Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix Metropolitan Statistical Area	)	**WC Docket No. 09-135**
Numbering Resource Utilization and Forecast (NRUF) Reports and Local Number Portability (LNP) Reports to be Placed into the Record, Subject to First Protective Order	)	**CC Docket No. 99-200**

COMMENTS OF VERIZON[1]

Verizon does not object to importing Numbering Resource Utilization and Forecast (NRUF) and local number portability (LNP) data related to wireless carriers into this record, subject to the appropriate confidentiality protection. But in doing so, the Commission should also recognize that any data the Commission uses to evaluate wireless competition in this proceeding should sufficiently measure *all* competition between wireless and landlines.

LNP and NRUF data will tell the Commission little, however, about the massive migration of usage from landlines to wireless. Other recent data, including the most recent wireless substitution report from the Centers for Disease Control (CDC), confirm the trend in this migration. According to the Commission's 2010 Wireless Competition Report, the wireless penetration in the United States reached 90 percent with over 277 million mobile wireless

[1] The Verizon companies participating in this filing ("Verizon") are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

subscribers as of the end of 2008.[2] The CDC's most recent wireless substitution data show that around 40 percent of American homes use a wireless phone either exclusively or predominantly.[3] Wireless substitution rates are even higher for younger demographic groups, with more than half of Americans between the ages of 18 and 34 residing in households where wireless service is used either exclusively or predominantly.[4] Independent analysts predict that the number of households relying primarily or exclusively on wireless phones will reach about 54 percent in 2011 and more than 80 percent by 2019.[5] The Nielsen Company has likewise predicted that "cord-cutting households will continue to grow in numbers as consumers find wireless cellular service meeting their needs."[6]

These (and other) government and third party data sources provide the Commission with superior information to determine the scope of wireless competition. In fact, the Commission even relied upon the CDC's wireless substitution data in discussing intermodal competition in its 2010 Wireless Competition Report.[7] In addition, other available data measure wireless minutes,

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[2] *Implementation of Section 602(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fourteenth Report, WT Docket No. 09-66, Executive Summary at 8 (May 20, 2010) ("*2010 Wireless Competition Report*").

[3] Stephen Blumberg and Julian V. Lake, Centers for Disease Control, *Wireless Substitution: Early Release of the Estimates From the National Health Interview Survey, July-December 2009*, http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201005.pdf, at 1, Tables 1, 2, and 5 (May 12, 2010) ("*CDC Study*") (24.5 percent of American households are wireless only and about 14.9 percent of total households have landlines, but rely on wireless phones for all or almost all of their calls). Attached as Exhibit 1.

[4] *See CDC Study* at Tables 2 and 5.

[5] *See* Bank of America/Merrill Lynch, *Wireline Substitution Rate Normalized in 2H09* at 1 (May 12, 2010); Sharon Armbrust, SNL Financial, *80% of US Household Voice Traffic Mostly Wireless in 10 Years*, at 1 (Mar. 18, 2010).

[6] Nielsen Company, *Communication Trends: Highlights from the 2009 Convergence Audit*, http://blog.nielsen.com/nielsenwire/wp-content/uploads/2009/12/09-Nielsen-Convergence-Audit.pdf , at 4 (Dec. 2009).

[7] *See 2010 Wireless Competition Report*, ¶¶ 339, 340.

which now far surpass landline totals.[8] Neither LNP nor NRUF data measure wireless minutes. Further, LNP data tell almost nothing about even cut-the-cord competition since there is no need to port a landline number when a customer already has a wireless phone they consider their primary contact number.

Regardless, in importing NRUF and LNP data into this record, the Commission should appropriately safeguard this information. However, the existing protective order does not provide the same level of protection that this data has received in past Commission proceedings. For example, the existing protective order would allow wider access to this data than the Commission has allowed in other proceedings. Before placing any confidential LNP or NRUF data into this record, the Commission should issue a new protective order that safeguards the data appropriately.

I. The Commission's Analysis of Wireless Competition Should Be Based on Data That Sufficiently Measures *All* Competition Between Wireless Phones and Landlines

The CDC's latest wireless substitution data confirm that a significant number of Americans have shifted most, if not all, of their minutes from landlines to wireless phones. As noted above, around 40 percent of American households rely predominately or exclusively on wireless phones.[9] Because wireless substitution skews with age, the wireless substitution rates are even higher for younger Americans. In fact, nearly sixty percent of Americans between the ages of 18 to 34 already reside in households that rely exclusively or predominately on wireless

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[8] *See* CTIA Wireless Quick Facts, http://www.ctia.org/advocacy/research/index.cfm/AID/10323 (last visited May 18, 2010) ("*CTIA Quick Facts*") (reporting 2.3 trillion annualized wireless minutes for 2009); Dr. Robert Roche and Lesley O'Neil, *CTIA's Wireless Industry Indices, Semi-Annual Data Survey Results: A Comprehensive Report From CTIA Analyzing the U.S. Wireless Industry Year-End 2008 Results*, Chart 58 and Chart 59 (May 2009) ("*CTIA 2009 Report")*(respectively reporting for 2007 about 2.1 trillion wireless minutes of use and about 348 billion interstate switched access minutes and about 593 billion wireless interstate minutes of use and about 349 billion interstate switched access minutes).

phones, with some age ranges in that span even higher.[10] Given the extensive shift to wireless usage, it would not be credible to exclude any wireless competition from the Commission's analysis in this proceeding. Nor would it be credible for the Commission to base its analysis on data that do not sufficiently measure *all* wireless competition.

First, neither LNP nor NRUF data tell the Commission anything about usage of wireless versus wireline phones. As the CDC's data demonstrate, a significant number of Americans have shifted all or most of their landline minutes to wireless phones. Indeed, in 2009 about 2.3 trillion wireless minutes were reported, a more than sixty fold increase over the 37.8 billion wireless minutes reported in 1995.[11] Independent analysts have estimated that wireless minutes exceeded wireline minutes by as early as 2007.[12] CTIA has confirmed these estimates, noting that for 2007 about 593 billion interstate wireless minutes were reported, which is more than one and a half times the number of interstate wireline access minutes reported in 2007.[13] And, as analysts correctly predicted, the recession has driven and continues to drive increases in wireless substitution as consumers eliminate their landlines to reduce their expenses.[14] Since customer

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[9] *See CDC Study* at 1.

[10] *See id*. at Table 2 and Table 5 (reporting that 57.7 percent of adults between the ages of 18-24 have cut the cord or receive all or mostly all calls on wireless phones, 65 percent of households between the ages of 25 to 29 have cut the cord or receive all or mostly all calls on wireless phones, and 56.7 percent of adults between the ages of 30-34 have cut the cord or receive all or mostly all calls on wireless phones).

[11] *See CTIA Quick Facts*.

[12] *See* Thomas Seitz, Lehman Brothers, *Is the Currency Uncertainty Turning ?*, at 9 (Mar. 27, 2008) (estimating over 2 trillion wireless minutes and under 2 trillion wireline minutes for 2007).

[13] *See CTIA 2009 Report* at Chart 59 (noting that in 2007 there were about 593 billion wireless interstate minutes of use and about 349 billion interstate switched access minutes).

[14] *See, e.g.,* Simon Flannery et al., Morgan Stanley, *Telecom Services Wireless Substitution Reaches 25% in 2009; Raising Forecasts Again* (Feb. 15, 2010) ("We expect growth in wireless substitution to continue along a similar pace, as economic pressures cause individuals to become more cost-conscious and trim unnecessary expenditures). Alan Fram, Associated Press, *Fifth of U.S. Homes Opt for Cell Phones Only*, http://www.msnbc.msn.com/id/30601416 (May 6, 2009) (last visited May 24, 2010) (noting that "[f]or the first time, the number of U.S. households

behavior is driven by usage, this data is relevant to determining the competitive pressure that wireless exerts on landline services.

Second, while both NRUF and LNP data provide some information about wireless line purchases, neither gives a complete picture. NRUF data provide raw numbers of assigned wireless numbers, which may be helpful as one benchmark of competition. LNP data provide even less information. Specifically, it can tell the Commission the extent to which there is porting of telephone numbers from wireline to wireless providers, but that data significantly understates the abandonment of wireline service.

Much of the wireless substitution in the marketplace does not involve the porting of landline telephone numbers. Most cut-the-cord customers already viewed wireless phones as their primary line even before they abandoned their wireline service. The usage data noted above and the CDC data on consumers that receive all or almost all calls on their wireless phones even when they still have landline make clear that even before cutting the cord, many consumers are no longer relying on their landline phones as the primary phone number. In addition, many younger Americans who are establishing their first household are doing so without the use of a landline phone, so that there is not even a number to port for them. Data from the CDC and the Commission's own *2009 Wireless Competition Report* confirm that the number of adults living wireless only households far exceeds the number of wireline telephone numbers ported to wireless providers.[15] Between December 2003 and December 2008, about 3 million wireless

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opting for cell phones outnumber those with only traditional landlines in a high-tech shift accelerated by the recession"); Reinhardt Krause, Investor's Business Daily, *Recession Expected to Prod More Consumers to Cut the Cord*, http://www.cellular-news.com/story/34974.php (Dec. 2, 2008) (noting that "[t]he slowing U.S. economy will likely speed up the ongoing shift to wireless-only phone service as consumers cut back on spending").

[15] *Implementation of Section 6002(b) of the Budget Reconciliation Act, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Thirteenth Report, 24 FCC Rcd 6485 (2009) ("*2009 Wireless Competition Report*").

subscribers ported wireline telephone numbers to wireless providers.[16] The CDC reported that by December 2008, 41 million adults resided in households that have cut the cord, which is more than thirteen times the total number wireline telephone numbers ported to wireless providers by that same date.[17] With the dramatic growth rate in cut-the-cord households, this disparity has grown larger over time, making LNP data even less relevant for purposes of measuring competition between wireless and wireline service.

II. The Commission Should Appropriately Safeguard All Confidential LNP and NRUF Data it Places into the Record in this Proceeding

As the Commission's rules and public notice make clear, disaggregated, company-specific NRUF and LNP data are confidential and should be protected appropriately to minimize the potential for competitive harm to reporting providers.[18] The Commission has previously explained that this data should be protected because it "is highly sensitive 'commercial information' and would in effect provide competitors access to their business plans and strategies, location of customers, expansion plans and market growth."[19]

However, the existing protective order would not appropriately safeguard confidential LNP and NRUF data because it does not follow the Commission's established practices for protecting this data. In contrast to the protective orders used in other proceedings where this data has been used, the existing protective order does not limit access to confidential LNP and NRUF

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[16] *Id.* ¶ 134.

[17] Stephen Blumberg and Julian V. Lake, Centers for Disease Control, *Wireless Substitution: Early Release of the Estimates from the National Health Interview Survey, July-December 2008*, http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.pdf, at 1 (May 6, 2009).

[18] *Petition of Qwest Corp. for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*; *Numbering Resource Utilization and Forecast (NRUF) Reports and Local Number Portability (LNP) Reports to be Placed into the Record, Subject to First Protective Order*, Public Notice, WC Docket No. 09-135, CC Docket No. 99-200; DA 10-850, at 1 (May 13, 2010). *See also Numbering Resource Optimization*, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 7574, ¶ 78 (2000).

data to outside counsel, outside consultants and other non-commercial parties that do not play a role in competitive-decision making.[20] This additional level of protection is appropriate because of the highly-sensitive nature of this data. Prior to introducing any confidential LNP or NRUF data in this proceeding, the Commission should issue a new protective order that is consistent with the Commission's established practices for protecting this data.

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[19] *Id.* ¶ 78.

[20] *Compare Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160 (c) in the Phoenix, Arizona Metropolitan Statistical Area,* First Protective Order, 24 9503 , ¶ 3 (2009) (providing that confidential information may be disclosed to in-house counsel, outside counsel and outside consultants and experts who have signed the protective order) *with Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings LLC for Consent to Transfer Control of Licenses, Authorizations, and Spectrum Manager and de Fact Transfer Leasing Arrangements,* and *Petition for Declaratory Ruling That the Transaction is Consistent with Section 310 (b)(4) of the Communications Act,* Protective Order, 23 FCC Rcd 11401, ¶¶ 5, 8 (2008) (limiting access to confidential LNP and NRUF data to outside counsel and outside consultants that did not play a role in competitive decision making, and other non-commercial parties receiving express written authorization from the FCC); *Applications of PTI Pacifica, Inc. and ITE Overseas, Inc. For Consent to Assign Licenses,* Protective Order, 24 FCC Rcd 4629, ¶¶ 5, 8 (2009) (same); *Applications of AT&T Inc. and Centennial Communications Corp. For Consent to Transfer Control of Licenses, Authorizations, and Spectrum Leasing Arrangements,* Protective Order, 24 FCC Rcd 2913, ¶¶ 5, 8 (2009)(same).

CONCLUSION

For the foregoing reasons, the Commission's analysis of wireless competition should be based on data that sufficiently measures *all* wireless competition, and should, therefore, include the CDC's wireless substitution data. The Commission should also ensure that any confidential LNP and NRUF data it places into the record in this proceeding are appropriately safeguarded.

Respectfully submitted,

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May 24, 2010

EXHIBIT 1

(Released 05/12/2010)

Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2009

by Stephen J. Blumberg, Ph.D., and Julian V. Luke
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Overview

Preliminary results from the July–December 2009 National Health Interview Survey (NHIS) indicate that the number of American homes with only wireless telephones continues to grow. One of every four American homes (24.5%) had only wireless telephones (also known as cellular telephones, cell phones, or mobile phones) during the last half of 2009—an increase of 1.8 percentage points since the first half of 2009. In addition, one of every seven American homes (14.9%) had a landline yet received all or almost all calls on wireless telephones. 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 a family's telephone number reached a landline telephone. 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 identified as "wireless-only" if they include at least one wireless family and if there are no working landline

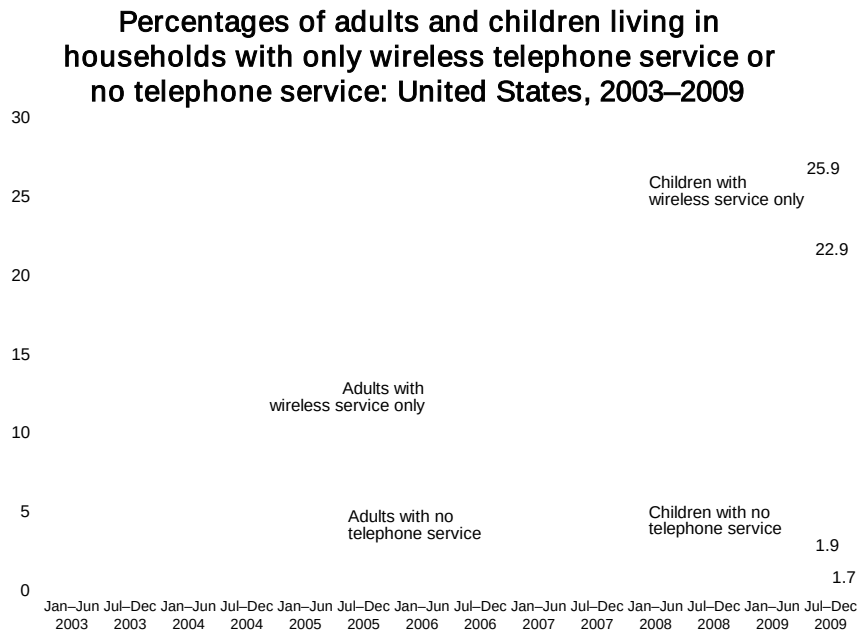

Figure 1

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 2009, information on household telephone status was obtained for 21,375 households that included at least one civilian adult or child. These households included 40,619 civilian adults aged 18 years and over and 14,984 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, because imputed income values are not available until a few months after the annual release of NHIS microdata. Household income was unknown for 12% 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 2009, data on household telephone status and selected health measures were collected from 17,539 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 a previous NCHS report (*Vital and Health Statistics*, series 2, no 130). To provide access to the most recent information from NHIS, estimates using the July–December 2009 data are being released prior to final data editing and final weighting. These estimates should be considered preliminary. If estimates are produced using the final data files, the estimates may differ slightly from those presented here.

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 such estimates.

Questionnaire Changes in 2007

From 2003 to 2006, NHIS 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 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 had 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 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 had fewer missing values since 2007 compared with prior years.

Telephone Status

In the last 6 months of 2009, one of every four households (24.5%) did not have a landline telephone but did have at least one wireless telephone (**Table 1**). Approximately 22.9% of all adults (approximately 52 million adults) lived in households with only wireless telephones; 25.9% of all children (more than 19 million children) lived in households with only wireless telephones.

The percentage of households that are wireless-only has been steadily increasing. The 4.3-percentage-point increase from the last 6 months of 2008 through the last 6 months of 2009 is nearly equivalent to the 4.4-percentage-point increase observed from the last 6 months of 2007 through the last 6 months of 2008.

The percentage of adults living in wireless-only households has also been increasing steadily (see **Figure 1**). During the last 6 months of 2009, more than two of every nine adults lived in wireless-only households. One year before that (i.e., during the last 6 months of 2008), 2 of every 11 adults lived in wireless-only households. And 2 years before that (i.e., during the last 6 months of 2006), only 2 of every 17 adults lived in wireless-only households.

The percentage of children living in wireless-only households is also growing. In fact, for this population, the 4.6-percentage-point increase from the first 6 months of 2009 is the largest 6-month increase observed since 2003, when NHIS began collecting data on children living 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 2.0% of households had no telephone service (neither wireless nor landline). Nearly 4 million adults (1.7%) and 1.4 million children (1.9%) 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 2009,

- More than three in five adults living only with unrelated adult roommates (62.9%) were in households with only wireless telephones. This is the highest prevalence rate among the population subgroups examined.
- More than two in five adults renting their home (43.1%) had only wireless telephones. Adults renting their home were more likely than adults owning their home (14.0%) to be living in households with only wireless telephones.
- Nearly half of adults aged 25–29 years (48.6%) lived in households with only wireless telephones. More than one-third of adults aged 18–24 or 30–34 (37.8% and 37.2%, respectively) lived in households with only wireless telephones.
- As age increased from 35 years, the percentage of adults living in households with only wireless telephones decreased: 23.9% for adults aged 35–44; 14.9% for adults aged 45–64; and 5.2% for adults aged 65 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 (24.5%) were more likely than women (21.3%) to be living in households with only wireless telephones.
- Adults living in poverty (36.3%) and adults living near poverty (29.0%) were more likely than higher income adults (19.6%) to be living in households with only wireless telephones.
- Adults living in the Midwest (25.6%), South (25.4%), and West (22.2%) were more likely than adults living in the Northeast (15.1%) to be living in households with only wireless telephones.
- Hispanic adults (30.4%) were more likely than non-Hispanic white adults (21.0%) or non-Hispanic black adults (25.0%) to be living in households with only wireless telephones.

Demographic Distributions

The demographic differences noted in the previous section are based on the distribution of household telephone status within each demographic group. When examining the population of wireless-only adults, some readers may instead wish to consider the distribution of various demographic characteristics within the wireless-only adult population. For example, although young adults aged 18–29 years were more likely than older adults to live in households with only wireless telephones, these young adults made up only 40.8% of all wireless-

Polynomial regression equations fitted to a plot of the percentage of adults living in households with only wireless telephone service, by single year of age and year of interview: United States, 2003–2009

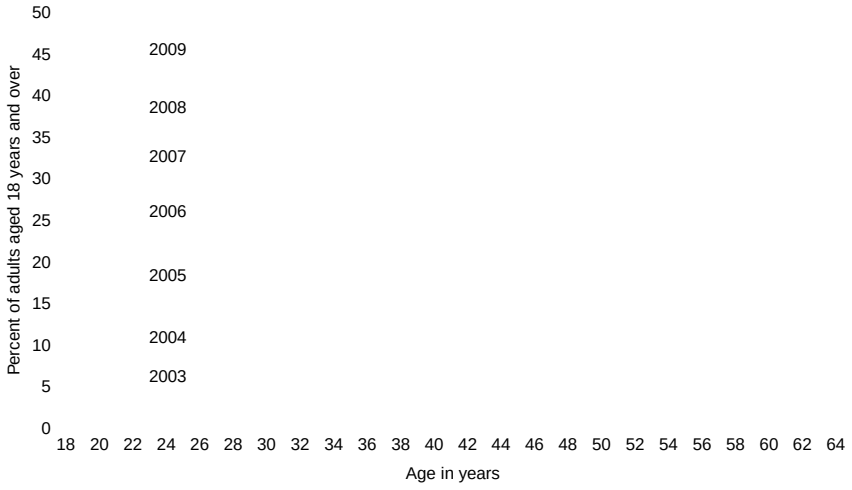

Figure 2

only adults. Young adults were a minority among all wireless-only adults because young adults made up only 22% of the total adult population.

Table 3 presents the percent distribution of selected demographic characteristics for adults living in households with only wireless telephones, by survey time period. The estimates in this table reveal that the distributions of selected demographic characteristics changed little over the 4-year period shown. The exceptions were related to sex, age, employment status, and household structure. From 2006 to the last 6 months of 2009,

- The proportion of women among all wireless-only adults increased from approximately 46% to 48.2%.
- Among all wireless-only adults, the proportion of adults aged 30 years and over has steadily increased. In the last 6 months of 2009, the majority of wireless-only adults (59.2%) were aged 30 and over, up from 48.4% in the first 6 months of 2006.
- The proportion of employed adults among all wireless-only adults has decreased from 78.6% to 69.1%. Over the same time period, the proportion of adults with an employment status other than working, keeping house, or going to school increased. These adults (largely unemployed or retired) made up 20.2% of wireless-only adults in the last 6 months of 2009, up from 10.3% in the first 6 months of 2006.
- Among all wireless-only adults, the proportion of adults living with children has steadily increased. In the last 6 months of 2009, 40.0% of wireless-only adults were living with children, up from 34.6% in the first 6 months of 2006.

Selected Health Measures by Household Telephone Status

Many health surveys, political polls, and other research are conducted using random-digit-dial telephone surveys. Until recently, these surveys did not include wireless telephone numbers in their samples. Now, despite operational challenges, most major survey research organizations are including wireless telephone numbers when conducting random-digit-dial telephone 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.

The NHIS Early Release Program updates and releases estimates for 15 key 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 older adults aged 65 years and over.) For the period July through December 2009,

- The prevalence of binge drinking (i.e., having five or more alcoholic drinks in 1 day during the past year) among wireless-only adults (34.5%) was nearly twice as high as the prevalence among adults living in landline households (18.7%). 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, more likely to experience serious psychological distress, and less likely to have ever been diagnosed with diabetes.
- The percentage without health insurance coverage at the time of interview among wireless-only adults under 65 years of age (29.2%) was more than twice as high as the percentage among adults in that age group living in landline households (13.8%).
- 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 (50.6%) were more likely than adults living in landline households (36.1%) to have ever been tested for human immunodeficiency virus (HIV), the virus that causes AIDS.

The potential for bias due to undercoverage remains a real and growing threat to surveys conducted only on landline telephones. Telephone surveys limited to landline households may still be viable for health surveys of all adults and for surveys of most subpopulations regarding their health status (see *American Journal of Public Health* article by Blumberg and Luke, 2009). However, for health-related behaviors, health care service use indicators, and health care access measures (such as those in **Table 4**), caution is warranted when using landline surveys to draw inferences about subpopulations more likely to be wireless-only (such as young or low-income adults).

Wireless-mostly Households

The potential for bias due to undercoverage is not the only threat to surveys conducted on landline telephones. Researchers are also concerned that some people living in

households with landlines cannot be reached on those landlines because they rely on wireless telephones for all or almost all of their calls. Among households with both landline and wireless telephones, 25.7% received all or almost all calls on the wireless telephones, based on data for the period July through December 2009. These wireless-mostly households make up 14.9% of all households.

The percentage of adults living in wireless-mostly households has been increasing (see **Table 5**). During the last 6 months of 2009, approximately 37 million adults (16.3%) lived in wireless-mostly households. This prevalence estimate was not different from the estimate for the first 6 months of 2009 (16.2%), but it was significantly greater than the estimate for the first 6 months of 2008 (14.4%).

Table 5 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 2009,

- Adults working at a job or business (19.7%) and adults going to school (21.7%) were more likely to be living in wireless-mostly households than were adults keeping house (15.1%) or with another employment status such as retired or unemployed (9.0%).
- Adults with college degrees (19.7%) were more likely to be living in wireless-mostly households than were high school graduates (14.2%) or adults with less education (11.5%).
- Adults living with children (20.2%) were more likely than adults living alone (10.6%) or with only adult relatives (15.0%) to be living in wireless-mostly households.
- Adults living in poverty (10.0%) and adults living near poverty (12.7%) were less likely than higher income adults (19.2%) to be living in wireless-mostly households.
- Adults living in metropolitan areas (16.8%) were more likely to be living in wireless-mostly households than were adults living in more rural areas (14.5%).

Recent research by Boyle, Lewis, and Tefft (in the December 2009 issue of *Survey Practice*) suggests that the majority of adults living in wireless-mostly households are reachable using their landline telephone number. NHIS data cannot be used to estimate the proportion of wireless-only adults who are unreachable or to estimate the potential for bias due to their exclusion from landline surveys.

For More Information

For more information about the potential implications for health surveys that are based on landline telephone interviews, see

- Blumberg SJ, Luke JV. Reevaluating the need for concern regarding noncoverage bias in landline surveys. Am J Public Health 99:1806–10. 2009.
- 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. pp 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, et al. 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. Available from: http://www.cdc.gov/nchs/data/nhsr/nhsr014.pdf.

For more information about NHIS and the NHIS Early Release Program, or to find other Early Release reports, please visit the following websites:

- http://www.cdc.gov/nchs/nhis.htm
- http://www.cdc.gov/nchs/nhis/releases.htm.

Suggested Citation

Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, July–December 2009. National Center for Health Statistics. May 2010. 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 2006–December 2009

Date of interview		Household telephone status						
		Landline with a wireless telephone	Landline without a wireless telephone	Landline with unknown wireless telephone status	Nonlandline with unknown wireless telephone status	Wireless-only	No telephone service	Total
	Number of households (unweighted)	Percent of households						
Jan–Jun 2006	16,009	45.6	30.9	10.3	0.7	10.5	2.0	100.0
Jul–Dec 2006	13,056	44.3	29.6	10.2	0.8	12.8	2.2	100.0
Jan–Jun 2007[1]	15,996	58.9	23.8	1.7	0.1	13.6	1.9	100.0
Jul–Dec 2007	13,083	58.8	21.8	1.3	0.1	15.8	2.2	100.0
Jan–Jun 2008	16,070	58.5	20.6	0.9	0.0	17.5	2.5	100.0
Jul–Dec 2008	12,597	59.6	17.4	0.9	0.0	20.2	1.9	100.0
Jan–Jun 2009	12,447	59.4	15.5	0.4	0.0	22.7	1.9	100.0
Jul–Dec 2009	21,375	58.2	14.9	0.4	0.0	24.5	2.0	100.0
95% confidence interval[2]		57.14–59.33	14.09–15.77	0.27–0.47	0.01–0.06	23.60–25.45	1.77–2.19	
	Number of adults (unweighted)	Percent of adults aged 18 years and over						
Jan–Jun 2006	29,842	49.5	28.2	10.4	0.6	9.6	1.8	100.0
Jul–Dec 2006	24,473	48.1	27.3	10.5	0.7	11.8	1.7	100.0
Jan–Jun 2007[1]	29,982	63.3	20.8	1.7	0.1	12.6	1.6	100.0
Jul–Dec 2007	24,514	63.2	19.1	1.2	0.1	14.5	1.9	100.0
Jan–Jun 2008	30,150	63.0	17.9	0.8	0.0	16.1	2.1	100.0
Jul–Dec 2008	23,726	63.7	15.1	1.0	0.0	18.4	1.7	100.0
Jan–Jun 2009	23,632	63.5	13.4	0.4	0.0	21.1	1.5	100.0
Jul–Dec 2009	40,619	62.5	12.6	0.3	0.0	22.9	1.7	100.0
95% confidence interval[2]		61.41–63.60	11.84–13.40	0.25–0.45	0.01–0.04	22.00–23.72	1.50–1.89	

See footnotes at end of table.

Date of interview	Number of children (unweighted)	Landline with a wireless telephone	Landline without a wireless telephone	Landline with unknown wireless telephone status	Nonlandline with unknown wireless telephone status	Wireless-only	No telephone service	Total
		Household telephone status						
		Percent of children under age 18 years						
Jan–Jun 2006	11,670	53.4	23.8	11.5	0.9	8.6	1.9	100.0
Jul–Dec 2006	9,165	51.9	21.5	11.9	0.9	11.6	2.3	100.0
Jan–Jun 2007[1]	11,532	68.3	16.4	1.6	0.0	11.9	1.7	100.0
Jul–Dec 2007	9,122	68.5	13.8	1.1	0.0	14.4	2.1	100.0
Jan–Jun 2008	11,238	67.3	12.6	0.6	0.0	17.0	2.5	100.0
Jul–Dec 2008	8,635	67.1	11.1	0.7	0.0	18.7	2.4	100.0
Jan–Jun 2009	8,818	67.6	9.1	0.3	0.0	21.3	1.7	100.0
Jul–Dec 2009	14,984	63.4	8.5	0.2	0.0	25.9	1.9	100.0
95% confidence interval[2]		61.95–64.87	7.58–9.41	0.14–0.45	0.01–0.09	24.57–27.30	1.57–2.39	

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] Refers to the time period July through December 2009.

DATA SOURCE: National Health Interview Survey, January 2006–December 2009. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

Table 2. Percentage of adults aged 18 years and over living in wireless-only households, by selected demographic characteristics and by calendar half-years: United States, January 2006–December 2009

Demographic characteristic	Calendar half-year								
	Jan–Jun 2006	Jul–Dec 2006	Jan–Jun 2007[1]	Jul–Dec 2007[1]	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[2]
	Percent								
Race/ethnicity									
Hispanic or Latino, any race(s)	11.2	15.3	18.0	19.3	21.6	25.0	28.2	30.4	28.63 – 32.32
Non-Hispanic white, single race	9.0	10.8	11.3	12.9	14.6	16.6	19.7	21.0	19.89 – 22.10
Non-Hispanic black, single race	10.5	12.8	14.3	18.3	18.5	21.4	21.3	25.0	23.14 – 27.04
Non-Hispanic Asian, single race	10.2	11.8	10.6	12.1	16.5	17.8	18.0	20.6	18.26 – 23.11
Non-Hispanic other, single race	9.8	17.2	22.8	17.5	12.8	17.3	20.6	26.5	19.87 – 34.49
Non-Hispanic multiple race	15.4	14.6	17.3	22.8	22.3	22.5	28.7	26.9	22.09 – 32.35
Age									
18–24 years	22.6	25.2	27.9	30.6	31.4	33.1	37.6	37.8	35.38 – 40.36
25–29 years	22.3	29.1	30.6	34.5	35.7	41.5	45.8	48.6	46.48 – 50.82
30–34 years	12.1	17.6	16.5	22.0	27.0	30.4	33.5	37.2	35.05 – 39.48
35–44 years	8.2	10.1	10.8	12.5	15.5	17.5	21.5	23.9	22.51 – 25.32
45–64 years	5.3	6.1	7.1	8.0	9.2	11.6	12.8	14.9	14.07 – 15.81
65 years and over	1.3	1.9	2.0	2.2	2.8	3.3	5.4	5.2	4.55 – 6.03
Sex									
Male	10.7	13.1	13.8	15.9	18.0	20.0	22.5	24.5	23.57 – 25.43
Female	8.5	10.5	11.5	13.2	14.4	17.0	19.8	21.3	20.43 – 22.24
Education									
Some high school or less	8.3	12.9	14.6	15.4	16.1	18.8	22.2	24.7	23.09 – 26.29
High school graduate or GED[3]	9.6	10.6	11.8	13.4	15.2	17.8	20.8	22.9	21.63 – 24.15
Some post-high school, no degree	11.9	14.4	14.7	17.0	19.0	20.1	23.6	25.0	23.71– 26.37
4-year college degree or higher	8.5	10.1	10.8	12.7	14.3	17.7	18.2	19.5	18.12 – 20.98
Employment status last week									
Working at a job or business	11.6	13.9	15.0	16.6	19.0	21.5	24.3	26.0	25.03 – 27.06
Keeping house	7.1	8.6	9.5	12.8	12.6	16.0	16.6	20.5	18.78 – 22.26
Going to school	17.3	20.4	21.3	28.9	21.5	23.5	29.7	29.2	25.21 – 33.52
Something else (incl. unemployed)	4.2	6.2	6.4	7.6	8.9	11.0	14.0	15.9	14.87 – 16.96

See footnotes at end of table.

Demographic characteristic	Calendar half-year Jan–Jun 2006	Jul–Dec 2006	Jan–Jun 2007[1]	Jul–Dec 2007[1]	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[2]
Household structure									
Adult living alone	16.2	18.2	20.3	22.9	24.6	28.1	30.8	32.9	31.04 – 34.79
Unrelated adults, no children	44.2	54.0	55.3	56.9	63.1	60.6	68.5	62.9	54.47 – 70.62
Related adults, no children	7.1	8.5	9.8	11.0	12.5	14.7	16.8	17.1	16.13 – 18.20
Adult(s) with children	8.6	10.5	11.3	13.0	15.1	17.2	20.4	24.1	22.92 – 25.29
Household poverty status[4]									
Poor	15.8	22.4	21.6	27.4	26.0	30.9	33.0	36.3	33.90 – 38.81
Near poor	14.4	15.7	18.5	20.8	22.6	23.8	26.5	29.0	27.35 – 30.74
Not poor	9.4	11.3	10.6	11.9	14.2	16.0	18.9	19.6	18.64 – 20.59
Geographic region[5]									
Northeast	7.2	8.6	8.8	10.0	9.8	11.4	14.6	15.1	13.09 – 17.27
Midwest	10.2	11.4	14.0	15.3	17.8	20.8	21.9	25.6	23.86 – 27.51
South	11.4	14.0	14.9	17.1	19.6	21.3	25.0	25.4	24.01 – 26.93
West	7.8	11.0	10.9	12.9	13.7	17.2	19.0	22.2	20.80 – 23.76
Metropolitan statistical area status									
Metropolitan	10.3	12.7	13.7	15.5	17.5	19.7	22.4	24.2	23.13 – 25.20
Not metropolitan	7.0	8.0	8.4	10.0	10.9	13.5	16.5	17.9	16.40 – 19.54
Home ownership status[6]									
Owned or being bought	5.1	5.8	6.7	7.3	9.0	9.9	12.8	14.0	13.18 – 14.86
Renting	22.5	26.4	28.2	30.9	33.6	39.2	40.9	43.1	41.51 – 44.67
Other arrangement	10.7	*20.3	22.5	23.2	23.4	17.7	33.6	33.8	27.64 – 40.52
Number of wireless-only adults in survey sample (unweighted)	2,804	2,878	3,819	3,558	4,939	4,426	5,078	9,401	

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

[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] Refers to the time period July through December 2009.

[3] GED is General Educational Development high school equivalency diploma.

[4] 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 2006–December 2009. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

Table 3. Percent distribution of selected demographic characteristics, by date of interview, for adults aged 18 years and over living in wireless-only households: United States, January 2006–December 2009

Demographic characteristic	Calendar half-year								
	Jan–Jun 2006	Jul–Dec 2006	Jan–Jun 2007[1]	Jul–Dec 2007[1]	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[2]
	Percent distribution								
Race/ethnicity									
Hispanic or Latino, any race(s)	15.2	17.1	18.9	18.0	18.1	18.5	18.4	18.5	16.86 – 20.23
Non-Hispanic white, single race	65.6	64.0	61.5	61.2	62.2	61.9	63.8	62.5	60.29 – 64.63
Non-Hispanic black, single race	12.5	12.4	12.9	14.4	13.2	13.3	11.7	12.7	11.36 – 14.14
Non-Hispanic Asian, single race	4.7	4.4	3.8	3.8	4.6	4.4	3.9	4.1	3.48 – 4.88
Non-Hispanic other, single race	*0.6	0.9	*1.6	*0.8	0.6	0.6	0.7	1.0	0.68 – 1.33
Non-Hispanic multiple race	1.4	1.2	1.3	1.8	1.3	1.2	1.5	1.3	1.00 – 1.61
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Age									
18–24 years	30.5	27.6	28.4	27.2	24.9	23.1	22.9	21.2	19.72 – 22.74
25–29 years	21.1	22.7	22.3	22.1	20.5	21.0	19.9	19.6	18.46 – 20.69
30–34 years	11.0	12.9	11.3	13.0	14.3	14.0	13.6	14.0	13.09 – 15.02
35–44 years	16.8	16.6	16.3	16.3	17.8	17.4	18.4	18.6	17.53 – 19.79
45–64 years	18.5	17.6	19.1	18.9	19.6	21.6	21.0	22.8	21.65 – 23.91
65 years and over	2.2	2.6	2.6	2.5	2.9	2.9	4.3	3.8	3.35 – 4.39
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Sex									
Male	54.1	53.9	52.9	53.0	53.7	52.4	51.4	51.8	50.91 – 52.67
Female	45.9	46.1	47.1	47.0	46.3	47.6	48.6	48.2	47.33 – 49.09
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Education									
Some high school or less	14.8	17.4	17.5	16.2	15.5	15.8	15.5	16.0	14.76 – 17.23
High school graduate or GED[3]	28.3	27.0	27.5	27.5	27.8	27.2	27.7	28.9	27.49 – 30.36
Some post-high school, no degree	34.7	34.2	32.7	32.9	33.9	31.7	33.3	32.9	31.49 – 34.31
4-year college degree or higher	22.1	21.4	22.3	23.4	22.8	25.3	23.5	22.3	20.95 – 23.62
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

See footnotes at end of table.

Demographic characteristic	Calendar half-year Jan–Jun 2006	Jul–Dec 2006	Jan–Jun 2007[1]	Jul–Dec 2007[1]	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[2]
Employment status last week									
Working at a job or business	78.6	76.7	77.1	74.3	75.9	74.5	71.1	69.1	67.73 – 70.36
Keeping house	5.2	4.9	5.2	5.6	5.0	5.3	4.5	5.3	4.82 – 5.79
Going to school	5.6	4.9	5.1	5.8	4.1	3.7	4.6	4.4	3.68 – 5.20
Something else (incl. unemployed)	10.3	13.0	12.1	13.1	13.7	15.4	18.7	20.2	19.07 – 21.43
Unknown, not reported	*0.2	0.6	0.6	*1.3	1.4	*1.1	1.1	1.1	0.78 – 1.42
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Household structure									
Adult living alone	25.4	24.2	25.1	24.4	23.2	23.6	22.1	21.9	20.69 – 23.25
Unrelated adults, no children	6.8	10.1	6.0	7.7	6.4	5.2	5.4	4.1	3.20 – 5.11
Related adults, no children	33.1	32.4	34.4	34.2	35.1	36.9	36.0	34.0	32.35 – 35.60
Adult(s) with children	34.6	33.3	34.6	33.7	35.3	34.3	36.4	40.0	38.33 – 41.78
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Household poverty status[4]									
Poor	12.7	15.7	14.6	16.1	14.1	15.5	15.5	16.4	15.01 – 17.79
Near poor	19.5	17.1	18.4	18.4	18.1	16.8	17.9	18.5	17.26 – 19.72
Not poor	47.9	46.2	50.5	49.7	53.4	53.3	56.7	53.0	51.04 – 54.88
Unknown, not reported	19.9	21.0	16.5	15.8	14.4	14.4	10.0	12.2	11.11 – 13.44
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Geographic region[5]									
Northeast	13.8	13.4	12.7	12.4	10.7	11.3	12.2	12.1	10.41 – 13.93
Midwest	24.1	22.2	25.1	24.6	25.0	26.0	23.9	26.0	23.90 – 28.32
South	44.1	44.4	42.6	42.7	45.2	41.1	43.8	39.5	37.16 – 41.82
West	18.0	20.0	19.7	20.4	19.1	21.6	20.1	22.4	20.55 – 24.43
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Metropolitan statistical area status									
Metropolitan	84.4	86.7	86.1	86.9	85.9	85.1	83.3	83.7	81.68 – 85.48
Not metropolitan	15.6	13.3	13.9	13.1	14.1	14.9	16.7	16.3	14.52 – 18.32
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

See footnotes at end of table.

Demographic characteristic	Calendar half-year Jan–Jun 2006	Jul–Dec 2006	Jan–Jun 2007[1]	Jul–Dec 2007[1]	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[2]
Home ownership status[6]									
Owned or being bought	37.4	33.8	37.7	34.8	39.2	37.1	42.1	42.3	40.24 – 44.47
Renting	60.5	62.6	59.0	61.3	58.1	61.1	55.0	54.3	52.18 – 56.48
Other arrangement	2.1	*3.7	3.3	3.8	2.7	1.8	2.9	3.3	2.59 – 4.24
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Number of wireless-only adults in survey sample (unweighted)	2,804	2,878	3,819	3,558	4,939	4,426	5,078	9,401	

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

[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] Refers to the time period July through December 2009.

[3] GED is General Educational Development high school equivalency diploma.

[4] 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 2006–December 2009. 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 aged 18 years and over, by household telephone status: United States, July–December 2009

Measure	Household telephone status		
	Landline[1]	Wireless-only	No telephone service
	Percent (95% confidence interval)		
Health-related behaviors			
Five or more alcoholic drinks in 1 day at least once in past year[2]	18.7 (17.75 – 19.74)	34.5 (32.49 – 36.58)	24.2 (19.99 – 29.09)
Current smoker[3]	18.3 (17.38 – 19.24)	27.3 (25.53 – 29.10)	33.2 (27.29 – 39.65)
Engaged in regular leisure-time physical activity[4]	32.8 (31.49 – 34.06)	39.6 (37.65 – 41.49)	25.0 (20.07 – 30.75)
Health status			
Health status described as excellent or very good[5]	59.3 (58.16 – 60.34)	65.0 (63.11 – 66.89)	49.6 (43.32 – 55.91)
Experienced serious psychological distress in past 30 days[6]	2.7 (2.41 – 3.10)	4.6 (3.91 – 5.38)	6.1 (3.69 – 9.94)
Obese[7] (adults aged 20 years and over)	28.9 (27.93 – 29.84)	26.4 (24.80 – 28.03)	31.5 (26.06 – 37.42)
Asthma episode in past year[8]	3.6 (3.30 – 4.03)	4.5 (3.80 – 5.26)	4.1 (2.31 – 7.15)
Ever diagnosed with diabetes[9]	9.8 (9.27 – 10.46)	5.5 (4.80 – 6.25)	4.7 (3.04 – 7.27)
Health care service use			
Received influenza vaccine during past year[10]	38.2 (37.08 – 39.35)	23.2 (21.77 – 24.59)	20.3 (15.77 – 25.63)
Ever been tested for HIV[11]	36.1 (34.86 – 37.40)	50.6 (48.78 – 52.49)	44.4 (37.80 – 51.28)
Health care access			
Has a usual place to go for medical care[12]	86.5 (85.57 – 87.35)	72.5 (70.71 – 74.18)	69.1 (62.96 – 74.56)
Failed to obtain needed medical care in past year due to financial barriers[13]	7.2 (6.71 – 7.81)	13.7 (12.45 – 15.06)	15.8 (12.22 – 20.29)
Currently uninsured (adults aged 18–64 years)[14]	13.8 (12.98 – 14.72)	29.2 (27.29 – 31.14)	34.4 (28.70 – 40.66)
Number of adults in survey sample (unweighted)	12,505	4,645	389

[1] Includes households that also have wireless telephone service.

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

[3] Defined as a person who had smoked more than 100 cigarettes in his or her lifetime and now smokes every day or some days. The analyses excluded persons with unknown smoking status (about 2% of respondents each year).

[4] 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] 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 0.2% 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 (0–4) of the six items for each person were equally weighted and summed. A value of 13 or more for this scale indicates that at least one symptom was experienced “most of the time” or “all of the time” and is used here to define serious psychological distress.

[7] Defined as a body mass index (BMI) of 30 kg/m^2 or more. The measure is based on self-reported height and weight. The analyses excluded people with unknown height or weight (about 6% of respondents each year). Estimates of obesity are presented for adults aged 20 years and over because the Healthy People 2010 objectives (http://www.healthypeople.gov) for healthy weight among adults define adults as persons aged 20 and over.

[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 interview. The analyses excluded people with unknown asthma episode status (about 0.1% 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. 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 3% 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 5% 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 1.5% of respondents each year).

[13] A year is defined as the 12 months prior to interview. The analyses excluded persons with unknown responses to the question on failure to obtain needed medical care due to cost (about 0.2% of respondents each year).

[14] A person was defined as uninsured if he or she did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), 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 2009. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

Table 5. Percentage of adults aged 18 years and over living in wireless-mostly households, by selected demographic characteristics and by calendar half-years: United States, January 2007–December 2009

Demographic characteristic	Calendar half-year						
	Jan–Jun 2007	Jul–Dec 2007	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[1]
	Percent[2]						
Total	12.6	14.0	14.4	15.4	16.2	16.3	15.69 – 17.03
Race/ethnicity							
Hispanic or Latino, any race(s)	13.2	14.5	16.0	15.9	18.0	16.9	15.50 – 18.36
Non-Hispanic white, single race	12.3	13.2	14.2	14.9	15.6	16.1	15.24 – 16.99
Non-Hispanic black, single race	11.9	15.1	13.3	14.7	15.0	16.2	14.65 – 17.89
Non-Hispanic Asian, single race	16.0	20.3	16.4	20.3	19.6	18.5	16.20 – 20.98
Non-Hispanic other single race	14.6	*8.6	*10.1	15.5	22.9	*16.1	8.28 – 28.82
Non-Hispanic multiple race	14.6	19.7	17.7	24.2	22.5	18.2	13.80 – 23.67
Age							
18-24 years	17.3	18.2	19.2	18.8	20.0	19.9	18.23 – 21.71
25-29 years	17.2	19.7	17.3	18.3	17.7	16.4	14.97 – 17.99
30-44 years	15.5	17.3	18.2	19.0	20.3	19.5	18.46 – 20.54
45-64 years	11.5	13.0	13.8	15.4	16.5	17.5	16.56 – 18.44
65 years and over	3.4	3.9	4.4	4.9	5.3	6.3	5.55 – 7.09
Sex							
Male	13.2	14.3	14.9	15.4	16.2	16.5	15.78 – 17.28
Female	12.0	13.6	14.0	15.2	16.1	16.2	15.50 – 16.91
Education							
Some high school or less	8.0	8.7	10.0	9.8	12.1	11.5	10.40 – 12.73
High school graduate or GED[3]	10.6	12.7	12.5	13.2	13.7	14.2	13.23 – 15.25
Some post-high school, no degree	15.7	16.6	17.0	18.6	17.7	18.1	16.99 – 19.19
4-year college degree or higher	14.9	16.2	17.1	18.0	19.7	19.7	18.67 – 20.78
Employment status last week							
Working at a job or business	15.5	16.8	17.3	18.4	19.5	19.7	18.92 – 20.59
Keeping house	9.3	10.4	11.9	11.9	12.7	15.1	13.50 – 16.90
Going to school	17.2	20.4	25.2	21.5	21.1	21.7	18.72 – 24.95
Something else (incl. unemployed)	5.3	6.7	6.6	7.8	9.0	9.0	8.29 – 9.74
Household structure							
Adult living alone	10.8	10.7	10.1	12.2	10.0	10.6	9.67 – 11.65
Unrelated adults, no children	13.9	20.1	*15.4	21.3	13.9	15.5	10.02 – 23.10
Related adults, no children	11.6	12.1	12.8	13.2	14.7	15.0	14.00 – 16.11
Adult(s) with children	14.4	17.2	18.1	19.2	20.5	20.2	19.05 – 21.47
Household poverty status[4]							
Poor	8.4	8.6	10.8	9.5	11.0	10.0	8.51 – 11.76
Near poor	9.7	11.4	10.3	11.3	12.0	12.7	11.36 – 14.11
Not poor	14.8	15.9	17.1	18.2	18.8	19.2	18.31 – 20.14
Geographic region[5]							
Northeast	11.3	11.7	13.8	12.0	15.3	14.9	13.41 – 16.56
Midwest	10.6	13.3	12.6	13.2	14.6	14.7	13.35 – 16.20
South	13.8	14.3	14.6	16.2	16.7	17.3	16.15 – 18.48
West	13.7	15.9	16.4	18.7	17.7	17.7	16.40 – 19.05
Metropolitan statistical area status							
Metropolitan	13.2	14.7	15.0	15.8	16.9	16.8	16.14 – 17.57
Not metropolitan	10.2	10.9	12.1	13.4	13.5	14.5	12.97 – 16.11

See footnotes at end of table.

Demographic characteristic	Calendar half-year Jan–Jun 2007	Jul–Dec 2007	Jan–Jun 2008	Jul–Dec 2008	Jan–Jun 2009	Jul–Dec 2009	95% confidence interval[1]
Home ownership status[6]							
Owned or being bought	12.1	14.0	14.7	15.9	17.2	17.5	16.63 – 18.46
Renting	13.9	13.8	13.9	13.0	13.9	13.6	12.63 – 14.70
Other arrangement	12.2	14.1	14.8	24.6	13.8	15.8	11.47 – 21.40
Number of adults in survey sample who live in landline households with wireless telephones (unweighted)	18,631	15,356	18,664	14,816	14,886	24,904	

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

[1] Refers to the estimate of the percentage of adults living in wireless-mostly households for the time period July through December 2009.

[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] 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 2009. Data are based on household interviews of a sample of the civilian noninstitutionalized population.