



Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2023

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Overview

Since 2007, the National Health Interview Survey (NHIS) Early Release Program has regularly released preliminary estimates of the percentages of adults and children living in homes with only wireless telephones (also known as cellular telephones, cell phones, or mobile phones). These estimates are the most up-to-date estimates available from the federal government concerning the size and characteristics of this population.

Estimates in this report are based on the second six months of 2023. During this time period, 76.0% of adults and 86.8% of children lived in wireless-only households.

NHIS data can also be used to estimate the percentage of adults who live in wireless-only households and have their own wireless telephone (wireless-only adults). For July-December 2023, 75.2% of adults were wireless-only adults. Demographic subgroups with the highest percentages of wireless-only adults include adults aged 25-29 (87.3%) and 30-34 (90.1%) (Figure), and adults renting their homes (86.2%).

NHIS Early Release Program

This report is published by the National Center for Health Statistics (NCHS) as part of the NHIS Early Release Program. It presents selected estimates of telephone coverage for the civilian noninstitutionalized U.S. population based on data from NHIS, along with comparable estimates from NHIS for the previous 2 years. The estimates are based on in-person interviews that are conducted throughout the year to collect information on health status, health-

related behaviors, and health care access and utilization. The survey also includes information about household telephones and whether anyone in the household has a wireless telephone.

To provide access to the most recent information from NHIS, estimates using the July-December 2023 data are being released prior to final data editing and final weighting. These estimates should be considered preliminary. Estimates produced using the final data files may differ slightly from those presented here.

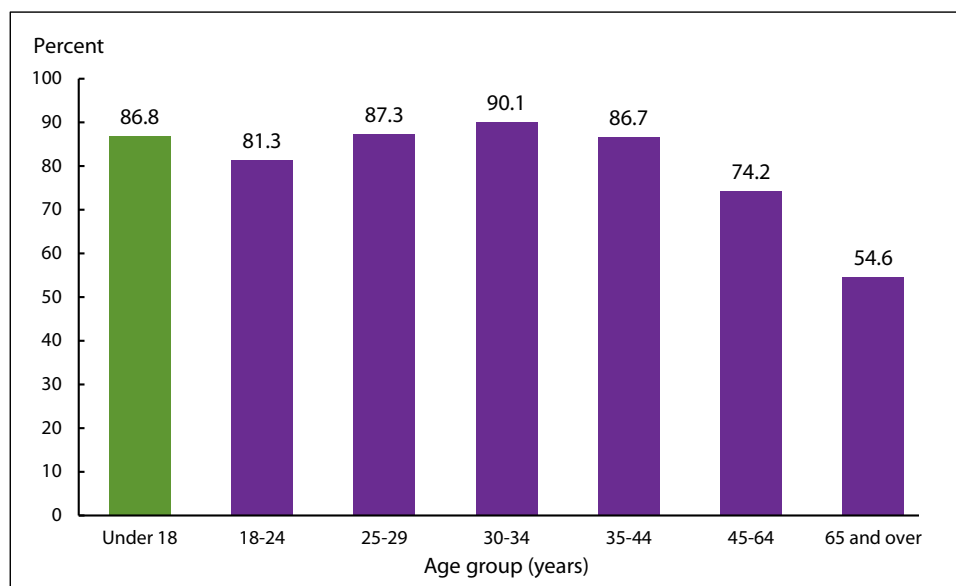
Background

Since 2003, NHIS has asked respondents about landlines and wireless telephones in their homes. Compared with adults living in landline households, adults living in wireless-only households are more likely to be people who smoke

cigarettes and people who had at least one heavy drinking day in the past year. Adults living in wireless-only households are also less likely to have health insurance coverage, less likely to have a usual place to go for medical care, less likely to have received an influenza vaccination in the past year, and more likely to have experienced financial barriers to care. Previous [Early Release Program reports](#) based on data from 2003-2018 include additional details about these health-related differences between people with and without landline telephones.

Because of these differences, the results from random-digit-dial health surveys could be biased if they do not include sufficient representation of households with only wireless telephones and households with landlines. NCHS continues to publish estimates of the size and characteristics of these populations so

Figure. Percentages of wireless-only adults and of children living in households with only wireless telephone service, by age group: United States, July-December 2023



NOTES: Wireless-only adults are adults who live in households with only wireless telephone service and have their own wireless telephone.
SOURCE: National Center for Health Statistics, National Health Interview Survey.

that survey research organizations can evaluate whether they have appropriately included these populations in their telephone surveys.

Methods

NHIS randomly selects one “sample adult” aged 18 years or older and one “sample child” aged 17 years or younger (if any children live in the household) from each household following a brief initial interview that identifies everyone who usually lives or stays in the household. Information about the sample adult is collected from the sample adults themselves unless they are physically or mentally unable to do so, in which case a knowledgeable proxy can answer for the sample adult. Information about the sample child is collected from a parent or adult who is knowledgeable about and responsible for the health care of the sample child. This respondent may or may not also be the sample adult.

To determine whether the sample adult or child lived in a household with a landline telephone, the respondent was asked if there was “at least one phone inside your home that is currently working and is not a cell phone.” To avoid possible confusion with cordless landline telephones, the word “wireless” was not used in the survey. This question was asked only once, in whichever interview (sample adult or sample child) came first.

Sample adults are also asked whether they “have a working cell phone,” and if not, whether they “live with anyone who has a working cell phone.” This approach permits the identification of adults living in wireless-only households (that is, households without landlines within which at least one household member has a working cell phone) and of wireless-only adults (that is, adults who live in a wireless-only household and have their own cell phone). Respondents for sample children are only asked if the child lives “with anyone who has a working cell phone,” and only if the wireless status of the household is not yet known from the sample adult interview.

An additional question is included for sample adults who have a cell phone and live in households with landline telephones. The sample adult is asked to

consider “all the telephone calls that you answer” and to report whether “all or almost all [are] on your cell phones, some [are] on your cell phone and some on your home phone, or very few or none [are] on your cell phones.” This question permits the identification of “wireless-mostly” adults—defined as adults with both landline and cellular telephones who answer all or almost all calls on cell phones. Landline-mostly adults and dual-users can be similarly identified.

NHIS uses sampling weights to produce representative national estimates. The base weight is equal to the inverse of the probability of selection of the sample address. These weights are adjusted for household and person-level nonresponse using multilevel models predictive of response propensity. Nonresponse-adjusted weights are further calibrated to U.S. Census Bureau population projections and American Community Survey (ACS) one-year estimates for age, sex, race and ethnicity, educational attainment, housing tenure, Census division, and Metropolitan Statistical Area status.

Point estimates and 95% confidence intervals were calculated using SUDAAN software (RTI International, Research Triangle Park, NC) to account for the complex sample design of NHIS. All estimates shown meet the NCHS standards of reliability as specified in *National Center for Health Statistics Data Presentation Standards for Proportions*.

Differences between percentages were evaluated using two-sided significance tests at the 0.05 level. All differences discussed are statistically significant unless otherwise noted. Lack of comment regarding the difference between any two estimates does not necessarily mean that the difference was tested and found to be not significant. Because of small sample sizes, estimates based on less than 1 year of data may have large confidence intervals, and caution should be used in interpreting such estimates.

Household Telephone Status

From July through December 2023, information on household telephone status was obtained for 14,113 civilian adults aged 18 and over and 3,738 children under age 18. In the second six months of 2023, 76.0% of adults (about 197 million) and 86.8% of children (nearly 63 million) lived in households that did not have a landline telephone but did have at least one wireless telephone (**Table 1**).

The percentages of adults and children living in wireless-only households have been generally increasing since 2003. Consistent with that trend, there was also a statistically significant increase (3.4 percentage points) in the past 12 months—that is, from the second 6 months of 2022 to the second 6 months of 2023—in the percentages of adults living in wireless-only households. Across that same time period, an increase (4.9 percentage points) was also observed for children.

Wireless-only Adults

Three in four adults were wireless-only (75.2%, 195 million); that is, they personally had a wireless telephone and lived in a household that did not have a landline. The percentage of adults who were wireless-only is shown, by selected demographic characteristics, in **Table 2**. Confidence intervals for these percentages are shown in **Table 3**. For July–December 2023:

- Nine in 10 adults aged 30–34 (90.1%) were wireless-only (**Figure**). The percentage of adults who were wireless-only decreased as age increased beyond 35 years: 86.7% for those 35–44; 74.2% for those 45–64; and 54.6% for those 65 and over.
- Hispanic adults (83.9%) were more likely than non-Hispanic Asian (76.0%), non-Hispanic Black (70.8%), or non-Hispanic White (73.2%) adults to be wireless-only.
- Men (75.5%) were statistically as likely as women (74.8%) to be wireless-only.

- Adults with family incomes below the federal poverty threshold (80.0%) were more likely than adults with family incomes of 100% to less than 200% of the federal poverty threshold (75.3%) and adults with higher family incomes (75.1%) to be wireless-only.
- Adults living in the Midwest (78.1%), South (77.0%), and West (78.4%) were more likely than those living in the Northeast (62.7%) to be wireless-only.
- Six in seven adults living in rented homes (86.2%) were wireless-only. This percentage is higher than the percentage for adults living in homes owned by a household member (70.8%).

Table 2 also includes estimates of the percentage of adults who were wireless-mostly, landline-mostly, dual users, landline-only, and phoneless, by selected demographic characteristics. Confidence intervals for these percentages are shown in **Table 3**.

Other NHIS Early Release Program Products

This report is published as part of the NHIS Early Release Program. Earlier reports on wireless substitution are at <https://www.cdc.gov/nchs/nhis/erwirelesssubs.htm>.

The prevalence of adults and children living in wireless-only households varies across states. For more information about prevalence estimates at the state level, see

- NCHS. Modeled estimates (with standard errors) of the percent distribution of personal telephone status for adults aged 18 and over, by state: United States, 2022. May 2024. Available from: https://www.cdc.gov/nchs/data/nhis/earlyrelease/Wireless_state_202406.pdf.

In addition to these products, preliminary microdata files containing selected NHIS variables are produced as part of the Early Release Program. The telephone service use variables presented in this report are included in those

microdata files. Analysts can access these files through the NCHS Research Data Centers (<https://www.cdc.gov/rdc/>) without having to wait for the final annual NHIS microdata files to be released.

For more information about NHIS and the NHIS Early Release Program, or to find other Early Release Program products, see

- NHIS home page at <https://www.cdc.gov/nchs/nhis.htm>.
- Early Release Program home page at <https://www.cdc.gov/nchs/nhis/earlyrelease.htm>.

Suggested Citation

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Table 1. Percent distribution of household telephone status for adults and children: United States, 2021-2023

Date of interview	Number of people (unweighted)	Wireless-only household	Landline with wireless	Landline-only household ¹	Phoneless	Landline with unknown wireless	Wireless with unknown landline	Total
Adults								
July–December 2021	14,629	68.7	28.9	1.7	0.6	0.0	0.1	100.0
95% confidence interval	...	67.54-69.81	27.82-29.97	1.48-2.00	0.47-0.75	0.00-0.05	0.05-0.16	...
January–June 2022	13,002	70.7	27.1	1.6	0.4	0.0	0.1	100.0
95% confidence interval	...	69.47-71.97	25.88-28.36	1.41-1.89	0.31-0.59	0.01-0.09	0.02-0.17	...
July–December 2022	13,385	72.6	25.4	1.3	0.6	0.0	0.1	100.0
95% confidence interval	...	71.55-73.67	24.34-26.44	1.11-1.50	0.46-0.75	0.01-0.06	0.04-0.19	...
January–June 2023	14,039	74.9	23.4	1.1	0.5	0.0	0.1	100.0
95% confidence interval	...	73.94-75.82	22.52-24.33	0.96-1.24	0.34-0.61	0.01-0.07	0.04-0.25	...
July–December 2023	14,113	76.0	22.2	1.3	0.5	0.0	0.0	100.0
95% confidence interval	...	74.89-77.15	21.17-23.21	1.08-1.54	0.34-0.61	0.00-0.04	0.01-0.09	...
Children								
July–December 2021	4,211	79.1	19.6	0.4	0.8	–	0.0	100.0
95% confidence interval	...	77.45-80.73	18.05-21.35	0.20-0.65	0.55-1.22	–	0.01-0.17	...
January–June 2022	3,585	81.7	17.3	0.5	0.5	–	0.1	100.0
95% confidence interval	...	80.05-83.31	15.70-18.93	0.22-1.02	0.31-0.74	–	0.01-0.31	...
July–December 2022	3,768	81.9	16.9	0.3	0.9	–	0.0	100.0
95% confidence interval	...	80.08-83.64	15.34-18.64	0.11-0.60	0.52-1.41	–	0.00-0.12	...
January–June 2023	3,876	84.6	14.3	0.3	0.8	–	0.0	100.0
95% confidence interval	...	82.97-86.04	12.87-15.80	0.10-0.86	0.54-1.33	–	0.00-0.18	...
July–December 2023	3,738	86.8	12.4	0.3	0.6	–	0.0	100.0
95% confidence interval	...	85.54-87.95	11.23-13.57	0.10-0.66	0.36-0.90	–	0.01-0.13	...

0.0 Quantity more than zero but less than 0.05.

... Category not applicable.

– Quantity zero.

¹Landline-only refers to households with a landline telephone in which no residents have a working cell phone. In reports based on 2003-2018 data, this category was labeled as “landline without wireless.”

NOTE: Data are based on household interviews of a sample of the civilian noninstitutionalized population.

SOURCE: National Center for Health Statistics, National Health Interview Survey, July 2021-December 2023.

Table 2. Percent distribution of personal telephone status for adults, by selected demographic characteristics: United States, July-December 2023

Demographic characteristic	Wireless-only adults	Wireless-mostly adults	Dual-users	Landline-mostly adults	Landline-only adults	Phoneless adults	Unknown ¹	Total
Total	75.2	14.0	4.7	2.8	2.0	1.2	0.2	100.0
Age (years)								
18-24	81.3	14.2	1.1	0.5	0.6	2.1	0.2	100.0
25-29	87.3	9.7	1.5	0.1	0.4	0.9	0.3	100.0
30-34	90.1	6.8	1.2	0.0	0.5	1.3	0.2	100.0
35-44	86.7	8.8	1.7	0.5	0.7	1.3	0.4	100.0
45-64	74.2	17.3	4.3	1.7	1.3	1.0	0.2	100.0
65 and over	54.6	17.4	11.7	9.3	5.7	1.2	0.1	100.0
Race and ethnicity								
Hispanic or Latino, any race(s)	83.9	9.8	1.8	0.8	1.2	2.2	0.3	100.0
Asian, single race ²	76.0	13.5	4.9	2.4	1.7	1.2	0.3	100.0
Black, single race ²	70.8	18.1	5.5	2.1	1.8	1.3	0.4	100.0
White, single race ²	73.2	14.5	5.3	3.6	2.3	1.0	0.2	100.0
Other and multiple races ²	79.4	12.1	**	1.8	0.9	0.3	0.0	100.0
Sex								
Male	75.5	14.3	4.3	2.4	2.1	1.3	0.2	100.0
Female	74.8	13.7	5.0	3.2	1.8	1.2	0.3	100.0
Education								
Some high school or less	75.7	8.4	5.0	2.9	4.3	3.4	0.3	100.0
High school graduate or GED ³	73.1	13.6	5.4	3.5	2.3	1.8	0.2	100.0
Some post-high school, no degree	76.2	14.1	4.1	2.8	1.9	0.7	0.1	100.0
4-year college degree or higher	75.7	16.0	4.4	2.2	0.9	0.5	0.3	100.0
Family income relative to federal poverty threshold ⁴								
Less than 100%	80.0	7.2	3.7	2.1	3.2	3.7	0.2	100.0
100% to less than 200%	75.3	10.6	5.0	4.1	3.0	1.8	0.2	100.0
200% or greater	75.1	15.6	4.5	2.5	1.3	0.7	0.2	100.0
Geographic region ⁵								
Northeast	62.7	20.5	7.3	5.0	3.5	0.8	0.1	100.0
Midwest	78.1	10.4	5.0	3.5	2.1	0.8	0.2	100.0
South	77.0	13.8	4.0	2.2	1.5	1.3	0.2	100.0
West	78.4	12.8	3.5	1.7	1.5	1.8	0.2	100.0
Metropolitan statistical area status								
Metropolitan	75.5	14.1	4.6	2.5	1.7	1.2	0.2	100.0
Not metropolitan	72.9	13.0	5.0	4.8	3.2	1.1	0.1	100.0

See footnotes at end of table.

Table 2. Percent distribution of personal telephone status for adults, by selected demographic characteristics: United States, July-December 2023—Continued

Demographic characteristic	Wireless-only adults	Wireless-mostly adults	Dual-users	Landline-mostly adults	Landline-only adults	Phoneless adults	Unknown ¹	Total
Home ownership status								
Owned or being bought	70.8	16.8	5.8	3.5	2.1	0.9	0.2	100.0
Renting	86.2	7.1	2.0	1.2	1.5	1.9	0.2	100.0
Other arrangement	70.3	14.7	4.9	2.9	**	2.1	0.4	100.0
Number of adults in survey sample (unweighted)	10,369	1,914	755	539	351	159	26	14,113

** Estimate does not meet NCHS standards of reliability as specified in *National Center for Health Statistics Data Presentation Standards for Proportions* (available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf).

– Quantity zero.

¹Unknown includes adults with either unknown landline, unknown wireless, or unknown frequency-of-use status (for adults with both landline and wireless telephones). Adults with both unknown landline and unknown wireless status are excluded from the analysis.

²Race groups are non-Hispanic.

³GED is General Educational Development high school equivalency diploma.

⁴Based on family income and family size using the U.S. Census Bureau’s poverty thresholds. Early Release estimates stratified by poverty status are based on reported income only and may differ from similar estimates produced later that are based on both reported and imputed income. Family income relative to the federal poverty threshold was unknown for 11.0% of adults in these analyses. NCHS imputes income when income is unknown, but the imputed income file is not available until the annual NHIS microdata are released.

⁵In the geographic classification of the U.S. population, states are grouped into the following four regions used by the U.S. Census Bureau: *Northeast* includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *Midwest* includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *South* includes Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and *West* includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

NOTES: Data are based on household interviews of a sample of the civilian noninstitutionalized population. Korn and Graubard 95% confidence intervals for these estimates are presented in Table 3.

SOURCE: National Center for Health Statistics, National Health Interview Survey, July-December 2023.

Table 3. Korn and Graubard 95% confidence intervals for percent distributions in Table 2

Demographic characteristic	Wireless-only adults	Wireless-mostly adults	Dual-users	Landline-mostly adults	Landline-only adults	Phoneless adults	Unknown ¹	Total
Total	74.0-76.3	13.2-14.7	4.2-5.1	2.5-3.2	1.7-2.3	1.0-1.5	0.1-0.3	...
Age (years)								
18-24	78.1-84.1	11.7-17.0	0.5-2.1	0.1-1.4	0.1-1.4	1.3-3.4	0.0-1.2	...
25-29	84.3-89.8	7.5-12.2	0.7-2.8	0.0-0.5	0.0-1.4	0.3-1.7	0.0-0.9	...
30-34	87.4-92.4	5.0-9.1	0.4-2.6	0.0-0.3	0.1-1.2	0.6-2.4	0.0-0.6	...
35-44	84.9-88.3	7.6-10.2	0.9-2.8	0.2-1.0	0.2-1.6	0.8-1.9	0.2-0.9	...
45-64	72.6-75.7	15.9-18.9	3.6-5.1	1.3-2.3	0.8-1.8	0.6-1.4	0.1-0.5	...
65 and over	52.1-57.0	16.1-18.9	10.6-12.9	8.2-10.5	4.9-6.5	0.8-1.7	0.0-0.2	...
Race and ethnicity								
Hispanic or Latino, any race(s)	81.8-85.8	8.4-11.3	1.2-2.5	0.4-1.4	0.8-1.8	1.5-3.3	0.1-0.8	...
Asian, single race ²	72.8-79.1	10.5-17.0	3.1-7.3	1.3-4.1	0.9-2.8	0.4-2.7	0.1-1.0	...
Black, single race ²	68.0-73.5	15.7-20.7	4.2-7.1	1.3-3.0	1.1-2.8	0.7-2.3	0.1-1.0	...
White, single race ²	71.8-74.7	13.7-15.4	4.8-5.8	3.2-4.0	1.9-2.7	0.7-1.3	0.1-0.3	...
Other and multiple races ²	73.0-84.8	7.5-18.0	...	0.6-3.8	0.2-2.6	0.0-1.7	0.0-1.1	...
Sex								
Male	73.9-77.0	13.2-15.5	3.8-4.9	2.0-2.8	1.6-2.6	1.0-1.7	0.1-0.3	...
Female	73.5-76.1	12.8-14.6	4.5-5.6	2.8-3.7	1.5-2.1	0.8-1.6	0.1-0.5	...
Education								
Some high school or less	72.8-78.4	6.9-10.2	3.6-6.8	2.0-4.0	3.1-5.8	2.1-5.1	0.1-0.9	...
High school graduate or GED ³	70.8-75.3	12.0-15.4	4.6-6.3	2.8-4.4	1.8-3.0	1.3-2.4	0.1-0.7	...
Some post-high school, no degree	74.5-77.8	13.0-15.4	3.5-4.8	2.3-3.4	1.4-2.5	0.4-1.2	0.0-0.3	...
4-year college degree or higher	74.2-77.1	14.9-17.2	3.9-5.1	1.8-2.6	0.7-1.2	0.3-0.8	0.1-0.4	...
Family income relative to federal poverty threshold ⁴								
Less than 100%	77.2-82.6	5.8-8.8	2.4-5.5	1.3-3.1	2.3-4.3	2.4-5.3	0.0-1.2	...
100% to less than 200%	72.9-77.6	8.9-12.5	3.8-6.4	3.3-5.0	2.1-4.0	1.2-2.6	0.1-0.5	...
200% or greater	73.9-76.3	14.7-16.6	4.1-5.0	2.2-2.9	1.0-1.6	0.5-1.0	0.1-0.3	...
Geographic region ⁵								
Northeast	59.7-65.7	18.6-22.5	5.9-9.0	4.0-6.2	2.3-5.1	0.4-1.4	0.0-0.4	...
Midwest	76.1-80.1	9.2-11.6	4.1-6.0	2.7-4.4	1.6-2.6	0.5-1.3	0.1-0.6	...
South	75.1-78.8	12.5-15.2	3.5-4.7	1.8-2.6	1.1-1.9	0.9-1.8	0.1-0.5	...
West	76.3-80.5	11.4-14.4	2.7-4.4	1.3-2.2	1.0-2.1	1.1-2.8	0.1-0.4	...
Metropolitan statistical area status								
Metropolitan	74.4-76.7	13.4-14.9	4.2-5.1	2.2-2.8	1.4-2.1	0.9-1.6	0.2-0.4	...
Not metropolitan	69.0-76.5	10.8-15.5	3.8-6.4	3.7-6.0	2.4-4.3	0.6-1.9	0.0-0.3	...

See footnotes at end of table.

Table 3. Korn and Graubard 95% confidence intervals for percent distributions in Table 2—Continued

Demographic characteristic	Wireless-only adults	Wireless-mostly adults	Dual-users	Landline-mostly adults	Landline-only adults	Phoneless adults	Unknown ¹	Total
Home ownership status								
Owned or being bought	69.4-72.2	15.9-17.7	5.3-6.3	3.1-3.9	1.7-2.5	0.7-1.2	0.1-0.4	...
Renting	85.0-87.2	6.3-8.0	1.3-2.8	0.9-1.6	1.1-2.0	1.3-2.5	0.1-0.4	...
Other arrangement	64.7-75.4	10.6-19.6	2.8-7.9	1.4-5.5	...	0.6-5.1	0.0-2.2	...

... Category not applicable.

¹Unknown includes adults with either unknown landline, unknown wireless, or unknown frequency-of-use status (for adults with both landline and wireless telephones). Adults with both unknown landline and unknown wireless status are excluded from the analysis.

²Race groups are non-Hispanic.

³GED is General Educational Development high school equivalency diploma.

⁴Based on family income and family size using the U.S. Census Bureau’s poverty thresholds. Early Release estimates stratified by poverty status are based on reported income only and may differ from similar estimates produced later that are based on both reported and imputed income. Family income relative to the federal poverty threshold was unknown for 11.0% of adults in these analyses. NCHS imputes income when income is unknown, but the imputed income file is not available until the annual NHIS microdata are released.

⁵In the geographic classification of the U.S. population, states are grouped into the following four regions used by the U.S. Census Bureau: *Northeast* includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *Midwest* includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *South* includes Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and *West* includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

NOTES: Data are based on household interviews of a sample of the civilian noninstitutionalized population.

SOURCE: National Center for Health Statistics, National Health Interview Survey, July-December 2023.