



Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January-June 2019

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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.

In January 2019, the NHIS launched a redesigned questionnaire. Among other changes, it is now possible to estimate the percentage of adults who live in wireless-only households and have their own wireless telephone (wireless-only adults).

Estimates in this report are based on the first six months of 2019. During this time period, 59.2% of adults and 70.5% of children lived in wireless-only households. In comparison, a slightly smaller percentage of adults were wireless-only adults (58.4%). Four in five adults aged 25–29 (80.2%) and aged 30–34 (78.3%), and three in four adults renting their homes (75.1%), were wireless-only adults.

NHIS Early Release Program

This report is published as part of the NHIS Early Release Program. Twice each year, the National Center for Health Statistics (NCHS) releases selected estimates of telephone coverage for the civilian noninstitutionalized U.S. population based on data from NHIS. 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 January–June 2019 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.

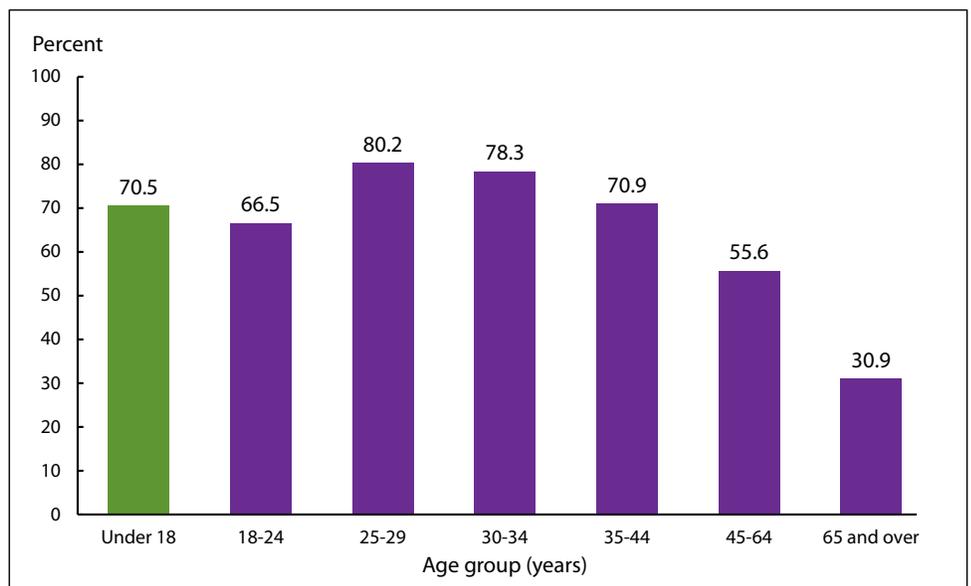
Background

Many health surveys, political polls, and other types of research are conducted using random-digit-dial (RDD) telephone surveys. Most survey research organizations include wireless telephone numbers when conducting RDD surveys. If they did not, the exclusion of

households with only wireless telephones (along with the small proportion of households that have no telephone service) could bias results. This bias—known as coverage bias—could exist if there are differences between persons with and without landline telephones for the substantive variables of interest.

Since 2003, NHIS has asked respondents about landlines and wireless telephones in their homes. Previous **Early Release Program reports** revealed that there are health-related differences between persons with and without landline telephones. For example, compared with adults living in landline households, adults living in wireless-only households were more likely to be current smokers and to have had at least one heavy drinking day in the past year. Adults living in wireless-only households were also less likely to have health

Figure. Percentages of wireless-only adults and of children living in households with only wireless telephone service, by age group: United States, January-June 2019



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

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.

The potential for coverage bias remains a real threat to health surveys that do not include sufficient representation of households with only wireless telephones. NCHS continues to publish estimates of the size and characteristics of this population so that survey research organizations can evaluate whether they have appropriately included this population in their health-related telephone surveys.

2019 NHIS Questionnaire Redesign

In 2019, the NHIS underwent a questionnaire redesign to better meet the needs of data users. The aims of the redesign were to improve the measurement of covered health topics, reduce respondent burden by shortening the length of the questionnaire, harmonize overlapping content with other federal surveys, establish a long-term structure of ongoing and periodic topics, and incorporate advances in survey methodology and measurement. The redesigned questionnaire has the potential to impact estimates of telephone ownership for several reasons.

First, prior to 2019, telephone ownership information was collected as part of the Family Core; a family respondent provided information for all persons living in responding families. Starting in 2019, the NHIS collects information for up-to-two persons living in each responding household. One “sample adult” aged 18 years or older and one “sample child” aged 17 years or younger (if any children live in the household) are randomly selected 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 adult him/herself unless s/he is 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.

Second, the wireless telephone questions were modified, but the landline telephone question was not. To determine whether the sampled persons 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.

In 2019, rather than asking family respondents whether “anyone in your family has a working cellular telephone,” the NHIS now asks sample adults whether they “have a working cell phone,” and if not, whether they “live with anyone who has a working cell phone.” This change permits the identification of adults living in wireless-only households (that is, households without landlines but with working cell phones) and of wireless-only adults (that is, adults who have a working cell phone and live in wireless-only households). 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.

In 2019, an additional question was included for sample adults who have a cell phone and live in households with landline telephones. The sample adult was 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 is a modified version of a question that, prior to 2019, was used to identify wireless-mostly households (rather than adults) based on calls received (rather than answered). The modified 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.

Third, the telephone ownership questions were moved from near the beginning of the survey to near the end of the survey. Breakoffs that occur late in the interview may result in interviews that are sufficiently complete for most purposes but are missing data for telephone ownership. These data were missing for 2.9% of sample adults and 0.7% of sample children in the first six months of 2019.

Finally, 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. In 2019, the adjustment method changed to incorporate more-robust 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, Census division, and Metropolitan Statistical Area status. Prior to 2019, calibration was only to age, sex, and race/ethnicity projections.

These changes in the weighting approach and questionnaire design have the potential to impact direct comparisons between estimates for 2019 and earlier years. An evaluation of these changes on key estimates from the NHIS, including those of adults living in wireless-only households, suggests that the observed difference between estimates for 2018 (56.0%) and the first six months of 2019 (59.2%) may reflect a true increase over time, rather than a weighting or design effect. Please see the evaluation available from the [Early Release Program homepage](#) for more details.

An evaluation of the impact of the questionnaire redesign on other telephone status estimates is not yet complete. The observed decrease in the prevalence of adults living in phoneless households—from 3.0% in 2018 to 1.0% in the first six months of 2019—may be an artifact of the redesign and not a true change over time.

Methods

From January through June 2019, information on household telephone status was obtained for 16,577 civilian adults aged 18 and over and 4,800 children under age 18.

For this report, the NHIS sampling weights were further adjusted to account for telephone-question nonresponse. The weights for cases with known telephone ownership status were recalibrated to the Census projections and ACS estimates described earlier. 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.

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

In the first six months of 2019, 59.2% of adults (approximately 148 million) and 70.5% of children (nearly 52 million) lived in households that did not have a landline telephone but did have at least one wireless telephone (**Table 1**).

Approximately 1.0% of adults and 1.0% of children (2.5 and 0.7 million, respectively) lived in phoneless households; that is, they had no reported telephone service (neither wireless nor landline) in the first six months of 2019.

Wireless-only Adults

More than one-half of adults were wireless-only (58.4%, 146 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 January–June 2019:

- Four in five adults aged 25–29 (80.2%) and aged 30–34 (78.3%) were wireless-only (**Figure**). The percentages for those age groups are greater than for adults aged 18–24 (66.5%). The percentage of adults who were wireless-only decreased as age increased beyond 35 years: 70.9% for those 35–44; 55.6% for those 45–64; and 30.9% for those 65 and over.
- Hispanic adults (71.2%) were more likely than non-Hispanic white (56.0%), non-Hispanic black (54.3%), or non-Hispanic Asian (55.5%) adults to be wireless-only.
- Adults living in poverty (67.1%) and near poverty (62.2%) were more likely than higher income adults (57.4%) to be wireless-only. (Footnote 3 in **Table 2** gives definitions of these categories.)
- Adults living in the Midwest (61.6%), South (61.1%), and West (61.8%) were more likely than those living in the Northeast (44.7%) to be wireless-only.
- Three in four adults living in rented homes (75.1%) were wireless-only. This percentage is higher than the percentage for adults living in homes owned by a household member (50.2%).

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**.

State Estimates

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 household telephone status for adults aged 18 and over and for children under age 18, by state: United States, 2018. December 2019. Available from: https://www.cdc.gov/nchs/data/nhis/earlyrelease/Wireless_state_201912-508.pdf.

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>. Reports based on data from 2003–2018 include details about the aforementioned health-related differences between persons with and without landline telephones.

Two additional products are published quarterly as part of the NHIS Early Release Program. *Early Release of Selected Estimates Based on Data From the National Health Interview Survey* provides estimates for selected key measures of health. In addition, *Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey* provides estimates regarding health insurance coverage. Other Early Release Program products are released as needed.

In addition to these products, preliminary microdata files containing selected NHIS variables are produced as part of the ER Program. The telephone service use variables presented in this report have been included in those microdata files. NHIS data users can analyze 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/releases.htm>.

Suggested Citation

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Table 1. Percent distribution of household telephone status for adults and children: United States, January-June 2019

Date of interview	Number of persons (unweighted)	Wireless-only household	Landline with wireless	Landline-only household ¹	Phoneless	Landline with unknown wireless	Wireless with unknown landline	Total
Adults								
January-June 2019	16,577	59.2	37.2	2.5	1.0	0.0	0.1	100.0
95% confidence interval	...	57.97-60.37	35.99-38.43	2.30-2.79	0.78-1.18	0.02-0.09	0.03-0.12	...
Children								
January-June 2019	4,800	70.5	28.0	0.6	1.0	-	-	100.0
95% confidence interval	...	68.67-72.19	26.33-29.68	0.34-1.04	0.68-1.39	-	-	...

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 earlier reports, this category was labeled as "landline without wireless."

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

SOURCE: NCHS, National Health Interview Survey.

Table 2. Percent distribution of personal telephone status for adults, by selected demographic characteristics: United States, January-June 2019

Demographic characteristic	Wireless-only adults	Wireless-mostly adults	Dual-users	Landline-mostly adults	Landline-only adults	Phoneless adults	Unknown ¹	Total
Total	58.4	19.9	10.0	5.9	3.8	1.6	0.4	100.0
Age (years)								
18-24	66.5	22.5	5.3	1.4	1.8	2.3	0.3	100.0
25-29	80.2	13.5	2.7	1.1	0.9	1.5	0.2	100.0
30-34	78.3	14.9	2.8	0.6	1.7	1.2	0.6	100.0
35-44	70.9	19.8	4.5	1.9	0.9	1.5	0.4	100.0
45-64	55.6	24.1	11.5	4.4	2.4	1.5	0.5	100.0
65 and over	30.9	16.9	20.6	18.5	11.4	1.6	0.1	100.0
Race/ethnicity								
Hispanic or Latino, any race(s)	71.2	16.0	5.2	2.7	1.9	2.8	0.1	100.0
Non-Hispanic white, single race	56.0	20.2	11.0	7.1	4.3	1.1	0.3	100.0
Non-Hispanic black, single race	54.3	22.2	10.7	6.1	4.6	1.7	0.6	100.0
Non-Hispanic Asian, single race	55.5	23.6	12.2	3.7	1.8	2.4	0.8	100.0
Non-Hispanic other races and multiple races	64.3	17.5	7.3	2.8	**	3.8	0.8	100.0
Sex								
Male	59.6	20.0	9.7	5.2	3.6	1.6	0.3	100.0
Female	57.4	19.8	10.3	6.6	3.9	1.5	0.4	100.0
Education								
Some high school or less	58.1	13.2	7.7	7.4	8.5	4.8	0.3	100.0
High school graduate or GED ²	57.2	18.4	9.9	7.4	5.0	1.7	0.5	100.0
Some post-high school, no degree	60.1	21.7	9.7	5.1	2.4	0.8	0.3	100.0
4-year college degree or higher	58.1	22.5	11.4	4.8	1.9	0.9	0.4	100.0
Family poverty status ³								
Poor	67.1	11.5	5.7	4.4	6.8	4.2	0.3	100.0
Near-poor	62.2	15.9	6.6	6.5	6.1	2.2	0.4	100.0
Not-poor	57.4	22.4	11.2	5.8	2.3	0.7	0.2	100.0
Geographic region ⁴								
Northeast	44.7	24.4	14.2	7.8	6.6	1.5	0.8	100.0
Midwest	61.6	17.1	10.4	6.6	3.2	0.9	0.2	100.0
South	61.1	19.4	8.6	5.4	3.7	1.5	0.3	100.0
West	61.8	19.8	8.6	4.8	2.2	2.5	0.3	100.0
Metropolitan statistical area status								
Metropolitan	58.9	20.7	9.9	5.3	3.2	1.5	0.4	100.0
Not metropolitan	55.7	15.3	10.4	9.8	6.7	1.9	0.2	100.0

See footnotes at end of table.

Table 2. Percent distribution of personal telephone status for adults, by selected demographic characteristics: United States, January-June 2019—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 ⁵								
Owned or being bought	50.2	23.5	12.9	7.8	4.1	1.3	0.4	100.0
Renting	75.1	12.9	4.2	2.4	2.9	2.2	0.3	100.0
Other arrangement	61.6	16.8	9.4	3.4	5.6	3.0	0.2	100.0
Number of adults in survey sample (unweighted)	9,479	3,053	1,777	1,183	791	247	47	16,577

** 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).

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.

²GED is General Educational Development high school equivalency diploma.

³Based on family income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons are defined as those below the poverty threshold. "Near-poor" persons have incomes of 100% to less than 200% of the poverty threshold. "Not-poor" persons have incomes of 200% of the poverty threshold or greater. 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. Household poverty status was unknown for 7.2% of adults in these analyses. NCHS imputes income when income is unknown, but the imputed income file is not available until the annual National Health Interview Survey microdata are released.

⁴In 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.

NOTE: 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: NCHS, National Health Interview Survey.

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	57.3-59.6	19.0-20.9	9.5-10.5	5.5-6.4	3.4-4.1	1.4-1.9	0.3-0.5	...
Age (years)								
18-24	63.5-69.3	20.3-25.0	3.9-7.2	0.8-2.4	0.9-3.3	1.5-3.4	0.1-1.2	...
25-29	77.2-82.9	11.1-16.2	1.6-4.6	0.5-2.2	0.5-1.7	0.9-2.4	0.0-0.9	...
30-34	74.4-81.7	12.4-17.8	1.9-4.1	0.3-1.5	0.8-3.5	0.7-2.0	0.1-3.0	...
35-44	68.4-73.4	17.7-22.1	3.7-5.6	1.3-2.8	0.6-1.4	1.0-2.3	0.2-0.7	...
45-64	53.9-57.3	22.4-25.8	10.7-12.4	3.8-5.1	2.0-3.0	1.2-1.9	0.3-0.8	...
65 and over	28.8-33.0	15.6-18.2	19.2-22.2	17.0-19.9	10.4-12.5	1.2-2.1	0.1-0.4	...
Race/ethnicity								
Hispanic or Latino, any race(s)	68.5-73.7	14.2-18.0	4.1-6.6	2.1-3.5	1.4-2.7	1.9-4.0	0.0-0.4	...
Non-Hispanic white, single race	54.6-57.3	19.1-21.3	10.3-11.7	6.5-7.8	3.8-4.8	0.9-1.4	0.2-0.5	...
Non-Hispanic black, single race	51.0-57.4	19.5-25.1	8.5-13.3	4.8-7.7	3.3-6.3	1.2-2.5	0.2-2.0	...
Non-Hispanic Asian, single race	50.9-59.9	19.5-28.4	10.0-14.9	2.3-5.8	1.1-2.9	1.3-4.5	0.3-2.1	...
Non-Hispanic other races and multiple races	58.4-69.8	13.6-22.3	4.8-10.9	1.5-5.1	1.8-6.7	2.1-6.9	0.2-2.7	...
Sex								
Male	58.0-61.1	18.8-21.2	8.9-10.5	4.7-5.8	3.1-4.1	1.3-2.0	0.2-0.5	...
Female	56.0-58.8	18.6-21.1	9.6-11.0	6.1-7.2	3.5-4.4	1.1-2.1	0.3-0.6	...
Education								
Some high school or less	54.6-61.5	11.4-15.3	6.2-9.7	5.9-9.1	7.1-10.3	3.4-6.7	0.1-1.1	...
High school graduate or GED ²	55.3-59.1	16.8-20.1	8.9-11.1	6.5-8.4	4.4-5.7	1.3-2.2	0.3-0.9	...
Some post-high school, no degree	58.6-61.6	20.3-23.2	8.8-10.6	4.4-5.9	1.9-2.9	0.5-1.2	0.1-0.4	...
4-year college degree or higher	56.0-60.1	21.0-24.2	10.4-12.5	4.2-5.5	1.6-2.2	0.7-1.2	0.2-0.7	...
Family poverty status ³								
Poor	63.5-70.5	9.5-14.0	4.3-7.4	3.5-5.6	5.2-8.9	3.3-5.3	0.1-1.0	...
Near-poor	59.5-64.9	14.0-18.0	5.6-7.8	5.6-7.6	5.2-7.2	1.6-2.9	0.1-1.4	...
Not-poor	56.1-58.8	21.3-23.5	10.4-12.0	5.3-6.3	2.0-2.7	0.6-0.9	0.1-0.4	...
Geographic region ⁴								
Northeast	42.8-46.7	22.1-26.9	12.9-15.5	6.7-9.0	5.5-7.8	1.0-2.1	0.4-1.5	...
Midwest	59.5-63.5	15.1-19.2	9.3-11.7	5.6-7.8	2.7-3.9	0.5-1.6	0.1-0.4	...
South	58.8-63.4	18.2-20.7	7.8-9.6	4.7-6.2	3.2-4.2	1.1-1.9	0.2-0.5	...
West	59.3-64.2	17.7-22.1	7.6-9.7	4.2-5.5	1.7-2.8	1.9-3.3	0.2-0.6	...
Metropolitan statistical area status								
Metropolitan	57.7-60.1	19.7-21.8	9.4-10.5	4.9-5.7	2.9-3.6	1.3-1.8	0.3-0.6	...
Not metropolitan	52.3-59.2	13.5-17.4	9.0-12.0	8.1-11.8	5.7-7.8	1.3-2.7	0.1-0.4	...

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	48.8-51.6	22.3-24.7	12.2-13.6	7.1-8.5	3.6-4.5	1.0-1.6	0.2-0.6	...
Renting	73.7-76.5	11.9-14.0	3.5-4.9	2.1-2.7	2.4-3.5	1.7-2.7	0.1-0.6	...
Other arrangement	56.0-66.8	12.6-22.2	6.0-14.5	1.8-6.5	3.4-9.2	1.5-5.8	0.0-1.1	...

... 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.

²GED is General Educational Development high school equivalency diploma.

³Based on family income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons are defined as those below the poverty threshold. "Near-poor" persons have incomes of 100% to less than 200% of the poverty threshold. "Not-poor" persons have incomes of 200% of the poverty threshold or greater. 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. Household poverty status was unknown for 7.2% of adults in these analyses. NCHS imputes income when income is unknown, but the imputed income file is not available until the annual National Health Interview Survey microdata are released.

⁴In 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.

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

SOURCE: NCHS, National Health Interview Survey.