories in the following order: private, Medicaid or other public, other coverage, and uninsured. Adults with more than one type of health insurance are assigned to the first appropriate category in the hierarchy.

"Private" is any comprehensive private insurance plan (including health maintenance and preferred provider organizations), including those obtained through an employer, or those purchased directly, through local or community programs, or through the Health Insurance Marketplace or a state-based exchange. Private coverage excludes plans that pay for only one type of service, such as accidents or dental care. "Medicaid or other public" includes Medicaid, Children's Health Insurance Program (CHIP), and state-sponsored health plans. "Other coverage" includes other government-sponsored health plans, Medicare, and military plans. A person is defined as uninsured if they do not have any private health insurance, Medicare, Medicaid, CHIP, state-sponsored or other government-sponsored health plan, or military plan. A person is also defined as uninsured if they have only Indian Health Service coverage or only a private plan that pays for one type of service, such as accidents or dental care.

⁵Federal poverty level (FPL) is based on family income and family size, using the U.S. Census Bureau's poverty thresholds.

NOTES: CI is confidence interval. Data are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.

SOURCE: NCHS, National Health Interview Survey, 2017, Family Core and Sample Adult Core components.

**U.S. DEPARTMENT OF
HEALTH & HUMAN SERVICES**

Centers for Disease Control and Prevention
National Center for Health Statistics
3311 Toledo Road, Room 4551, MS P08
Hyattsville, MD 20782-2064

FIRST CLASS MAIL
POSTAGE & FEES PAID
CDC/NCHS
PERMIT NO. G-284

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

For more NCHS NHSRs, visit:
<https://www.cdc.gov/nchs/products/nhsr.htm>.



National Health Statistics Reports ■ Number 134 ■ December 4, 2019

Suggested citation

Terlizzi EP, Cohen RA. Differences in select measures of health care access, utilization, and financial burden by urbanicity, 2017. National Health Statistics Reports; no 134. Hyattsville, MD: National Center for Health Statistics. 2019.

Copyright information

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

National Center for Health Statistics

Jennifer H. Madans, Ph.D., *Acting Director*
Amy M. Branum, Ph.D., *Acting Associate
Director for Science*

Division of Health Interview Statistics

Stephen J. Blumberg, Ph.D., *Director*
Anjel Vahratian, Ph.D., M.P.H., *Associate
Director for Science*

For e-mail updates on NCHS publication releases, subscribe online at: <https://www.cdc.gov/nchs/govdelivery.htm>.
For questions or general information about NCHS: Tel: 1-800-CDC-INFO (1-800-232-4636) • TTY: 1-888-232-6348
Internet: <https://www.cdc.gov/nchs> • Online request form: <https://www.cdc.gov/info>
DHHS Publication No. 2020-1250 • CS311686