



Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2008

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Overview

Preliminary results from the July-December 2008 National Health Interview Survey (NHIS) indicate that the number of American homes with only wireless telephones continues to grow. More than one of every five American homes (20.2%) had only wireless telephones (also known as cellular telephones, cell phones, or mobile phones) during the second half of 2008, an increase of 2.7 percentage points since the first half of 2008. This is the largest 6-month increase observed since NHIS began collecting data on wireless-only households in 2003. In addition, one of every seven American homes (14.5%) received all or almost all calls on wireless telephones, despite having a landline telephone in the home. This report presents the most up-to-date estimates available from the federal government concerning the size and characteristics of these populations.

NHIS Early Release Program

This report is published as part of the NHIS Early Release Program. In May and December of each year, the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) releases 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 3 years. The estimates are based on in-person interviews that NHIS conducts continuously throughout the year to collect information on health status, health-related behaviors, and health care utilization. The survey also includes information about household telephones

and whether anyone in the household has a wireless telephone.

Two additional reports are published as part of the NHIS Early Release Program. *Early Release of Selected Estimates Based on Data From the National Health Interview Survey* is published quarterly and provides estimates for 15 selected measures of health. *Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey* is also published quarterly and provides additional estimates regarding health insurance coverage.

Methods

For many years, NHIS has included questions on residential telephone numbers, to permit recontacting of survey participants. Starting in 2003, additional questions

were asked, to determine whether the family's telephone number was a landline telephone. All survey respondents were also asked whether "you or anyone in your family has a working cellular telephone."

A "family" can be an individual or a group of two or more related persons living together in the same housing unit (a "household"). Thus, a family can consist of only one person, and more than one family can live in a household (including, for example, a household where there are multiple single-person families, as when unrelated roommates are living together).

In this report, families are identified as "wireless families" if anyone in the family had a working cellular telephone at the time of interview. This person (or persons) could be a civilian adult, a member of the military, or a child. Households are

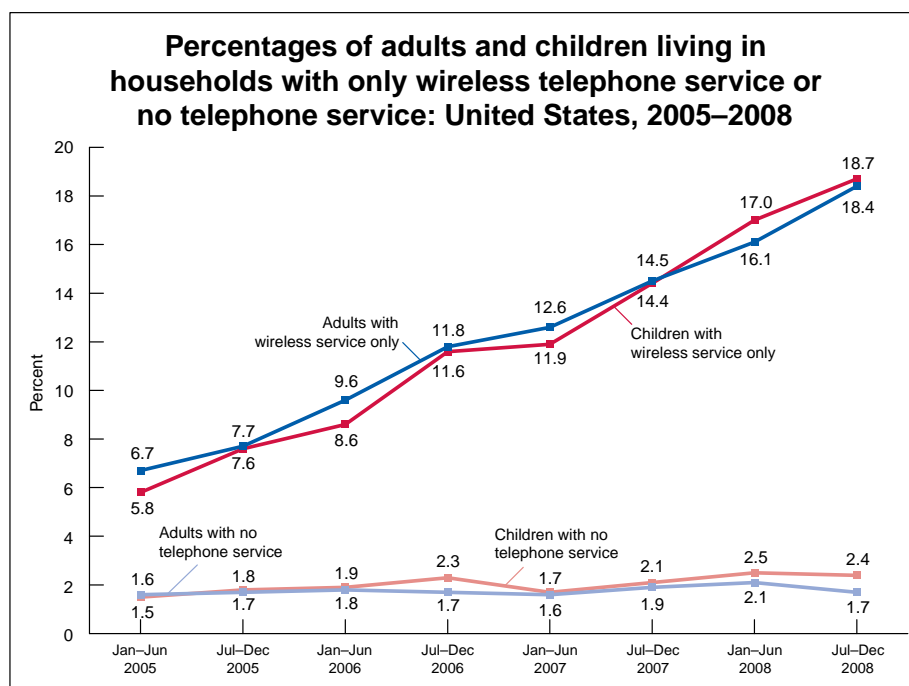


Figure 1



identified as “wireless-only” if they include at least one wireless family and if there are no working landline telephones inside the household. Persons are identified as wireless-only if they live in a wireless-only household. A similar approach is used to identify adults living in households with no telephone service (neither wireless nor landline). Household telephone status (rather than family telephone status) is used in this report because most telephone surveys draw samples of households rather than families.

From July through December 2008, information on household telephone status was obtained for 12,597 households that included at least one civilian adult or child. These households included 23,726 civilian adults aged 18 years and over and 8,635 children under age 18.

Analyses of demographic characteristics are based on data from the NHIS Person and Household files. Demographic data for all civilian adults living in interviewed households were used in these analyses. Estimates stratified by poverty status are based on reported income only. Household income was unknown for nearly 18% of adults.

Analyses of selected health measures are based on data from the NHIS Sample Adult file. Health-related data for one civilian adult randomly selected from each family were used in these analyses. From July through December 2008, data on household telephone status and selected health measures were collected from 9,841 randomly selected adults.

Because NHIS is conducted throughout the year and the sample is designed to yield a nationally representative sample each week, data can be analyzed quarterly. Weights are created for each calendar quarter of the NHIS sample. NHIS data weighting procedures are described in more detail in an NCHS published report ([Series Report No. 2, Vol. 130](#)). To provide access to the most recent information from NHIS, estimates using the July-

December 2008 data are being released prior to final data editing and final weighting. These estimates should be considered preliminary and may differ slightly from estimates using the final data files.

Point estimates and 95% confidence intervals were calculated using SUDAAN software, to account for the complex sample design of NHIS. Differences between percentages were evaluated by using two-sided significance tests at the 0.05 level. Terms such as “more likely” and “less likely” indicate a statistically significant difference. 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 variances, and caution should be used in interpreting these estimates.

Questionnaire Changes in 2007

From 2003 to 2006, families were considered to have landline telephone service if the survey respondent provided a telephone number, identified it as “the family’s phone number,” and said that it was not a cellular telephone number. If the family’s phone number was reported to be a cellular telephone number, the respondent was asked if there was “at least one phone inside your home that is currently working and is not a cell phone.”

In 2007, the questionnaire was changed so that the survey respondent for each family was asked if there was “at least one phone inside your home that is currently working and is not a cell phone,” unless the respondent indicated not having any phone when asked for a telephone number.

From 2003 to 2006, the questions about cellular telephones were asked at the end of the survey. Because of incomplete interviews, more than 10% of households were not asked about wireless telephones. In 2007, the questions were asked earlier in the

survey, resulting in fewer families with unknown wireless telephone status.

In 2007, a new question was added to the survey for persons living in families with both landline and cellular telephones. The respondent for the family was asked to consider all of the telephone calls that his or her family receives and to report whether “all or almost all calls are received on cell phones, some are received on cell phones and some on regular phones, or very few or none are received on cell phones.” This new question permits the identification of persons living in “wireless-mostly” households, defined as households with both landline and cellular telephones in which all families receive all or almost all calls on cell phones.

Finally, in 2007, the questionnaire was redesigned to improve the collection of income information. Initial evaluations suggest that the resulting poverty estimates are generally comparable with those from years 2006 and earlier. However, as a result of the changes, the poverty ratio variable has fewer missing values in 2007 and 2008 compared with prior years.

Telephone Status

In the last 6 months of 2008, more than one of every five households (20.2%) did not have a landline telephone but did have at least one wireless telephone ([Table 1](#)). Approximately 18.4% of all adults--more than 41 million adults--lived in households with only wireless telephones; 18.7% of all children--nearly 14 million children--lived in households with only wireless telephones.

The percentage of households that are wireless-only has been steadily increasing. In fact, the 2.7-percentage-point increase from the first 6 months of 2008 is the largest 6-month increase observed since NHIS began collecting data on wireless-only households in 2003.

The percentage of adults living in wireless-only households has also been



increasing steadily (see [Figure 1](#)). During the last 6 months of 2008, more than one of every six adults lived in wireless-only households. One year before that (that is, during the last 6 months of 2007), one of every seven adults lived in wireless-only households. And 2 years before that (that is, during the last 6 months of 2005), only 1 of every 13 adults lived in wireless-only households.

The percentages of adults and children living without any telephone service have remained relatively unchanged over the past 3 years. Approximately 1.9% of households had no telephone service (neither wireless nor landline). Nearly 4 million adults (1.7%) and 2 million children (2.4%) lived in these households.

Demographic Differences

The percentage of U.S. civilian, noninstitutionalized adults living in wireless-only households is shown by selected demographic characteristics and by survey time period in [Table 2](#). For the period July through December 2008,

- More than three in five adults living only with unrelated adult roommates (60.6%) were in households with only wireless telephones. This is the highest prevalence rate among the population subgroups examined.
- Nearly two in five adults renting their home (39.2%) had only wireless telephones. Adults renting their home were more likely than adults owning their home (9.9%) to be living in households with only wireless telephones.
- More than two in five adults aged 25-29 years (41.5%) lived in households with only wireless telephones. Approximately one-third (33.1%) of adults aged 18-24 years lived in households with only wireless telephones.
- As age increased from 30 years, the percentage of adults living in

households with only wireless telephones decreased: 21.6% for adults aged 30-44 years; 11.6% for adults aged 45-64 years; and 3.3% for adults aged 65 years and over. However, as shown in [Table 2](#) and [Figure 2](#), the percentage of wireless-only adults within each age group has increased over time.

- Men (20.0%) were more likely than women (17.0%) to be living in households with only wireless telephones.
- Adults living in poverty (30.9%) and adults living near poverty (23.8%) were more likely than higher income adults (16.0%) to be living in households with only wireless telephones.
- Adults living in the South (21.3%) and Midwest (20.8%) were more likely than adults living in the Northeast (11.4%) or West (17.2%) to be living in households with only wireless telephones.
- Non-Hispanic white adults (16.6%) were less likely than Hispanic adults (25.0%) or non-Hispanic black adults (21.4%) to be living in households with only wireless telephones.

Wireless-Mostly Households

Among households with both landline and cellular telephones, 24.4% received all or almost all calls on the cellular telephones, based on data for the period July through December 2008. These wireless-mostly households make up 14.5% of all households.

The percentage of adults living in wireless-mostly households has been increasing (see [Table 3](#)). During the last 6 months of 2008, approximately 35 million adults (15.4%) lived in wireless-mostly households. Although this prevalence estimate was not significantly different from the estimate for the first 6 months of 2008 (14.4%), it was significantly greater than the estimate for the first 6 months of 2007 (12.6%).

[Table 3](#) presents the percentage of adults living in wireless-mostly households by selected demographic characteristics and by survey time period. For the period July through December 2008,

- Adults with college degrees (18.0%) were more likely to be living in wireless-mostly households than

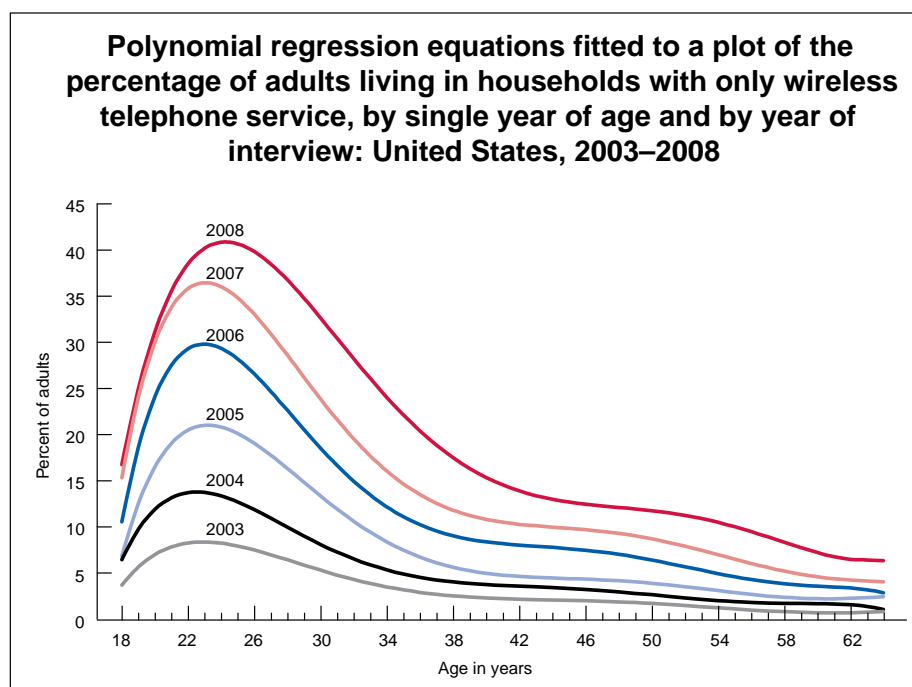


Figure 2



were high school graduates (13.2%) or adults with less education (9.8%).

- Adults living with children (19.2%) were more likely than adults living alone (12.2%) or with only adult relatives (13.2%) to be living in wireless-mostly households.
- Adults living in poverty (9.5%) and adults living near poverty (11.3%) were less likely than higher income adults (18.2%) to be living in wireless-mostly households.
- Adults living in metropolitan areas (15.8%) were more likely to be living in wireless-mostly households than were adults living in more rural areas (13.4%).

Selected Health Measures by Household Telephone Status

Most major survey research organizations, including NCHS, do not include wireless telephone numbers when conducting random-digit-dial telephone surveys. Therefore, the inability to reach households with only wireless telephones (or with no telephone service) has potential implications for results from health surveys, political polls, and other research conducted using random-digit-dial telephone surveys. Coverage bias may exist if there are differences between persons with and without landline telephones for the substantive variables of interest.

The NHIS Early Release Program updates and releases estimates for 15 key adult health indicators every 3 months. **Table 4** presents estimates by household telephone status (landline, wireless-only, or without any telephone service) for all but two of these measures. (“Pneumococcal vaccination” and “personal care needs” were not included because these indicators are limited to adults aged 65 years and over.) For the period July through December 2008,

- The prevalence of binge drinking (i.e., having five or more alcoholic drinks in 1 day during the past year)

among wireless-only adults (36.7%) was nearly twice as high as the prevalence among adults living in landline households (19.7%). Wireless-only adults were also more likely to be current smokers than were adults living in landline households.

- Compared with adults living in landline households, wireless-only adults were more likely to report that their health status was excellent or very good, were more likely to engage in regular leisure-time physical activity, and were less likely to have ever been diagnosed with diabetes.
- The percentage without health insurance coverage at the time of the interview among wireless-only nonelderly adults (27.5%) was considerably higher than the percentage among nonelderly adults living in landline households (16.4%).
- Compared with adults living in landline households, wireless-only adults were more likely to have experienced financial barriers to obtaining needed health care, and they were less likely to have a usual place to go for medical care. Wireless-only adults were also less likely to have received an influenza vaccination during the previous year.
- Wireless-only adults (47.0%) were more likely than adults living in landline households (37.1%) to have ever been tested for HIV, the virus that causes AIDS.

Conclusions

The potential for bias due to undercoverage remains a real and growing threat to surveys conducted only on landline telephones. For more information about the potential implications for health surveys that are based on landline telephone interviews, see

- Blumberg SJ, Luke JV. Coverage bias in traditional telephone surveys

of low-income and young adults. *Public Opin Q* 71:734-49. 2007.

- Blumberg SJ, Luke JV, Cynamon ML. Telephone coverage and health survey estimates: Evaluating the need for concern about wireless substitution. *Am J Public Health* 96:926-31. 2006.
- Blumberg SJ, Luke JV, Cynamon ML, Frankel MR. Recent trends in household telephone coverage in the United States. In: Lepkowski JM et al., eds., *Advances in telephone survey methodology*. New York: John Wiley and Sons, 56-86. 2008.

The potential for bias may differ from one state to another because the prevalence of wireless-only households varies substantially across states. For more information about state-level prevalence estimates from the 2007 NHIS, see

- Blumberg SJ, Luke JV, Davidson G, Davern ME, Yu T, Soderberg K. Wireless substitution: State-level estimates from the National Health Interview Survey, January-December 2007. *National health statistics report*; no 14. Hyattsville, MD: National Center for Health Statistics. 2009.

For More Information

For more information about the National Health Interview Survey and the NHIS Early Release Program, or to find other Early Release reports, please see the following websites:

- <http://www.cdc.gov/nchs/nhis.htm>
- <http://www.cdc.gov/nchs/about/major/nhis/releases.htm>

Suggested Citation

Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December 2008. National Center for Health Statistics. May 2009. Available from: <http://www.cdc.gov/nchs/nhis.htm>.



Table 1. Percent distribution of household telephone status, by date of interview, for households, adults, and children: United States, January 2005-December 2008

Date of interview	Number of households (unweighted)	Household telephone status						Total
		Landline households with a wireless telephone	Landline households without a wireless telephone	Landline households with unknown wireless telephone status	Nonlandline households with unknown wireless telephone status	Wireless-only households	Phoneless households	
		Percent of households						
January-June 2005	18,301	42.4	34.4	13.2	0.8	7.3	1.9	100.0
July-December 2005	20,088	42.6	32.4	13.8	0.8	8.4	1.9	100.0
January-June 2006	16,009	45.6	30.9	10.3	0.7	10.5	2.0	100.0
July-December 2006	13,056	44.3	29.6	10.2	0.8	12.8	2.2	100.0
January-June 2007 ¹	15,996	58.9	23.8	1.7	0.1	13.6	1.9	100.0
July-December 2007	13,083	58.8	21.8	1.3	0.1	15.8	2.2	100.0
January-June 2008	16,070	58.5	20.6	0.9	0.0	17.5	2.5	100.0
July-December 2008	12,597	59.6	17.4	0.9	0.0	20.2	1.9	100.0
95% confidence interval ²		57.96 - 61.15	16.22 - 18.57	0.68 - 1.23	0.01 - 0.11	18.84 - 21.69	1.64 - 2.18	
	Number of adults (unweighted)	Percent of adults						
January-June 2005	34,047	46.1	31.5	13.5	0.7	6.7	1.6	100.0
July-December 2005	37,622	46.4	29.7	13.9	0.7	7.7	1.7	100.0
January-June 2006	29,842	49.5	28.2	10.4	0.6	9.6	1.8	100.0
July-December 2006	24,473	48.1	27.3	10.5	0.7	11.8	1.7	100.0
January-June 2007 ¹	29,982	63.3	20.8	1.7	0.1	12.6	1.6	100.0
July-December 2007	24,514	63.2	19.1	1.2	0.1	14.5	1.9	100.0
January-June 2008	30,150	63.0	17.9	0.8	0.0	16.1	2.1	100.0
July-December 2008	23,726	63.7	15.1	1.0	0.0	18.4	1.7	100.0
95% confidence interval ²		62.09 - 65.32	13.99 - 16.29	0.73 - 1.31	0.01 - 0.12	17.13 - 19.84	1.47 - 2.03	

See footnotes at end of table.



Date of interview	Number of children (unweighted)	Household telephone status						Total
		Landline households with a wireless telephone	Landline households without a wireless telephone	Landline households with unknown wireless telephone status	Nonlandline households with unknown wireless telephone status	Wireless-only households	Phoneless households	
		Percent of children						
January-June 2005	12,903	49.3	27.0	15.8	0.7	5.8	1.5	100.0
July-December 2005	13,883	50.5	23.9	15.2	0.9	7.6	1.8	100.0
January-June 2006	11,670	53.4	23.8	11.5	0.9	8.6	1.9	100.0
July-December 2006	9,165	51.9	21.5	11.9	0.9	11.6	2.3	100.0
January-June 2007 ¹	11,532	68.3	16.4	1.6	0.0	11.9	1.7	100.0
July-December 2007	9,122	68.5	13.8	1.1	0.0	14.4	2.1	100.0
January-June 2008	11,238	67.3	12.6	0.6	0.0	17.0	2.5	100.0
July-December 2008	8,635	67.1	11.1	0.7	0.0	18.7	2.4	100.0
95% confidence interval ²		64.87 - 69.24	9.81 - 12.60	0.43 - 1.05	0.00 - 0.10	17.05 - 20.54	1.72 - 3.21	

0.0 means quantity is more than zero but less than 0.05.

¹ Questionnaire changes that occurred in 2007 should be considered when evaluating recent trends in household telephone status. See text for more information about these changes.

² Confidence intervals refer to the time period July through December 2008.

DATA SOURCE: *National Health Interview Survey, January 2005-December 2008*. Data are based on household interviews of a sample of the civilian, noninstitutionalized population.



Table 2. Percentage of adults living in wireless-only households, by selected demographic characteristics and by calendar half-years: United States, January 2005-December 2008

Demographic characteristic	Calendar half-year								95% confidence interval ²
	Jan – Jun 2005	Jul – Dec 2005	Jan – Jun 2006	Jul – Dec 2006	Jan – Jun 2007 ¹	Jul – Dec 2007	Jan – Jun 2008	Jul – Dec 2008	
Percent									
Race/ethnicity									
Hispanic or Latino, any race(s)	8.5	11.2	11.2	15.3	18.0	19.3	21.6	25.0	22.70 - 27.48
Non-Hispanic white, single race	6.5	6.9	9.0	10.8	11.3	12.9	14.6	16.6	15.20 - 18.17
Non-Hispanic black, single race	6.6	8.5	10.5	12.8	14.3	18.3	18.5	21.4	18.81 - 24.15
Non-Hispanic Asian, single race	5.3	6.7	10.2	11.8	10.6	12.1	16.5	17.8	14.21 - 22.18
Non-Hispanic other single race	*11.1	*8.0	9.8	17.2	22.8	17.5	12.8	17.3	10.73 - 26.68
Non-Hispanic multiple race	8.1	11.5	15.4	14.6	17.3	22.8	22.3	22.5	16.33 - 30.26
Age									
18-24 years	16.6	17.5	22.6	25.2	27.9	30.6	31.4	33.1	29.33 - 37.16
25-29 years	16.5	19.8	22.3	29.1	30.6	34.5	35.7	41.5	38.34 - 44.67
30-44 years	6.5	7.8	9.4	12.4	12.6	15.5	19.1	21.6	19.87 - 23.40
45-64 years	3.2	3.7	5.3	6.1	7.1	8.0	9.2	11.6	10.50 - 12.76
65 years and over	0.9	1.2	1.3	1.9	2.0	2.2	2.8	3.3	2.68 - 3.98
Sex									
Male	7.5	8.6	10.7	13.1	13.8	15.9	18.0	20.0	18.53 - 21.59
Female	6.0	6.9	8.5	10.5	11.5	13.2	14.4	17.0	15.71 - 18.32
Education									
Some high school or less	6.7	8.0	8.3	12.9	14.6	15.4	16.1	18.8	16.90 - 20.79
High school graduate or GED ³	6.9	7.6	9.6	10.6	11.8	13.4	15.2	17.8	16.19 - 19.52
Some post-high school, no degree	8.2	9.4	11.9	14.4	14.7	17.0	19.0	20.1	18.35 - 22.02
4-year college degree or higher	5.5	6.3	8.5	10.1	10.8	12.7	14.3	17.7	15.48 - 20.16
Employment status last week									
Working at a job or business	8.0	9.2	11.6	13.9	15.0	16.6	19.0	21.5	19.96 - 23.21
Keeping house	5.1	6.1	7.1	8.6	9.5	12.8	12.6	16.0	13.86 - 18.50
Going to school	10.8	15.5	17.3	20.4	21.3	28.9	21.5	23.5	17.98 - 30.21
Something else (incl. unemployed)	3.6	3.7	4.2	6.2	6.4	7.6	8.9	11.0	9.77 - 12.26

See footnotes at end of table.



Demographic characteristic	Calendar half-year								95% confidence interval ²
	Jan – Jun 2005	Jul – Dec 2005	Jan – Jun 2006	Jul – Dec 2006	Jan – Jun 2007 ¹	Jul – Dec 2007	Jan – Jun 2008	Jul – Dec 2008	
	Percent								
Household structure									
Adult living alone	11.2	12.3	16.2	18.2	20.3	22.9	24.6	28.1	25.69 - 30.75
Unrelated adults, no children	36.0	33.6	44.2	54.0	55.3	56.9	63.1	60.6	48.32 - 71.72
Related adults, no children	5.3	5.9	7.1	8.5	9.8	11.0	12.5	14.7	13.21 - 16.38
Adult(s) with children	5.4	7.0	8.6	10.5	11.3	13.0	15.1	17.2	15.69 - 18.95
Household poverty status ⁴									
Poor	11.8	14.2	15.8	22.4	21.6	27.4	26.0	30.9	27.59 - 34.48
Near poor	10.8	12.7	14.4	15.7	18.5	20.8	22.6	23.8	21.29 - 26.46
Not poor	6.2	7.0	9.4	11.3	10.6	11.9	14.2	16.0	14.55 - 17.60
Geographic region ⁵									
Northeast	4.1	4.7	7.2	8.6	8.8	10.0	9.8	11.4	8.92 - 14.46
Midwest	7.2	8.8	10.2	11.4	14.0	15.3	17.8	20.8	17.74 - 24.24
South	7.6	9.6	11.4	14.0	14.9	17.1	19.6	21.3	19.24 - 23.62
West	7.0	6.2	7.8	11.0	10.9	12.9	13.7	17.2	14.88 - 19.73
Metropolitan statistical area status									
Metropolitan	7.7	8.7	10.3	12.7	13.7	15.5	17.5	19.7	18.19 - 21.35
Not metropolitan	4.1	5.1	7.0	8.0	8.4	10.0	10.9	13.5	11.43 - 15.77
Home ownership status ⁶									
Owned or being bought	3.1	3.8	5.1	5.8	6.7	7.3	9.0	9.9	8.84 - 10.99
Renting	16.7	19.3	22.5	26.4	28.2	30.9	33.6	39.2	36.82 - 41.61
Other arrangement	10.7	8.4	10.7	*20.3	22.5	23.2	23.4	17.7	12.60 - 24.36
Number of wireless-only adults in survey sample (unweighted)	2,263	2,918	2,804	2,878	3,819	3,558	4,939	4,426	

* Estimate has a relative standard error greater than 30% and does not meet National Center for Health Statistics (NCHS) standards for reliability.

¹ Questionnaire changes that occurred in 2007 should be considered when evaluating recent trends in household telephone status. See text for more information about these changes.

² Confidence intervals refer to the time period July through December 2008.

³ GED is General Educational Development high school equivalency diploma.

⁴ Poverty status is based on household income and household 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. NCHS imputes income when income is unknown, but the imputed income file is not available until a few months after the annual release of National Health Interview Survey microdata. For households with multiple families, household income and household size were calculated as the sum of the multiple measures of family income and family size.

⁵ In 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 Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania. *Midwest* includes Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska. *South* includes Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Oklahoma, Arkansas, and Texas. *West* includes Washington, Oregon, California, Nevada, New Mexico, Arizona, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

⁶ For households with multiple families, home ownership status was determined by considering the reported home ownership status for each family. If any family reported owning the home, then the household level variable was classified as "owned or being bought" for all persons living in the household. If one family reported renting the home and another family reported "other arrangement," then the household level variable was classified as "other arrangement" for all persons living in the household.

DATA SOURCE: *National Health Interview Survey, January 2005-December 2008*. Data are based on household interviews of a sample of the civilian, noninstitutionalized population.



Table 3. Percentage of adults living in wireless-mostly households, by selected demographic characteristics and by calendar half-years: United States, January 2007-December 2008

Demographic characteristic	Calendar half-year				95% confidence interval ¹
	Jan – Jun 2007	Jul – Dec 2007	Jan – Jun 2008	Jul – Dec 2008	
	Percent ²				
Total	12.6	14.0	14.4	15.4	14.30 - 16.46
Race/ethnicity					
Hispanic or Latino, any race(s)	13.2	14.5	16.0	15.9	13.66 - 18.46
Non-Hispanic white, single race	12.3	13.2	14.2	14.9	13.77 - 16.07
Non-Hispanic black, single race	11.9	15.1	13.3	14.7	12.21 - 17.64
Non-Hispanic Asian, single race	16.0	20.3	16.4	20.3	16.93 - 24.23
Non-Hispanic other single race	14.6	*8.6	*10.1	15.5	8.75 - 26.07
Non-Hispanic multiple race	14.6	19.7	17.7	24.2	17.93 - 31.78
Age					
18-24 years	17.3	18.2	19.2	18.8	15.97 - 22.00
25-29 years	17.2	19.7	17.3	18.3	15.95 - 20.97
30-44 years	15.5	17.3	18.2	19.0	17.54 - 20.59
45-64 years	11.5	13.0	13.8	15.4	14.20 - 16.72
65 years and over	3.4	3.9	4.4	4.9	4.00 - 5.99
Sex					
Male	13.2	14.3	14.9	15.4	14.24 - 16.65
Female	12.0	13.6	14.0	15.2	14.25 - 16.41
Education					
Some high school or less	8.0	8.7	10.0	9.8	8.37 - 11.42
High school graduate or GED ³	10.6	12.7	12.5	13.2	11.95 - 14.59
Some post-high school, no degree	15.7	16.6	17.0	18.6	16.78 - 20.54
4-year college degree or higher	14.9	16.2	17.1	18.0	16.40 - 19.50
Employment status last week					
Working at a job or business	15.5	16.8	17.3	18.4	17.22 - 19.72
Keeping house	9.3	10.4	11.9	11.9	10.08 - 13.92
Going to school	17.2	20.4	25.2	21.5	15.46 - 29.04
Something else (incl. unemployed)	5.3	6.7	6.6	7.8	6.82 - 8.91
Household structure					
Adult living alone	10.8	10.7	10.1	12.2	10.28 - 14.37
Unrelated adults, no children	13.9	20.1	*15.4	21.3	12.96 - 32.97
Related adults, no children	11.6	12.1	12.8	13.2	11.97 - 14.43
Adult(s) with children	14.4	17.2	18.1	19.2	17.64 - 20.93
Household poverty status ⁴					
Poor	8.4	8.6	10.8	9.5	6.69 - 13.32
Near poor	9.7	11.4	10.3	11.3	9.40 - 13.49
Not poor	14.8	15.9	17.1	18.2	16.91 - 19.53
Geographic region ⁵					
Northeast	11.3	11.7	13.8	12.0	10.33 - 13.98
Midwest	10.6	13.3	12.6	13.2	11.50 - 15.11
South	13.8	14.3	14.6	16.2	14.54 - 18.08
West	13.7	15.9	16.4	18.7	16.20 - 21.59
Metropolitan statistical area status					
Metropolitan	13.2	14.7	15.0	15.8	14.63 - 17.14
Not metropolitan	10.2	10.9	12.1	13.4	11.67 - 15.40

See footnotes at end of table.



Demographic characteristic	Calendar half-year				95% confidence interval ¹
	Jan – Jun 2007	Jul – Dec 2007	Jan – Jun 2008	Jul – Dec 2008	
Home ownership status ⁶					
Owned or being bought	12.1	14.0	14.7	15.9	14.74 - 17.17
Renting	13.9	13.8	13.9	13.0	11.36 - 14.93
Other arrangement	12.2	14.1	14.8	24.6	14.53 - 38.52
Number of adults in survey sample who live in landline households with wireless telephones (unweighted)	3,733	3,435	4,302	3,663	

* Estimate has a relative standard error greater than 30% and does not meet National Center for Health Statistics (NCHS) standards for reliability.

¹ Confidence intervals refer to the estimate of the percentage of adults living in wireless-mostly households for the time period July through December 2008.

² The sum of the percentage of adults in households that receive all or nearly all calls on wireless phones (shown here) and the percentage of adults in households that receive some or very few calls on wireless phones (data not shown) is equal to the percentage of adults living in landline households with wireless telephones (see Table 1).

³ GED is General Educational Development high school equivalency diploma.

⁴ Poverty status is based on household income and household 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. NCHS imputes income when income is unknown, but the imputed income file is not available until a few months after the annual release of National Health Interview Survey microdata. For households with multiple families, household income and household size were calculated as the sum of the multiple measures of family income and family size.

⁵ In 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 Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania. *Midwest* includes Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska. *South* includes Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Oklahoma, Arkansas, and Texas. *West* includes Washington, Oregon, California, Nevada, New Mexico, Arizona, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

⁶ For households with multiple families, home ownership status was determined by considering the reported home ownership status for each family. If any family reported owning the home, then the household level variable was classified as "owned or being bought" for all persons living in the household. If one family reported renting the home and another family reported "other arrangement," then the household level variable was classified as "other arrangement" for all persons living in the household.

DATA SOURCE: *National Health Interview Survey, January 2007-December 2008*. Data are based on household interviews of a sample of the civilian, noninstitutionalized population.



Table 4. Prevalence rates (and 95% confidence intervals) for selected measures of health-related behaviors, health status, health care service use, and health care access for adults 18 years of age and over, by household telephone status: United States, July-December 2008

Measure	Household telephone status		
	Landline household ¹	Wireless-only household	Phoneless household
Percent (95% confidence interval)			
Health-related behaviors			
Five or more alcoholic drinks in 1 day at least once in past year ²	19.7 (18.32 - 21.25)	36.7 (33.87 - 39.70)	21.5 (14.73 - 30.19)
Current smoker ³	18.3 (17.13 - 19.60)	26.5 (24.36 - 28.74)	28.4 (21.57 - 36.35)
Engaged in regular leisure-time physical activity ⁴	31.9 (30.32 - 33.50)	38.0 (34.67 - 41.50)	19.5 (12.94 - 28.41)
Health status			
Health status described as excellent or very good ⁵	59.8 (58.18 - 61.39)	67.8 (65.42 - 70.05)	44.0 (34.69 - 53.81)
Experienced serious psychological distress in past 30 days ⁶	3.0 (2.57 - 3.52)	3.3 (2.52 - 4.29)	*7.2 (3.65 - 13.82)
Obese (adults 20 years of age or older) ⁷	28.8 (27.44 - 30.22)	26.0 (23.63 - 28.56)	28.3 (20.78 - 37.15)
Asthma episode in the past year ⁸	3.8 (3.34 - 4.37)	4.5 (3.47 - 5.90)	*3.1 (1.39 - 6.97)
Ever diagnosed with diabetes ⁹	9.4 (8.67 - 10.26)	4.8 (3.75 - 6.09)	6.5 (3.78 - 11.07)
Health care service use			
Received influenza vaccine during past year ¹⁰	36.0 (34.48 - 37.65)	19.0 (16.57 - 21.63)	14.7 (9.99 - 21.10)
Ever been tested for HIV ¹¹	37.1 (35.55 - 38.61)	47.0 (43.98 - 50.02)	39.7 (30.29 - 49.97)
Health care access			
Has a usual place to go for medical care ¹²	87.0 (85.67 - 88.28)	72.0 (68.62 - 75.13)	65.0 (55.92 - 73.08)
Failed to obtain needed medical care in past year due to financial barriers ¹³	7.5 (6.69 - 8.30)	14.9 (12.96 - 17.02)	12.9 (8.07 - 20.10)
Currently uninsured (adults 18-64 years of age) ¹⁴	16.4 (15.07 - 17.86)	27.5 (25.12 - 29.96)	46.7 (36.41 - 57.21)
Number of adults in survey sample (unweighted)	7,510	2,133	198

* Estimate has a relative standard error greater than 30% and does not meet National Center for Health Statistics standards for reliability.

¹ In this analysis, landline households include households that also have wireless telephone service.

² A year is defined as the 12 months prior to the interview. The analyses excluded adults with unknown alcohol consumption (about 2% of respondents each year).

³ Current smokers were defined as those who had smoked more than 100 cigarettes in their lifetime and now smoke every day or some days. The analyses excluded persons with unknown smoking status (about 1% of respondents each year).

⁴ Regular leisure-time physical activity is defined as engaging in light-moderate leisure-time physical activity for greater than or equal to 30 minutes at a frequency greater than or equal to five times per week or engaging in vigorous leisure-time physical activity for greater than or equal to 20 minutes at a frequency greater than or equal to three times per week. Persons who were known to have not met the frequency recommendations are classified as "not regular," regardless of duration. The analyses excluded persons with unknown physical activity participation (about 3% of respondents each year).

⁵ Health status data were obtained by asking respondents to assess their own health and that of family members living in the same household as excellent, very good, good, fair, or poor. The analyses excluded persons with unknown health status (about 0.5% of respondents each year).

⁶ Six psychological distress questions are included in the National Health Interview Survey. These questions ask how often during the past 30 days a respondent experienced certain symptoms of psychological distress (feeling so sad that nothing could cheer



you up, nervous, restless or fidgety, hopeless, worthless, that everything was an effort). The response codes of the six items for each person are summed to yield a scale with a 0-24 range. A value of 13 or more for this scale indicates that at least one symptom was experienced “most of the time” and is used here to define serious psychological distress.

⁷ Obesity is defined as a body mass index (BMI) of 30 kg/m² or more. The measure is based on self-reported height and weight. The analyses excluded people with unknown height or weight (about 4% of respondents each year).

⁸ Information on an episode of asthma or an asthma attack during the past year is self-reported by adults aged 18 years and over. A year is defined as the 12 months prior to the interview. The analyses excluded people with unknown asthma episode status (about 0.3% of respondents each year).

⁹ Prevalence of diagnosed diabetes is based on self-report of ever having been diagnosed with diabetes by a doctor or other health professional. Persons reporting “borderline” diabetes status and women reporting diabetes only during pregnancy were not coded as having diabetes in the analyses. The analyses excluded persons with unknown diabetes status (about 0.1% of respondents each year).

¹⁰ Receipt of flu shots and receipt of nasal spray flu vaccinations were included in the calculation of flu vaccination estimates. Responses to the flu vaccination questions cannot be used to determine when the subject received the flu vaccination during the 12 months preceding the interview. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of a flu vaccination is seasonal. The analyses excluded those with unknown flu vaccination status (about 1% of respondents each year).

¹¹ Individuals who received human immunodeficiency virus (HIV) testing solely as a result of blood donation were considered not to have been tested for HIV. The analyses excluded those with unknown HIV test status (about 4% of respondents each year).

¹² The usual place to go for medical care does not include a hospital emergency room. The analyses excluded persons with an unknown usual place to go for medical care (about 0.6% of respondents each year).

¹³ A year is defined as the 12 months prior to the interview. The analyses excluded persons with unknown responses to the question on failure to obtain needed medical care due to cost (about 0.5% of respondents each year).

¹⁴ A person was defined as uninsured if he or she did not have any private health insurance, Medicare, Medicaid, State Children’s Health Insurance Program (SCHIP), state-sponsored or other government-sponsored health plan, or military plan at the time of the interview. A person was also defined as uninsured if he or she had only Indian Health Service coverage or had only a private plan that paid for one type of service such as accidents or dental care. The data on health insurance status were edited using an automated system based on logic checks and keyword searches. The analyses excluded persons with unknown health insurance status (about 1% of respondents each year).

DATA SOURCE: *National Health Interview Survey, July-December 2008*. Data are based on household interviews of a sample of the civilian, noninstitutionalized population.