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CHIS 2007 Cell-Phone Only Sample to Assess Noncoverage Bias

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INTRODUCTION

Random digit dial (RDD) telephone surveys have been a popular tool for population-based data collection in the U.S. RDD surveys are cost-effective compared with in-person interviewing, have sound probability sampling characteristics^{1,2,3,4}, and benefit from high coverage of landline telephones which reached over 90% around 1980.⁵ Within the past few years, the utility of RDD telephone surveys is being questioned due to another trend in telephone usage—the increased popularity of cellular phones. More and more telephone users are switching from regular landline telephones to cell phones, lowering coverage of landline telephones and, therefore, traditional RDD surveys that exclude numbers assigned to cellular phones. While cellular phone popularity in the US has lagged that of many European and Asian countries, their growth has been rapid since the turn of the century. The Consumer Expenditure Survey estimated cell-only households in the U.S. at less than 1% in 2000 but around 7% in the later quarters of 2004.^{6,7} The National Health Interview Survey estimated about 5.4% of adults residing in cell-only households in the second half of 2004 and 14.5% in the second half of 2007.⁸

To assess the extent of coverage limitations in traditional RDD surveys, the 2007 California Health Interview Survey (CHIS 2007) implemented a telephone survey with adults in cell-only households based on a feasibility pilot test in 2005.⁹ This cell-only sample was intended to supplement the regular RDD sample that was conducted concurrently. This study is distinctive methodologically in several important ways from those found in a growing number of studies that have compared landline and cellular households. First, unlike studies by Blumberg and colleagues that divided in-person survey data by telephone usage status, the data in this study are based on two separate samples (landline and cell).^{10,11} Second, an adult was sampled at random

within the household when the cell-phone was shared among members of a household whereas previous studies interviewed whoever answered the cell phone.^{12,13,14} Third, the current study was an omnibus health survey, unlike some previous studies mainly focusing on communication technology.^{12,13,14} And finally, in this study a full-length 30-minute interview was conducted rather than the brief or abbreviated interviews done in most cell phone surveys.¹⁵

This paper reports the results of this pilot test and compares a variety of health estimates from the two different samples. These results are discussed within the context of other health surveys that have addressed differences between landline and cell-phone only households using different methods. We conclude with a discussion about the future of RDD surveys and cell phones.

Increasing cell-only population

Survey data collection methods need to reflect ongoing changes in communication technology inevitably as population-based data collection relies heavily on communications.¹⁶ However, the choice of survey mode may be associated with survey errors.¹⁷ For RDD surveys of the general population, the growth of cell-only population increases the likelihood of noncoverage error in survey estimates.¹⁰ Noncoverage bias is a product of not only the low coverage rate but also the distinctive characteristics of the cell-only population, a population that tends to be disproportionately young, male, mobile, single, and live in rented housing when compared to adults living in households with landline telephones.^{6,7,10,11,15}

To the extent that RDD surveys exclude households without landline telephones and those with and without landline telephones differ in important ways, then traditional RDD survey estimates may not represent the general population. For health surveys like CHIS, noncoverage bias may skew any number of estimates—smoking, drinking, health insurance coverage, etc.—

related to the cell-only demographics.^{10,15} Adjusting the sample weights applied to RDD telephone survey data may mitigate noncoverage problems, as suggested by Keeter.¹⁸ However, since not all the relevant variables that explain telephone usage can be included in a weighting scheme, noncoverage bias for at least some items may be unavoidable.

DATA AND METHODOLOGY

California Health Interview Survey and Its Cell-Phone Only Supplemental Sample

A supplemental sample of adults living in households with cell phones only was implemented in the 2007 California Health Interview Survey (CHIS). CHIS is a biennial random digit dial (RDD) telephone survey of California's population conducted by the UCLA Center for Health Policy Research in collaboration with the California Department of Public Health, the California Department of Public Health, the Department of Health Care Services, and the Public Health Institute. Data collection is conducted by Westat under contract with UCLA. CHIS interviews are conducted in five languages: English, Spanish, Chinese (both Mandarin and Cantonese), Korean and Vietnamese. CHIS 2007 completed interviews with a sample of 49,249 adults over regular landline telephones, among which 46,007 responded in English. More information about the survey and its methodology is available at <http://www.chis.ucla.edu>.

The supplemental state-wide cell-only sample component was included to address the potential biases from excluding cell-only household by sampling and contacting cell phone numbers. The feasibility of conducting cell phone survey was evaluated in a CHIS 2005 pilot study.⁹ The main cell phone sample was drawn by the sampling vendor using the latest Telcordia database. Telephone numbers identified as ported cell phones in the landline RDD sample were included

as part of the cell phone sample. Following the U.S. Telephone Consumer Protection Act, the full selected cell phone sample was manually dialed by the interviewing staff. Once the contact was made with the dialed cell phone sample, those living in households with landline telephones were screened out. In cell-only households with only one adult, no within-household sampling was required. In households with more than one adult, sampling adults depended on whether other household members shared the cell phone. If adults shared the cell phone, the same within-household sampling method used in base landline sample was implemented. That is the screener respondent (SR) is randomly selected for the adult interview with a probability equal to the inverse of the number of adults in the household. In case the SR is not selected, then one adult other than the SR is selected for the adult interview using the next birthday method. If the cell phone was not shared, then the SR is sampled. Monetary incentives were provided for those who completed interviews (\$5 for the screener and \$25 for the adult interview) as a token of appreciation and to reimburse cell-phone air time. A total of 825 adults living in cell-only household completed the survey.

Weighting the cell-only survey data is methodologically challenging due to the lack of reliable data sources for cell-only users. The National Health Interview Survey (NHIS) is a potential source but its sampling error may be too large to provide reliable population control totals. This is even more problematic for state-level surveys, such as CHIS, because the state-level NHIS sample of identified cell-only households is too small to produce meaningful estimates of this population that could be used as weighting control totals. For this study, after assigning base weights that reflect selection probabilities appropriately, we combined them with the landline RDD data. The final adjustment weight was calculated by using the same procedures used for CHIS 2005 where the combined sample was projected to the California population totals. Age,

gender, race/ethnicity, county of residence, education level, household composition, and home ownership were controlled through ratio-raking adjustment in this process. The weighted population total of the cell-only sample was 3.5 million, which is about 13.2% of the total adult California non-institutionalized civilian population in 2007. This figure corresponds with the national cell-only adult estimates of 12.6% and 14.5% from the first and second half of 2007.⁸ Although an independent source for weighting the cell-only sample was not available, this weighting method appears to have worked reasonably well.

We will first examine the difference between people with landline and those with cell-phone only. Then, the analyses focus on the noncoverage bias and the effectiveness of adjustment weighting. Noncoverage bias is examined with comparisons between the fully adjusted landline RDD sample and the fully adjusted sample that combined the landline and cell-only samples. It will be assumed that the landline sample is biased and the combined sample is unbiased. The weighting effectiveness is examined by comparing the changes in differences between these two samples when base weight is applied and when final adjustment is applied. All analyses were conducted using SAS 9.1, and the significance of differences was determined by t-tests.

RESULTS

Differences between Landline and Cellular-Only Telephone Users

Table 1 reports estimates of the landline and cell-only samples along a number of demographic characteristics with differences between the two samples, where most of the differences are statistically significant. The proportion of those under age 35 in the cell-only sample is twice large as that of the landline sample (66.1% vs. 33.4%). While slightly less than half of the landline sample is male, the figure is close to 60% for the cell-only sample. Although not all

significant, we find the slightly higher proportion of non-Latino African Americans and the lower proportion of non-Latino whites in the cell-only sample than the landline sample. The largest difference in education was found in the highest education category (college or more) with an 8.4 percentage point difference between the two samples; given the relatively younger age of the cell sample, many of these adults may not have completed their education.

Housing-related differences are striking and show that the cell-only estimates for living in housing other than owned homes, living in a single-person household, and not being married are close to twice those of the landline sample estimates. For example, 67.9% of the cell respondents are classified as single, compared to only 36.4% of the landline respondents. The household income of the cell respondents is lower, perhaps reflecting lower education and the higher likelihood of being single. The cell-only sample is less likely to be unemployed by 11.7 percentage point. Respondents of the landline are less likely to interview in English than those of the cell-only sample, although the proportions of non-US citizens do not differ between the two samples. In general, the findings mirror those from previous research that used different methods to identify the cell-phone only population.^{10,11,15}

[Table 1 about here]

As an omnibus public health survey, CHIS includes a broad array of measures including health status, health behaviors, health insurance coverage, and access to and utilization of health services. Table 2 compares the samples along a number of these indicators. For general health, the landline sample reports worse health. The cell-only sample shows lower rates of chronic conditions (except for asthma) and physical limitation but higher rates of psychological distress than the landline sample. Within cancer screening, the cell-only sample appears to be less likely to follow the guidelines as their rates of having mammogram within 2 years and having colon

cancer screening are much lower. The cell-only respondents show higher rates of current smoking, drinking, HIV tests and STD tests than the landline respondents. This higher likelihood of cell-only population engaging in health risk behaviors confirms findings from past studies.^{10,11,15} In terms of physical activities in the past week, cell respondents are more likely to engage in vigorous activities and less likely to be overweight or obese. Corresponding to previous studies, rates of health insurance coverage is much lower for the cell sample than the landline sample. Consequently, cell respondents are less likely to have usual source of care and visit doctors. Many of these differences may mirror the differential age distributions between the two samples.

[Table 2 about here]

Noncoverage Bias and Effectiveness of Weighting Adjustment

Assuming the sample that combines both landline and cell-only samples provides unbiased estimates with respect to the sample frame coverage, the departure of landline sample estimates from the combined sample estimates will be considered as noncoverage bias. The differences between fully adjusted combined sample estimates and fully adjusted landline sample estimates found in the column, '1A vs. 2A,' on Tables 3 and 4 correspond to the noncoverage bias. As a number of demographic variables are controlled through weighting adjustment as described previously, the two samples show no statistically significant differences on most of the demographic variables. The differences in having kids in the households, marital status and interview language are statistically significant but not meaningful. Surprisingly, 29 out of 30 health-related variables show no evidence for noncoverage bias. The only characteristic that shows noncoverage bias is STD testing, where using the landline sample could have

underestimated having tested for STD in the past 12 months by 1.3 percent point. Overall, it appears that the landline sample would have represented the general population reasonably well in CHIS 2007.

[Table 3 about here]

The representativeness of the landline sample does not mean that traditional landline sample telephone survey may be free from noncoverage bias. The landline sample estimates in columns 2A in Tables 3 and 4 discussed above reflect the noncoverage adjustment made through a complex weighting procedure. The effectiveness of this adjustment can be assessed by comparing the differences of combined sample and landline sample estimates when using final adjustment weights and those using base weights. Columns 1A vs. 2A and 1B vs. 2B on Tables 3 and 4 correspond to the differences. When only base weights are applied, the differences between two samples are substantial and significant. However, these differences disappear once final adjustment weights are applied. Note that the final adjustment weights control for age, gender, race/ethnicity, county of residence, education level, household composition, and home ownership. It appears that the weighting adjustment used in this study is effective in reducing the noncoverage bias.

[Table 4 about here]

CONCLUSION

This study found that conducting surveys on cell-phones is important as those with only cell-phones are very different from those with landline telephones in regard to a broad array of demographic and health-related characteristics. Despite using a very different methodology, this

study confirmed most of the findings from past research. The cell-only group appears to be a mobile population highly associated with being male, younger and single. The cell-only adults are also more likely to engage in riskier health behaviors, such as smoking and drinking and to have health insurance and access to care. However, they appear to be healthier than adults with landline telephones as their reports on chronic conditions and overweight/obese are lower.

While there is controversy over whether to use survey weights, our study shows that weights are effective in adjusting for biases as fully adjusted landline sample estimates are not significantly different from combined sample estimates.

Although noncoverage bias examined in this study does not appear to cause serious concern, the same may not be guaranteed for future telephone surveys. This is because noncoverage bias reflects the proportion of those who are covered and the differences between those who are covered and those who are not covered. This study shows the differences of the two are large; however, the proportion of those who are not covered by the landline telephone frame is relatively small, around 15 percent. Given that this proportion is expected to grow in the future, relying on landline samples alone in general population surveys may jeopardize the data quality even if noncoverage adjustments are applied. Telephone surveys using the cell-phone sample combined with the regular landline telephone sample are to produce data that better represent the general population. Given the results of this study and the cell-phone usage trend, it is important that RDD health surveys, such as CHIS, Behavioral Risk Factor Surveillance Survey (BRFSS) and Health Information National Trend Survey (HINTS) continue to explore ways to supplement their regular landline RDD samples with through other methods.

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Table 1. Demographic Characteristics from CHIS Landline Sample and Cell-Only Sample Using Final Adjustment Weights

Characteristics	Landline Sample (n=49,242)		Cell Sample (n=825)		difference	
	%	se	%	se		
Age						
18-35 years old	33.4	0.4	66.1	1.9	-32.7	***
36-50 years old	31.2	0.3	20.9	1.8	10.3	***
51-64 years old	20.8	0.2	11.3	1.2	9.5	***
65+ years old	14.5	0.2	1.7	0.5	12.8	***
Male	49.0	0.4	58.4	2.0	-9.4	***
Race/Ethnicity						
Latino	31.5	0.4	32.3	2.0	-0.8	
Non-Latino white	47.6	0.4	42.0	2.0	5.7	**
Non-Latino African American	5.7	0.2	8.7	1.1	-3.0	**
Non-Latino Asian	12.7	0.3	14.5	1.5	-1.8	
Non-Latino other	2.5	0.1	2.6	0.5	-0.1	
Kids in household	44.8	0.4	36.6	2.0	8.2	***
One person household	11.1	0.1	19.8	1.6	-8.6	***
Marital status - Single	36.4	0.4	67.9	1.9	-31.5	***
Education						
Less than High school	16.6	0.3	11.6	1.6	5.0	**
High school	27.0	0.3	33.2	1.9	-6.2	**
Some college	23.6	0.3	30.9	1.9	-7.3	***
College +	32.8	0.3	24.3	1.7	8.4	***
Federal poverty level						
0-99%	13.6	0.3	17.9	1.6	-4.3	**
100-199%	17.3	0.3	17.0	1.6	0.3	
200-299%	13.6	0.3	16.3	1.4	-2.7	
300%+	55.5	0.4	48.8	2.0	6.7	**
Rent home/ other arrangement	38.0	0.4	67.1	2.0	-29.1	***
Unemployed	32.8	0.3	21.1	1.7	11.7	***
Non-US citizen	16.5	0.3	14.4	1.7	2.1	
Interviewed in English	83.7	0.3	94.7	1.2	-11.0	***
Live in rural areas	11.8	0.2	8.6	1.1	3.1	**

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2. Health-Related Characteristics from CHIS Landline Sample and Cell-Only Sample Using Final Adjustment Weights

Characteristics	Landline Sample (n=49,242)		Cell Sample (n=825)		difference	
	%	se	%	se		
Health condition						
Fair and poor general health	19.5	0.3	13.1	1.4	6.4	***
Ever diagnosed with asthma	13.1	0.2	15.2	1.5	-2.1	
Ever diagnosed with diabetes	7.8	0.2	4.2	0.9	3.6	***
Ever diagnosed with hypertension	26.1	0.3	17.0	1.5	9.1	***
Ever diagnosed with heart disease	6.5	0.1	2.2	0.6	4.3	***
Severe vision/hearing problems	7.2	0.2	4.4	0.8	2.8	***
Conditions limiting basic physical activity	16.6	0.3	11.4	1.2	5.1	***
Disabled	29.2	0.3	22.4	1.6	6.8	***
Psychological distress past 12 months	8.1	0.2	13.7	1.4	-5.6	***
Cancer screening						
Pap test past 3 years	81.0	0.4	77.3	2.5	3.7	
Mammogram past 2 years	63.6	0.5	49.5	4.2	14.0	***
Colon cancer screening past 5 years	44.8	0.4	29.1	3.5	15.7	***
Health risk behavior						
Regular physical activity	36.5	0.4	38.3	2.0	-1.8	
Moderate physical activity	27.5	0.3	25.9	1.7	1.6	
Vigorous physical activity	17.4	0.3	23.2	1.7	-5.8	***
Over weight or obese	57.3	0.4	50.6	2.0	6.7	**
100 cigarettes in life	37.3	0.4	41.0	2.0	-3.7	
Current smoker	13.6	0.3	24.3	1.7	-10.7	***
Drink alcohol past 12 months	68.4	0.3	75.6	1.8	-7.2	***
Binge drinking past 12 months	28.7	0.4	45.9	2.0	-17.1	***
Sexual orientation - straight	96.2	0.1	94.1	0.9	2.1	*
Ever had HIV test	51.7	0.4	57.8	2.0	-6.1	**
STD test past 12 months	20.5	0.4	40.1	2.2	-19.6	***
Health care access						
Insurance coverage						
Insured all past 12 months	80.3	0.3	65.8	2.0	14.5	***
Uninsured any point past 12 months	4.5	0.2	8.1	1.1	-3.6	**
Currently uninsured	15.2	0.3	26.1	1.9	-10.9	***
Have usual source of care other than ER	78.5	0.3	64.7	2.0	13.8	***
Visited doctor past 12 months	81.2	0.3	76.8	1.7	4.4	*
Visited ER past 12 months	18.6	0.3	21.4	1.6	-2.7	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3. Demographic Characteristics from Combined CHIS Landline and Cell-Only Sample and CHIS Landline Sample Using Final Adjustment Weights

Characteristics	1. Combined Sample (Landline+Cell) (n=50,067)				2. Landline Sample (n=49,242)				1A vs. 2A	1B vs. 2B
	A. Final wt		B. Base wt		A. Final wt		B. Base wt		difference	difference
	%	se	%	se	%	se	%	se		
Age										
18-35 years old	33.4	0.4	43.4	0.9	33.4	0.4	20.1	0.2	0.0	-23.3***
36-50 years old	31.2	0.4	22.6	0.7	31.2	0.3	28.1	0.3	0.0	5.5***
51-64 years old	20.8	0.3	20.2	0.6	20.8	0.2	27.9	0.2	0.0	7.7***
65+ years old	14.5	0.2	13.8	0.3	14.5	0.2	23.9	0.2	0.0	10.1***
Male	49.0	0.4	50.4	1.0	49.0	0.4	41.5	0.3	0.0	-8.9***
Race/Ethnicity										
Latino	31.5	0.4	24.4	0.9	31.5	0.4	21.1	0.2	0.0	-3.3***
Non-Latino white	47.6	0.4	53.1	1.0	47.6	0.4	60.2	0.3	0.0	7.2***
Non-Latino African American	5.7	0.2	5.8	0.5	5.7	0.2	5.1	0.1	0.0	-0.7
Non-Latino Asian	12.7	0.3	12.9	0.9	12.7	0.3	10.3	0.2	0.0	-2.7**
Non-Latino other	2.5	0.1	3.8	0.4	2.5	0.1	3.4	0.1	0.0	-0.5
Kids in household	43.3	0.4	35.1	0.9	44.8	0.4	35.9	0.3	1.5**	0.7
One person household	11.3	0.2	12.8	0.4	11.1	0.1	15.8	0.2	-0.1	3.1***
Marital status-Single	37.6	0.4	50.8	0.9	36.4	0.4	34.3	0.3	-1.2*	-16.5***
Education										
Less than High school	16.6	0.4	9.6	0.5	16.6	0.3	10.5	0.2	0.0	0.9
High school	27.0	0.4	27.2	0.9	27.0	0.3	22.0	0.2	0.0	-5.3***
Some college	24.2	0.4	30.0	0.9	23.6	0.3	27.2	0.2	-0.6	-2.8**
College +	32.2	0.4	33.2	0.9	32.8	0.3	40.3	0.3	0.6	7.2***
Federal poverty level										
0-99%	13.7	0.3	13.9	0.8	13.6	0.3	10.2	0.2	-0.1	-3.7***
100-199%	17.0	0.3	15.4	0.7	17.3	0.3	14.8	0.2	0.3	-0.6
200-299%	13.9	0.3	14.9	0.8	13.6	0.3	12.9	0.2	-0.3	-2.0*
300%+	55.4	0.4	55.9	1.0	55.5	0.4	62.2	0.3	0.0	6.3***
Rent home/Other arrangement	38.0	0.4	49.2	0.9	38.0	0.4	31.5	0.3	0.0	-17.7***
Unemployed	32.3	0.4	30.5	0.8	32.8	0.3	38.9	0.3	0.6	8.4***
Non-US citizen	15.8	0.3	11.4	0.7	16.5	0.3	11.0	0.2	0.6	-0.5
Interviewed in English	84.8	0.3	92.9	0.3	83.7	0.3	89.4	0.2	-1.1*	-3.4***
Live in rural areas	11.7	0.2	10.7	0.4	11.8	0.2	13.2	0.2	0.1	2.5***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4. Health-Related Characteristics from Combined CHIS Landline and Cell-Only Sample and CHIS Landline Sample Using Final Adjustment Weights

Characteristics	1. Combined Sample (Landline+Cell) (n=50,067)				2. Landline Sample (n=49,242)				1A vs. 2A	1B vs. 2B
	A. Final wt		B. Base wt		A. Final wt		B. Base wt		difference	difference
	%	se	%	se	%	se	%	se		
Health condition										
Fair and poor general health	19.0	0.3	16.1	0.7	19.5	0.3	18.6	0.2	0.5	-2.5 **
Ever diagnosed with asthma	13.1	0.3	14.3	0.7	13.1	0.2	13.6	0.2	0.0	0.7
Ever diagnosed with diabetes	7.8	0.2	6.3	0.3	7.8	0.2	9.1	0.2	0.0	-2.8 ***
Ever diagnosed with hypertension	26.2	0.3	24.9	0.7	26.1	0.3	32.1	0.3	-0.1	-7.2 ***
Ever diagnosed with heart disease	6.4	0.2	5.9	0.3	6.5	0.1	8.9	0.1	0.1	-3.0 ***
Severe vision/hearing problems	7.2	0.2	6.3	0.4	7.2	0.2	8.3	0.1	0.0	-2.0 ***
Conditions limiting basic physical activity	16.6	0.3	15.7	0.6	16.6	0.3	19.8	0.2	0.0	-4.1 ***
Disabled	29.0	0.4	27.6	0.8	29.2	0.3	32.2	0.3	0.2	-4.6 ***
Psychological distress past 12 months	8.6	0.3	10.4	0.8	8.1	0.2	7.4	0.1	-0.5	3.1 ***
Cancer screening										
Pap test past 3 years	80.7	0.4	77.2	1.1	81.0	0.4	80.7	0.3	0.3	-3.5 **
Mammogram past 2 years	63.5	0.5	65.9	0.9	63.6	0.5	70.4	0.3	0.0	-4.5 ***
Colon cancer screening past 5 years	44.3	0.4	46.4	0.8	44.8	0.4	50.4	0.3	0.5	-4.0 ***
Health risk behavior										
Regular physical activity	36.3	0.4	38.6	1.0	36.5	0.4	36.9	0.3	0.2	1.7
Moderate physical activity	27.2	0.4	28.8	0.9	27.5	0.3	28.8	0.3	0.3	-0.1
Vigorous physical activity	17.5	0.3	19.4	0.8	17.4	0.3	16.1	0.2	-0.1	3.3 ***
Over weight or obese	57.1	0.4	52.5	1.0	57.3	0.4	56.8	0.3	0.2	-4.3 ***
100 cigarettes in life	38.0	0.4	40.4	1.0	37.3	0.4	40.3	0.3	-0.7	0.0
Current smoker	14.4	0.3	17.9	0.9	13.6	0.3	12.1	0.2	-0.7	5.8 ***
Drink alcohol past 12 months	69.0	0.4	72.6	0.8	68.4	0.3	69.5	0.3	-0.7	3.1 ***
Binge drinking past 12 months	29.7	0.4	33.8	1.0	28.7	0.4	23.7	0.2	-1.0	10.1 ***
Sexual orientation - straight	96.0	0.2	94.7	0.7	96.2	0.1	96.1	0.1	0.2	-1.5 *
Ever had HIV test	52.2	0.5	51.8	1.1	51.7	0.4	50.0	0.3	-0.4	1.7
STD test past 12 months	21.8	0.4	27.6	1.2	20.5	0.4	16.0	0.3	-1.3 *	11.5 ***
Health care access										
Insurance coverage										
Insured all past 12 months	79.6	0.4	76.4	1.0	15.2	0.3	86.0	0.2	0.7	-9.6 ***
Uninsured any point past 12 months	4.7	0.2	6.3	0.6	4.5	0.2	3.4	0.1	-0.1	3.0 ***
Currently uninsured	15.8	0.4	17.2	0.8	80.3	0.3	10.6	0.2	-0.6	6.6 ***
Have usual source of care other than ER	78.0	0.4	75.5	0.9	78.5	0.3	84.3	0.2	0.6	-8.9 ***
Visited doctor past 12 months	81.3	0.4	81.1	0.8	81.2	0.3	85.3	0.2	-0.1	-4.2 ***
Visited ER past 12 months	18.9	0.3	19.7	0.8	18.6	0.3	19.3	0.2	-0.3	0.5

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$