## ALEPS

MEPS Chartbook No. I 3
Medical Expenditure Panel Survey

## Health Care in Urban and Rural Areas, Combined Years 1998-2000



Demographic characteristics

Use and expenses

The estimates in this report are based on the most recent data available from MEPS at the time the report was written. However, selected elements of MEPS data may be revised on the basis of additional analyses, which could result in slightly different estimates from those shown here. Please check the MEPS Web site for the most current file releases-

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- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.

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This chartbook examines the differences in health care access, use, and expenses between urban and rural areas. Counties are classified along the urban-rural continuum according to whether they are metropolitan statistical areas (MSAs) and, if not, their proximity to an MSA. An MSA is a large population nucleus with a high degree of economic and social interaction. The categories along the continuum are metro (counties in an MSA), near-metro, near-rural, and rural. The last category includes only the most rural areas in the Nation, home to about 3.2 million Americans. For more information on the classification, see the Definitions of Terms section at the end of this chartbook.

Some highlights of information in this chartbook follow.

The percent of people under 65 who were uninsured was not significantly different in rural counties than in the others. People living in near-rural counties were more likely to be uninsured for an entire year than people living in metro or near-metro counties.

Uninsured residents of rural counties were more likely than their metro counterparts to have a usual source of care.

Among both non-elderly and elderly people with ambulatory expenses, residents of rural counties had the fewest visits per year. This difference was especially prominent for the elderly, among whom rural residents had only half as many visits each year as metro residents ( 5.5 visits versus 10.9).

Among elderly people with ambulatory expenses, residents of rural counties had the lowest average annual expenses: $\$ 662$, compared with $\$ 1,432$ or higher in the other areas.

The percent of the population under 65 years in rural counties who had expenses for prescription medicines was not significantly different from the percent in other counties.

The likelihood of having dental expenses generally declined with increasing rurality. For non-elderly people with dental expenses, the average annual number of visits did not vary significantly among the urban-rural categories. However, elderly rural residents with dental expenses had an average of one fewer dental visit per year than their counterparts in metroplitan areas.

## Introduction <br> Data in This Report

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Definitions of Terms

The four urban-rural categories used in this report are based on a number of factors: whether a county is in a metropolitan statistical area, proximity to a metropolitan statistical area, and population size of the largest city in the county. See the Definitions of Terms section for more details.

This chartbook and other MEPS publications are available electronically on the MEPS Web site at: http://www.meps.ahrq.gov/.

The comparisons in this chartbook are based on estimated annual averages for the period 1998-2000 using data from MEPS. Data for these three years were combined to provide larger sample sizes that would improve the precision of rural county estimates and the ability to detect significant differences with other county types. Expense data for 1998 and 1999 were adjusted to 2000 dollars based on the Consumer Price Index for all goods and services.

MEPS surveys a nationally representative sample of households for information on the health status, health care use and expenses, and health insurance coverage of individuals and families in the U.S. civilian noninstitutionalized population. Data for this report come from MEPS public use files HC-028 (1998 Full Year Consolidated File), HC-038 (1999 Full Year Consolidated File), and HC-050 (2000 Full Year Consolidated File). The utilization information is based on medical events reported by households, and
the payment information is based on data collected from both households and medical providers.

Expenses in MEPS are payments to hospitals, physicians, and other health care providers for services reported by the survey respondents. They were specifically defined as direct payments by individuals, private insurance, Medicaid, Medicare, and other sources for care provided during the year.

MEPS is based on a complex sample design, so survey estimates are subject to statistical sampling error. Unless otherwise noted, only differences between groups that are statistically significant at the 0.05 level (not likely to be attributable to sampling error) are noted in the text.

In a few instances, differences that appear large may not be statistically significant because estimates for rural areas are based on much smaller samples, so they can have relatively large standard errors.

## Demographic Characteristics

Variations in factors such as age, sex, socioeconomic status, and physical health across geographic areas can provide insight into differences in health care use and expenses. For example, people living in rural areas are more likely to be elderly and more likely to have activity limitations than residents of metro areas. Demographic characteristics as well as urban-rural location are related to differences in health care access and use. This section examines the extent to which demographics and health status differ across the four urbanrural categories.

## Proportionately more elderly in rural than metro counties

- There were proportionately more elderly people in rural counties (18.8\%) than in metro counties (11.9\%). However, differences between rural counties and other county types were not statistically significant.
- The percent of residents ages 18 44 was lowest in rural counties ( $31.4 \%$, compared to $36.0 \%$ $40.2 \%$ for the other three groups).
- Approximately one-quarter of the population were children under 18 in all four categories.
- The proportion of people ages 45-64 did not vary significantly by type of county.



## Higher proportion of elderly in rural counties are women

- While there are more elderly women than men in all county types, the proportion of elderly people who were women was significantly higher in rural counties ( $63.0 \%$ ) than in nearrural counties (54.1\%).
- Among the population under 65 years of age, there were approximately equal numbers of males and females regardless of urban-rural location.

Percent of females in population


## Educational attainment generally lower for rural residents

- Among non-elderly adults, less than one-third of rural residents had post-high-school education (31.4\%), compared to $53.6 \%$ in metro counties and $42.5 \%$ in near-rural counties. The proportion of non-elderly adults with post-high-school education
was higher in metro areas than in near-metro counties.
- About half of the elderly in rural counties had less than a high school education, compared with only about a third of the elderly in metro counties.

Age 21-64


## Higher proportion of poor/near poor in less urban counties

- Approximately one-quarter of non-elderly people in near-rural and rural areas were in the poor/near poor income category, having income less than $125 \%$ of the poverty line. In comparison, only about $16 \%$ of non-elderly people in the two more urban areas (metro and near-metro) were poor or near poor.
- Among people under 65, only $58.0 \%$ of residents in near-rural counties and $53.2 \%$ in rural counties were in the high/middle income category (income over $200 \%$ of the poverty line), compared to $72.4 \%$ of the nonelderly residents in metro areas and $69.5 \%$ of those in near-metro areas.
- Among the elderly, residents of counties in near-rural and rural areas were more likely to have incomes in the poor/near poor category ( $22.0 \%$ and $24.6 \%$ ), compared to $15.2 \%$ of those in metro areas.
- Metro areas had the largest proportion of elderly residents in the high/middle income group, $65.0 \%$, compared to $49.8 \%-59.0 \%$ in the other areas.

Under age 65


Age 65 and over

## Metro counties have higher proportion of minorities

- There were proportionately more racial and ethnic minorities in metro areas ( $31.5 \%$ ) than in rural counties (9.1\%) or near-metro counties (12.0\%).



## Metro residents less likely to be in fair or poor health

- Among the non-elderly, metro residents were less likely to have fair or poor health ( $7.4 \%$ ) than near-metro residents (9.7\%).
- Although the proportion of nonelderly people in fair or poor health appears to be highest in rural counties ( $11.4 \%$ ), it is not significantly higher than for other groups.
- Elderly residents in near-metro and near-rural counties were somewhat more likely than metro residents to have fair or poor health ( $28.9 \%$ and $30.3 \%$, compared to $24.2 \%$ ).
- While the percent of elderly people in fair or poor health appears to be lower in rural counties than in near-metro or near-rural counties, these differences are not statistically significant.

Percent in fair or poor health


## Rural residents more likely to have activity limitation

- About one in five non-elderly residents of rural counties (21.5\%) had one or more activity limitations, a notably higher proportion than for metro residents ( $12.3 \%$ ). The percent of non-elderly people with limitations was also higher for near-metro ( $17.2 \%$ ) and nearrural counties ( $16.4 \%$ ) than for metro residents.

Percent with activity limitation


- Among the elderly, residents of rural counties were much more likely to have activity limitations (72.9\%) than residents of either metro counties (53.9\%) or nearmetro counties ( $61.8 \%$ ).

Access to Care
Adequate access to health care services can significantly influence health care use and health outcomes. There has been research that suggests rural residents have less access to health care services than residents of more densely populated areas. This section examines variations in the likelihood of having health insurance coverage and the likelihood of having a usual source of care-both of which can affect access to health careacross the urban-rural spectrum.

- Health insurance plays a critical role in ensuring that Americans obtain timely medical care and have protection against expensive health care costs.
- Another measure used to reflect access to care is whether people have a usual source of care-a person or place they usually go to if they are sick or need advice about their health. Lacking a usual source of care may also have important implications for the quality and continuity of care received.


## Percent uninsured higher in near-rural counties

- Among the population under 65 years of age, residents of nearrural counties were more likely to be uninsured for an entire year (18.5\%) than those living in metro counties ( $12.7 \%$ ) or nearmetro counties (12.0\%).
- The percent uninsured in rural counties ( $15.2 \%$ ) did not differ significantly from the other groups.

Percent uninsured, under age 65


## About one-third of the elderly in all county types lack Medicare supplemental insurance

- The likelihood of not having Medicare supplemental coverage was similar for metro, nearmetro, and near-rural counties, ranging from $29.4 \%$ to $32.8 \%$.
- Although the proportion of elderly people without Medicare supplemental coverage apppears highest in rural counties (38.6\%), the difference from other county types is not significant.

Percent without supplemental coverage, age 65 and over


## Elderly and children show little variation across areas in having a usual source of care

- For each of the four urban-rural categories, only about 7 percent of adults 65 and over lacked a usual source of care.
- Regardless of type of county, about 1 of every 10 children under 18 lacked a usual source of care.
- Among adults 18-44 years, lacking a usual source of care was more common for residents of metro counties (30.1\%) and nearrural counties ( $27.2 \%$ ) than for those living in near-metro counties (20.1\%).
- For adults ages 45-64, lacking a usual source of care was more

Percent without a usual source of care
common for metro residents ( $15.8 \%$ ) than for those living in near-metro counties ( $11.7 \%$ ).

- For all age groups, the percent of people without a usual source of care was not significantly different for rural counties than for other areas.
- Regardless of county type, people ages 18-44 were the least likely to have a usual source of care.



## Uninsured metro residents most likely to lack a usual source of care

- Uninsured people under 65 were more likely to lack a usual source of care if they lived in more urban areas, with the proportion ranging from $48.3 \%$ in metro areas to $28.7 \%$ in rural counties.
- There was less variation across urban-rural categories for the insured than for the uninsured. Among insured people under 65, residents of metro and near-rural counties were more likely to lack a usual source of care (about $16 \%$ ) than near-metro residents (11.4\%).

Percent without a usual source of care, under age 65


## Use and Expenses

While the likelihood of using health care, as well as the amount of health care expenses, are associated with many individual and demographic characteristics, population density and geographic proximity to health care providers are also factors. Some studies suggest that rural residents have less access to primary care, specialty care, and other health services than residents of counties with a larger population or near metropolitan areas. This section examines variations in health care use and expenses across the four county types for three types of services: ambulatory care (office-based and hospital outpatient visits), prescription medicines, and dental services.

For each type of service, average expenses are shown for people having any expenses during the year. Charts illustrating the percent of the population with any expenses are also shown. These charts can generally be interpreted as the proportion of people who had at least one visit during the year since only a negligible portion of the population visits a health care provider without incurring expenses.

## Ambulatory Care

Ambulatory care includes the treatment of acute conditions and chronic diseases, both preventive and diagnostic services. It generally serves as the entry point for most health care in the United States. The majority of Americans have at least one visit each year to a health care professional in an ambulatory
setting. The outcome for those who cannot obtain these services may be poorer general health and quality of life. While most Americans have ambulatory care expenses during the year, this section illustrates some noteworthy variations in levels of use and expenses across urban-rural categories.

## Percent of people with ambulatory care expenses fairly similar across areas

- Among the non-elderly population, near-metro residents were slightly more likely to have ambulatory expenses (71.0\%) than those living in metro counties ( $67.2 \%$ ) or near-rural counties ( $65.5 \%$ ). However, the proportion of the rural group with expenses ( $65.1 \%$ ) was not significantly different from the other groups.
- Regardless of urban-rural category, approximately 9 of every 10 elderly people had ambulatory expenses.

Percent with ambulatory care expenses


## Rural residents have fewer ambulatory visits

- Among people with an ambulatory expense, residents of rural counties had the lowest average number of ambulatory visits per year. This was true in both the elderly and non-elderly groups, but the difference was especially prominent for the elderly.

Average number of ambulatory care visits'

$\overline{{ }^{\prime}}$ For people with ambulatory expenses.

- Among the elderly with ambulatory expenses, rural residents had about half as many ambulatory visits each year as metro residents (5.5 vs. 10.9 visits).
- Among the non-elderly with ambulatory expenses, rural residents had an average of about one fewer ambulatory visit per year than those in other counties (5.1 vs. 6.0-6.3).


## Area differences in ambulatory visits greater for people with activity limitation

- Among non-elderly people with ambulatory expenses, those in rural counties had a lower average number of ambulatory care visits than residents of more urban places. This difference was especially pronounced for people with at least one activity limitation.
- For the non-elderly with at least one limitation and some expenses for ambulatory care, the estimated average number of visits was significantly lower in rural counties (8.1) than in metro (12.7) or near-metro counties (11.3).
- For the non-elderly with no limitations and some expenses for ambulatory care, the average number of ambulatory visits was lower in rural counties (4.3) than in metro counties (5.2).
- Similar comparisons for the elderly are not shown because of limited sample size for the rural group.


[^0]
## People in rural counties have lower ambulatory expenses

- Among both non-elderly and elderly people with ambulatory expenses, residents of rural counties had the lowest average annual expenses. Differences from other county types were especially large for the elderly.
- Among the elderly with ambulatory expenses, the average expense was less than half as large for people in rural counties $(\$ 662)$ as for people in the other urban-rural categories ( $\$ 1,432$ \$1,687).
- Among the non-elderly with ambulatory expenses, residents of rural counties had lower average ambulatory expenses (\$609) than those in the other urban-rural categories (\$807-\$946).


## Ambulatory expenses for children similar across areas

- Average ambulatory expenses for children under 18 with expenses were similar across the urbanrural categories (approximately $\$ 400$ ).
- Among people ages 18-44 with ambulatory expenses, those in rural counties had lower average ambulatory expenses (\$544) than those in the other categories (\$833-\$895).
- Among people ages 45-64 with ambulatory expenses, those living in near-rural counties had higher average ambulatory expenses $(\$ 1,568)$ than those living in rural counties (\$916).

Average annual ambulatory expense,' under age 65


## Ambulatory expenses for males under 65 lowest in rural counties

- Non-elderly males with ambulatory expenses who lived in rural counties had substantially lower average expenses (\$412) than their counterparts in the other urban-rural categories (ranging from \$755 to \$919).
- Non-elderly females with ambulatory expenses showed less variation than males in average expenses across urban-rural categories. However, non-elderly females living in rural counties had lower ambulatory expenses than those in near-rural counties (\$765 vs. \$968).
- Average ambulatory expenses in rural counties were nearly twice as large for females as for males. There was a smaller gender difference in metro counties and no significant difference by gender in the other two categories.
- Similar comparisons for the elderly are not shown because of limited sample size for the rural group.


[^1]
## Prescription Medicines

Outpatient prescription medicines play an ever-increasing role in the health care system of the United States. The share of overall health spending in the U.S. community population that goes for prescription medicines has risen rapidly in recent years, from about 12 percent in 1996 to about 18 percent in 2001. Prescription medicines are a key health policy issue, as evidenced by concerns about the rising costs of prescriptions and the recent
enactment of a Medicare drug benefit. Along with other health care provider shortages in rural places, there are fewer pharmacists per capita in rural places than in more populated settings.
Additionally, there may be differences in prescribing patterns in the most rural places because there are fewer health care providers. This section provides data comparing prescription medicine use and expenses across urban-rural categories.

## Percent of elderly with prescription medicine expenses similar across areas

- In all of the urban-rural categories, approximately 9 in 10 elderly residents had expenses for prescribed medicines. Elderly residents of rural counties were slightly more likely to have prescription medicine expenses (91.2\%) than the elderly in metro counties (87.6\%).
- Non-elderly residents of nearmetro counties were slightly more likely to have expenses for prescribed medicines (64.4\%) than those living in metro counties (57.7\%) or near-rural counties ( $59.2 \%$ ). The percent for rural counties did not differ significantly from the other groups.

Percent with prescription medicine expense


## Average prescription medicine expenses vary little across urban-rural continuum

- Among the non-elderly with expenses for prescribed medicines, annual per-person expenses were slightly higher for near-metro residents (\$487) than for metro residents ( $\$ 421$ ) or near-rural residents (\$417). The average for rural residents (\$495)
was not significantly different from the average for the other types of counties.
- Among elderly people with prescription expenses, the average annual expense per person did not vary significantly across the urban-rural categories.
- For each urban-rural category, the average annual prescription medicine expense among those with such expenses was at least twice as high for elderly as nonelderly people.

Average annual prescription medicine expense'


[^2]
## Dental Care

Access to and use of dental care has been consistently identified as an important factor in a person's overall health. For example, periodontal disease has been identified as a potential risk factor associated with a number of health conditions, including cardiovascular disease, cerebrovascular disease, diabetes, and osteoporosis. Factors such as
socioeconomic status, insurance coverage, transportation availability, number of dentists in the area, and presence of community dental care programs have been found to be associated with disparities in dental care use and oral health status. This section of the chartbook compares dental care use and expenses across the four urban-rural categories.

## Residents of rural counties less likely to have dental expenses

- Among the non-elderly, 31.4\% of those in rural counties had dental expenses, a significantly lower proportion than for residents of metro or near-metro counties (approximately $41 \%$ each).
- Among individuals 65 and over, the likelihood of having dental expenses generally declined with increasing rurality, ranging from $42.1 \%$ in metro counties to $20.4 \%$ in rural counties.

Percent with dental expense


## Frequency of dental visits lower for rural elderly

- Among the elderly with dental expenses, residents of rural counties had an average of one fewer dental visit per year than metro residents ( 1.9 vs. 2.9).
- The average annual number of dental visits for non-elderly people with expenses for dental care did not vary significantly among the urban-rural categories.


## Average number of dental visits'



[^3]
## Average expenses for dental care higher in metro counties

- Among the non-elderly with dental expenses, average annual expenses per person were higher for metro residents (\$482) than for residents of near-metro areas (\$391) or rural counties (\$308).
- Average annual dental expenses for elderly metro residents with such expenses ( $\$ 543$ ) were substantially higher than expenses for elderly residents of near-rural counties (\$381).

Average annual dental expense '


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Urban-Rural Categories
There is a lack of consensus in health services research about what constitutes a rural area. This chartbook examines urbanrural variations by four levels of urbanization: one for counties comprising metropolitan statistical areas (MSAs) and three for counties that are not classified as part of an MSA. An MSA is generally comprised of counties with a large urban center(s) along with other counties that are considered to have a high degree of
geographic, economic, and/or social integration with the core urban center(s). The categories are described in Table A.

The four categories used in this report were derived from the Urban Influence Codes established by the U.S. Department of Agriculture. The main reason for creating these categories was to have a small number of categories to illustrate the relative continuum from most urban to most rural.

Table A. Urban-rural categories used in this report

| Chartbook <br> category | Urban <br> Influence <br> Code | MSA <br> status | Characteristics/ <br> proximity | Population |
| :--- | :--- | :--- | :--- | :--- | Metro | I | MSA | Large (central and <br> fringe counties) <br> Small | I million or more |
| :--- | :--- | :--- | :--- | :--- |

Note: MSA is metropolitan statistical area. Urban Influence Codes are established by the U.S. Department of Agriculture.


Figure A shows the distribution of the U.S. population in 2000 along this urbanrural continum.

It is important to note that urban-rural classification schemes cannot fully describe the characteristics of individual counties. Locations within a county may vary significantly. For example, some metropolitan counties may be large and have residents who live far from health services.

## Type-of-Service Categories

Health care services are categorized according to reports by survey respondents.

Ambulatory service expenses cover visits to medical providers seen in office-based settings or clinics, hospital outpatient departments, and clinics owned and operated by hospitals.

Prescription medicine expenses cover all prescribed medications that were initially purchased or refilled during 1998, 1999, or 2000, as well as diabetic supplies (some of which may have been purchased without a prescription).

Dental service expenses cover any type of dental care, including services provided by general dentists, dental hygienists, dental technicians, dental surgeons, orthodontists, endodontists, and periodontists.

## Population Characteristics

In general, population characteristics were measured as of December 31st of the year of study (1998, 1999, or 2000), or the last date that the sample person was part of the civilian noninstitutionized population living in the United States prior to December 31st of that year.

## Race/Ethnicity

Comparisons by race/ethnicity in this chartbook are based on the following two race/ethnicity groups: non-Hispanic white and all others. Sample size limitations prevented analysis using specific racial and ethnic groups.

Classification by race and ethnicity is based on information reported in MEPS for each family member. Respondents were asked if the race of the sample person was best described as American Indian, Alaska Native, Asian or Pacific Islander, black, white, or other. They were also asked if the sample person's main national origin or ancestry was Puerto Rican; Cuban; Mexican, Mexican American, or Chicano; other Latin American; or other Spanish. All persons whose main national origin or ancestry was reported as one of these Hispanic groups, regardless of racial background, are classified as other.

## Health Insurance Status

The health insurance categories in this chartbook are based on age and insurance coverage during the year of study (1998, 1999, or 2000). Individuals under 65 were classified as follows:

Any private bealth insurance includes individuals with coverage for hospital and physician care (other than Medicare, Medicaid, or other public hospital/physician coverage) at any time during the year. Persons with Armed Forces-related coverage-TRICARE-are also included because the coverage is similar to private insurance. Individuals who have only singleservice coverage for services such as dental and vision care are not included in this category.

## Public coverage only includes

 individuals who met both of the following criteria:- They were not covered by private insurance at any time during the year.
- They were covered by one of the following public programs at some point during the year: Medicare, Medicaid, or other public hospital/ physician coverage.
Uninsured includes individuals who were not covered by Medicare, TRICARE, Medicaid, other public hospital/physician coverage, or private hospital/physician coverage during the year of study.
Individuals covered by only noncomprehensive State-specific programs (e.g., Maryland Kidney Disease Program, Colorado Child Health Plan) or private single-service plans (e.g., coverage for dental or vision care only, coverage for accidents or specific diseases) are considered to be uninsured.

Individuals age 65 and older were classified as follows:

Medicare only includes individuals who were covered by Medicare at any point during the year but did not have private insurance or any other public insurance.

Medicare and private insurance includes individuals who had supplemental private insurance in addition to Medicare at some time during the year.

## Medicare and other public insurance

 includes individuals who had Medicaid or other public insurance in addition to Medicare but no private supplemental insurance at any time during the year.
## Income Category

Each person was classified according to the total income of his or her family in the given year. Within a household, all individuals related by blood, marriage, or adoption were considered to be a family. Personal income from all family members was summed to create family income. Possible sources of income included annual earnings from wages, salaries, bonuses, tips, and commissions; business and farm gains and losses; unemployment and Workers' Compensation; interest and dividends; alimony, child support, and other private cash transfers; private pension, IRA withdrawal, Social Security and veterans' payments; Supplemental Security Income and cash welfare payments from public assistance, Aid to Families with Dependent Children, and Aid to Dependent Children; gains or losses from estates, trusts, partnerships, $S$ corporations, rent, and royalties; and a small amount of other income.

Income category was determined by the ratio of family income to the Federal poverty threshold for the year of study, which varies by family size and age of head of family. The three income categories in the chartbook are defined as follows:

Poor and near poor includes persons in families with incomes less than or equal to $125 \%$ of the poverty line.

Low income includes persons in families with incomes greater than $125 \%$ and less than or equal to $200 \%$ of the poverty line.

Middle and high income includes persons in families with incomes over 200\% of the poverty line.

## Perceived Health Status

The MEPS respondent was asked to rate the health of each person in the family according to the following categories: excellent, very good, good, fair, and poor. For this report, the five health status categories were collapsed into the following two categories: excellent to good health and fair or poor health.

## Activity Limitation Status

A series of questions regarding activity limitations was asked about each family member. Any family member who had one limitation that falls into any of following groups was classified as having a limitation: an ADL (activity of daily living) limitation such as needing help with bathing or dressing; an IADL (instrumental activity of daily living) limitation such as needing help with shopping or laundry; physical difficulty such as problems climbing stairs, walking, or lifting objects; vision or hearing impairment.
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[^0]:    ${ }^{\mathrm{I}}$ For people with ambulatory expenses.

[^1]:    $\overline{{ }^{\text {For people with }} \text { ambulatory expenses. }}$

[^2]:    For people with prescription medicine expenses.

[^3]:    ${ }^{\prime}$ For people with dental expenses.

[^4]:    ${ }^{1}$ For people with dental expenses.
    *Estimate for rural counties not shown because the
    sample size was too small for reliable estimation.

