



December 13, 2016

CHIS 2015 Methodology Report Series

Report 4

Response Rates

-Short Report-

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Chapter 1: CHIS 2015 Methodology Overview

CHIS 2015 SAMPLE DESIGN AND METHODOLOGY SUMMARY

-SHORT REPORT-

1.1 Overview

CHIS has historically released 5 methodology reports with each cycle's data release. With the move to annual data release we are releasing reduced versions of those reports following the same structure listed below. This documentation covers the first half (CHIS 2015) of the CHIS 2015-2016 cycle.

- Report 1 – Sample Design (Short Report);
- Report 2 – Data Collection Methods (Short Report);
- Report 3 – Data Processing Procedures (Short Report);
- Report 4 – Response Rates (Short Report); and
- Report 5 – Weighting and Variance Estimation (Short Report).

Each of these short reports begins with the same summary chapter, which includes highlights of various methodological components of the survey. The rest of each chapter includes additional documentation on that aspect of the methodology. The full series of complete methodology reports will be available in 2017 with more detail about the methods used in CHIS 2015-2016.

For further information on CHIS data and the methods used in the survey, visit the California Health Interview Survey Web site at <http://www.chis.ucla.edu> or contact CHIS at CHIS@ucla.edu. For methodology reports from previous CHIS cycles, go to <http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx>

CHIS is a population-based telephone survey of California's residential, non-institutionalized population conducted every other year since 2001 and continually beginning in 2011. CHIS is the nation's largest state-level health survey and one of the largest health surveys in the nation. CHIS is conducted by the UCLA Center for Health Policy Research (UCLA-CHPR) in collaboration with the California Department of Public Health and the Department of Health Care Services. CHIS collects extensive information for all age groups on health status, health conditions, health-related behaviors, health insurance coverage, access to health care services, and other health and health-related issues.

The sample is designed optimized to meet two objectives:

- 1) Provide estimates for large- and medium-sized counties in the state, and for groups of the smallest counties (based on population size), and
- 2) Provide statewide estimates for California's overall population, its major racial and ethnic groups, as well as several racial and ethnic subgroups.

The CHIS sample is representative of California's non-institutionalized population living in households. CHIS data and results are used extensively by federal and State agencies, local public health agencies and organizations, advocacy and community organizations, other local agencies, hospitals, community clinics, health plans, foundations, and researchers. These data are used for analyses and publications to assess public health and health care needs, to develop and advocate policies to meet those needs, and to plan and budget health care coverage and services. Many researchers throughout California and

the nation use CHIS data files to further their understanding of a wide range of health-related issues (visit UCLA-CHPR's publication page at: http://healthpolicy.ucla.edu/publications/Pages/default.aspx_for_examples_of_CHIS_studies).

1.2 Switch to a Continuous Survey

From the first CHIS cycle in 2001 through 2009, CHIS data were collected during a 7-9 month period every other year. Beginning in 2011, CHIS data have been collected continually over a 2-year cycle. This change was driven by several factors including the ability to track and release information about health in California on a more frequent and timely basis and to eliminate potential seasonality in the biennial data.

CHIS 2015 data were collected between May 2015 and mid-February 2016. At the writing of this document and release of CHIS 2015 data, CHIS 2016 is still in the field. As in previous CHIS cycles, weights are included with the data files and are based on the State of California's Department of Finance population estimates and projections, adjusted to remove the population living in group quarters (such as nursing homes, prisons, etc.) and thus not eligible to participate in CHIS. When the weights are applied to the data, the results represent California's residential population during that year for the age group corresponding to the data file in use (adult, adolescent, or child). In CHIS 2015-2016, data users will be able to produce single-year estimates using the weights provided (referred to as CHIS 2015 and CHIS 2016, respectively). This is a new feature of CHIS data.

See what's new in the 2015-2016 CHIS sampling and data collection here:
<http://healthpolicy.ucla.edu/chis/design/Documents/whats-new-chis-2015.pdf>

In order to provide CHIS data users with more complete and up-to-date information to facilitate analyses of CHIS data, additional information on how to use the CHIS sampling weights, including sample statistical code, is available at: <http://healthpolicy.ucla.edu/chis/analyze/Pages/sample-code.aspx>.

Additional documentation on constructing the CHIS sampling weights is available in the forthcoming CHIS 2015-2016 Methods Report #5—Weighting and Variance Estimation, which will be posted at <http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx> once available. The 2015 short report provides initial information on weight construction (available at the same URL). Other helpful information for understanding the CHIS sample design and data collection processing can be found in the four other methodology reports for each CHIS cycle year.

1.3 Sample Design Objectives

The CHIS 2015-2016 sample was designed to meet the two sampling objectives discussed above: (1) provide estimates for adults in most counties and in groups of counties with small populations; and (2) provide estimates for California's overall population, major racial and ethnic groups, and for several smaller racial and ethnic subgroups.

To achieve these objectives, CHIS employed a dual-frame, multi-stage sample design. The random-digit-dial (RDD) sample included telephone numbers assigned to both landline and cellular service. The RDD sample was designed to achieve completed adult interviews via approximately 50% landline and 50% cellular phone numbers. The 58 counties in the state were grouped into 44 geographic sampling strata, and 14 sub-strata were created within the two most populous counties in the state (Los Angeles and San Diego). The same geographic stratification of the state has been used since CHIS 2005. The Los Angeles County stratum included 8 sub-strata for Service Planning Areas, and the San Diego County stratum included 6 sub-strata for

Health Service Districts. Most of the strata (39 of 44) consisted of a single county with no sub-strata (counties 3-41 in Table 1-1), with three multi-county strata comprised of the 17 remaining counties (see Table 1-1). An additional sample from both the landline and cell phone frames produced 1,042 interviews within Marin County. An Asian surname sample list frame households also produced additional respondents: 173 Japanese, 146 Korean, and 234 Vietnamese adult interviews based on self-identified ethnicity. Overall, a sufficient number of adult interviews were allocated to each stratum and sub-stratum to support the first sample design objective for the two-year period—to provide health estimates for adults at the local level.

Within each geographic stratum, residential telephone numbers were selected, and within each household, one adult (age 18 and over) respondent was randomly selected. In those households with adolescents (ages 12-17) and/or children (under age 12), one adolescent and one child of the randomly selected parent/guardian were randomly selected; the adolescent was interviewed directly, and the adult most knowledgeable about the child's health completed the child interview.

The CHIS RDD sample is of sufficient size to accomplish the second objective (produce estimates for the state's major racial/ethnic groups, as well as many ethnic subgroups). However, given the smaller sample sizes of one-year data files, two or more pooled cycles of CHIS data are generally required to produce statistically stable estimates for small population groups such as racial/ethnic subgroups, children, teens, etc. To increase the precision of estimates for Koreans and Vietnamese, areas with relatively high concentrations of these groups were sampled at higher rates. These geographically targeted oversamples were supplemented by telephone numbers associated with group-specific surnames, drawn from listed telephone directories to further increase the sample size for Koreans and Vietnamese. Surname and given name lists were used similarly to increase the yield of Californians of Japanese descent.

Table 1-1. California county and county group strata used in the CHIS 201516 sample design

1. Los Angeles	7. Alameda	27. Shasta
1.1 Antelope Valley	8. Sacramento	28. Yolo
1.2 San Fernando Valley	9. Contra Costa	29. El Dorado
1.3 San Gabriel Valley	10. Fresno	30. Imperial
1.4 Metro	11. San Francisco	31. Napa
1.5 West	12. Ventura	32. Kings
1.6 South	13. San Mateo	33. Madera
1.7 East	14. Kern	34. Monterey
1.8 South Bay	15. San Joaquin	35. Humboldt
2. San Diego	16. Sonoma	36. Nevada
2.1 N. Coastal	17. Stanislaus	37. Mendocino
2.2 N. Central	18. Santa Barbara	38. Sutter
2.3 Central	19. Solano	39. Yuba
2.4 South	20. Tulare	40. Lake
2.5 East	21. Santa Cruz	41. San Benito
2.6 N. Inland	22. Marin	42. Colusa, Glen, Tehama
3. Orange	23. San Luis Obispo	43. Plumas, Sierra, Siskiyou,
4. Santa Clara	24. Placer	Lassen, Modoc, Trinity, Del Norte
5. San Bernardino	25. Merced	44. Mariposa, Mono, Tuolumne,
6. Riverside	26. Butte	Alpine, Amador, Calaveras, Inyo

Source: UCLA Center for Health Policy Research, 2015-2016 California Health Interview Survey.

To help compensate for the increasing number of households without landline telephone service, a separate RDD sample was drawn of telephone numbers assigned to cellular service. In CHIS 2015, the goal was to complete approximately 10,222 interviews (50% of all RDD interviews statewide) with adults contacted via cell phone. Because the geographic information available for cell phone numbers is limited and not as precise as that for landlines, cell phone numbers were assigned to the same 44 geographic strata (i.e., 41 strata defined by a single county and 3 strata created by multiple counties) using a classification associated with the rate center linked to the account activation. The cell phone stratification closely resembles that of the landline sample and has the same stratum names, though the cell phone strata represent slightly different geographic areas than the landline strata. An adult reached on a sampled non-business cell phone number was automatically selected for CHIS (i.e., no within-household sampling for the adult interview, but child and teen interviews were possible using the same relationship rules as the landline sample). Cell numbers used exclusively by children under 18 were considered ineligible. A total of 754 teen interviews and 2,157 child interviews were completed in CHIS 2015 with approximately 46% coming from the cell phone sample.

The cell phone sampling method used in CHIS has evolved significantly since its first implementation in 2007 when only cell numbers belonging to adults in cell-only households were eligible for sampling adults. These changes reflect the rapidly changing nature of cell phone ownership and use in the US.¹ There have been three significant changes to the cell phone sample since 2009. First, all cell phone sample numbers used for non-business purposes by adults living in California were eligible for the extended interviews. Thus, adults in households with landlines who had their own cell phones or shared one with another adult household member could have been selected through either the cell or landline sample. The second change was the inclusion of child and adolescent extended interviews. The third, enacted in CHIS 2015-2016 was to increase the fraction of the sample comprised of cell phones from 20% to 50% of completed interviews.

The cell phone sample design and targets by stratum of the cell phone sample have also changed throughout the cycles of the survey. In CHIS 2007, a non-overlapping dual-frame design was implemented where cell phone only users were screened and interviewed in the cell phone sample. Beginning in 2009, an overlapping dual-frame design has been implemented. In this design, dual phone users (e.g., those with both cell and landline service) can be selected and interviewed from either the landline or cellphone samples.

The number of strata used in the cell phone sample has also evolved as more information about cell numbers has become available. In CHIS 2007, the cell phone frame was stratified into 7 geographic sampling strata created using telephone area codes. In CHIS 2009 and 2011-2012, the number of cell phone strata was increased to 28. These strata were created using both area codes and the geographic information assigned to the number. Beginning in CHIS 2011, with the availability of more detailed geographic information, the number of strata was increased to 44 geographic areas that correspond to single and grouped counties similar to the landline strata. The use of 44 geographic strata continued in CHIS 2015.

1.4 Data Collection

To capture the rich diversity of the California population, interviews were conducted in six languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, Korean, and Tagalog. Tagalog interviews were conducted for part of the CHIS 2013-2014 cycle, but 2015 is the first year that Tagalog interviews have been conducted from the beginning. These languages were chosen based on analysis of 2010 Census data to identify the languages that would cover the largest number of Californians in the CHIS sample that either did not speak English or did not speak English well enough to otherwise participate.

¹ <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201605.pdf>

RTI International designed the methodology and collected data for CHIS 2015, under contract with the UCLA Center for Health Policy Research. They are an independent, nonprofit institute that provides research, development, and technical services to government and commercial clients worldwide, with specialization in designing and implementing large-scale sample surveys. For all sampled households, RTI staff interviewed one randomly selected adult, and sampled one adolescent and one child if they were present in the household and the sampled adult was their parent or legal guardian. Thus, up to three interviews could have been completed in each household. Children and adolescents were generally sampled at the end of the adult interview. If the screener respondent was someone other than the sampled adult, children and adolescents could be sampled as part of the screening interview, and the extended child (and adolescent) interviews could be completed before the adult interview. This “child-first” procedure was first used in CHIS 2005 and has been retained in subsequent CHIS cycles because it substantially increases the yield of child interviews. While numerous subsequent attempts were made to complete the adult interview for child-first cases, the final data contain some completed child and adolescent interviews in households for which an adult interview was not completed. Table 1-2 shows the number of completed adult, child, and adolescent interviews in CHIS 2015 by the type of sample (landline RDD, surname list, cell RDD, and ABS). Note that these figures were accurate as of data collection completion and may differ slightly from numbers in the data files due to data cleaning and edits. Sample sizes to compare against data files you are using are found online at <http://healthpolicy.ucla.edu/chis/design/Pages/sample.aspx>.

Table 1-2. Number of completed CHIS 2015 interviews by type of sample and instrument

Type of sample ¹	Adult ²	Child	Adolescent
Total all samples	21,034	2,157	754
Landline RDD	7,236	660	240
Vietnamese surname list	3,395	301	105
Korean surname list	311	22	10
Japanese surname list	28	2	3
Cell RDD	9,022	1,089	363
Marin County Oversample ³	1,042	83	33

¹ Completed interviews listed for each sample type refer to the sampling frame from which the phone number was drawn. Interviews could be conducted using numbers sampled from a frame with individuals who did not meet the target criteria for the frame but were otherwise eligible residents of California. Interviews from the Marin County oversample include respondents who did not live in this county and interviews from the Vietnamese, Korean, or Japanese surname lists include respondents who do not have one of these ethnicities. For example, only 234 of the 3,395 adult interviews completed from the Vietnamese surname list involved respondents who indicated being having Vietnamese ethnicity.

² Includes interviews meeting the criteria as partially complete.

³ Completed interviews for the Marin County oversample do not include interviews completed via the Vietnamese surname list frame. These interviews are counted in the row for the Vietnamese surname list.

Source: UCLA Center for Health Policy Research, 2015-2016 California Health Interview Survey.

Interviews in all languages were administered using RTI’s computer-assisted telephone interviewing (CATI) system. The average adult interview took about 36 minutes to complete. The average child and adolescent interviews took about 16 minutes and 23 minutes, respectively. For “child-first” interviews, additional household information asked as part of the child interview averaged about 9 minutes. Interviews in non-English languages generally took longer to complete. More than 11 percent of the adult interviews were completed in a language other than English, as were about 23 percent of all child (parent proxy) interviews and 5 percent of all adolescent interviews.

1.5 Response Rates

The overall response rate for CHIS 2015 is a composite of the screener completion rate (i.e., success in introducing the survey to a household and randomly selecting an adult to be interviewed) and the extended

interview completion rate (i.e., success in getting one or more selected persons to complete the extended interview). For CHIS 2015, the landline/list sample household response rate was 12.3 percent (the product of the screener response rate of 28.4 and the extended interview response rate at the household level of 43.2 percent). The cell sample household response rate was 9.5 percent, incorporating a screener response rate of 20.7 percent household-level extended interview response rate of 45.9 percent. CHIS uses AAPOR response rate RR4 (see more detailed in *Methodology Report #4 – Response Rates*).

Looking within landline and cell phone sampling frames, the extended interview response rate for the landline/list sample varied across the adult (41.8 percent), child (45.3 percent) and adolescent (17.0 percent) interviews. The adolescent rate includes the process of obtaining permission from a parent or guardian. The adult interview response rate for the cell sample was 48.5 percent, the child rate was 43.4 percent, and the adolescent rate 16.7 percent (see Table 1-3a). Multiplying these rates by the screener response rates used in the household rates above gives an overall response rate for each type of interview (see Table 1-3b). As in previous years, household and person level response rates vary by sampling stratum. CHIS response rates are similar to, and sometimes higher than, other comparable surveys that interview by telephone.

Table 1-3a. CHIS 2015 Response Rates – Conditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	22.1%	45.2%	47.2%	43.6%	16.7%
Landline RDD	28.4%	43.2%	41.8%	45.3%	17.0%
Cell RDD	20.7%	45.9%	48.5%	43.4%	16.7%

Table 1-3b. CHIS 2015 Response Rates – Unconditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	22.1%	10.0%	10.4%	9.6%	3.7%
Landline RDD	28.4%	12.3%	11.9%	12.9%	4.8%
Cell RDD	20.7%	9.5%	10.0%	9.0%	3.4%

To maximize the response rate, especially at the screener stage, an advance letter in five languages was mailed to all landline sampled telephone numbers for which an address could be obtained from reverse directory services. An advance letter was mailed for 50.7 percent of the landline RDD sample telephone numbers not identified by the sample vendor as business or nonworking numbers, and for 82.2 percent of surname list sample numbers. Addresses were not available for the cell sample. As in all CHIS cycles since CHIS 2005, a \$2 bill was included with the CHIS 20156 advance letter to encourage cooperation. Additional incentives were offered to cell phone and Phase 2 non-response follow up (NRFU) respondents. Details on the incentives can be found in Table 1-4.

Table 1-4. CHIS 2015 Incentives/remuneration by Interview Type

Type of interview	Amount
<i>Pre-paid</i>	
Landline sample matched to address	\$2
<i>Promised</i>	
Cell Phone Screener	\$5
Cell Phone Adult Interview	\$20
Cell Phone Child Interview	\$10
Cell Phone Teen Interview	\$10
Non-Response Follow-Up Adult Interview	\$40
Non-Response Follow-Up Child Interview	\$20
Non-Response Follow-Up Teen Interview	\$20

We will present a comparison of CHIS 2015-2016 response rates with California BRFSS response rates in the full-cycle 2015-2016 reports. Further information about CHIS data quality and nonresponse bias is available at <http://healthpolicy.ucla.edu/chis/design/Pages/data-quality.aspx>.

After all follow-up attempts to complete the full questionnaire were exhausted, adults who completed at least approximately 80 percent of the questionnaire (i.e., through Section K which covers employment, income, poverty status, and food security), were counted as “complete.” At least some responses in the employment and income series, or public program eligibility and food insecurity series were missing from those cases that did not complete the entire interview. They were imputed to enhance the analytic utility of the data.

Proxy interviews were conducted for any adult who was unable to complete the extended adult interview for themselves, in order to avoid biases for health estimates of chronically-ill or handicapped people. Eligible selected persons were re-contacted and offered a proxy option. For 135 adults, a proxy interview was completed by either a spouse/partner or adult child. A reduced questionnaire, with questions identified as appropriate for a proxy respondent, was administered.

1.6 Weighting the Sample

To produce population estimates from CHIS data, weights are applied to the sample data to compensate for the probability of selection and a variety of other factors, some directly resulting from the design and administration of the survey. The sample is weighted to represent the non-institutionalized population for each sampling stratum and statewide. The weighting procedures used for CHIS 2015- accomplish the following objectives:

- Compensate for differential probabilities of selection for phone numbers (households) and persons within household;
- Reduce biases occurring because non-respondents may have different characteristics than respondents;
- Adjust, to the extent possible, for under-coverage in the sampling frames and in the conduct of the survey; and

- Reduce the variance of the estimates by using auxiliary information.
- Account for the second-phase sampling that was part of the responsive and adaptive design (Phase 2 NRFU).

Past CHIS cycles have used a weighting class approach to develop analysis weights. CHIS 2015 uses a model-based approach designed by RTI International. Despite this change in approach, the adjustment dimensions and steps in CHIS 2015 weight development paralleled past cycle approaches as much as possible.

As part of the weighting process, a household weight was created for all households that completed the screener interview. This household weight is the product of the “base weight” (the inverse of the probability of selection of the telephone number) and a variety of adjustment factors. The household weight is used to compute a person-level weight, which includes adjustments for the within-household sampling of persons and for nonresponse. The final step is to adjust the person-level weight using weight calibration, a procedure that forces the CHIS weights to sum to known population control totals simultaneously from an independent data source (see below).

Population control totals of the number of persons by age, race, and sex at the stratum level for CHIS 2015 were created primarily from the California Department of Finance’s (DOF) 2015 Population Estimates and 2015 Population Projections. The procedure used several dimensions, which are combinations of demographic variables (age, sex, race, and ethnicity), geographic variables (county, Service Planning Area in Los Angeles County, and Health Region in San Diego County), and education. One limitation of using Department of Finance (DOF) data is that it includes about 2.4 percent of the population of California who live in “group quarters” (i.e., persons living with nine or more unrelated persons and includes, for example nursing homes, prisons, dormitories, etc.). These persons were excluded from the CHIS target population and, as a result, the number of persons living in group quarters was estimated and removed from the Department of Finance control totals prior to raking.

The 2015 DOF control totals used to create the CHIS 2015 weights are based on 2010 Census counts, as were those used for the 2013-2014 cycle. Please pay close attention when comparing estimates using CHIS 2013-2014 data with estimates using data from CHIS cycles before 2010. The most accurate California population figures are available when the U.S. Census Bureau conducts the decennial census. For period between each census, population-based surveys like CHIS must use population projections based on the decennial count. For example, population control totals for CHIS 2009 were based on 2009 DOF estimates and projections, which were based on Census 2000 counts with adjustments for demographic changes within the state between 2000 and 2009. These estimates become less accurate and more dependent on the models underlying the adjustments over time. Using the most recent Census population count information to create control totals for weighting produces the most statistically accurate population estimates for the current cycle, but it may produce unexpected increases or decreases in some survey estimates when comparing survey cycles that use 2000 Census-based information and 2010 Census-based information.

1.7 Imputation Methods

Missing values in the CHIS data files were replaced through imputation for nearly every variable. This was a massive task designed to enhance the analytic utility of the files. RTI imputed missing values for those variables used in the weighting process and UCLA-CHPR staff imputed values for nearly every other variable.

Two different imputation procedures were used by RTI to fill in missing responses for items essential for weighting the data. The first imputation technique was a completely random selection from the observed distribution of respondents. This method was used only for a few variables when the percentage of the items missing was very small. The second technique was hot deck imputation without replacement. The hot deck approach is one of the most commonly used methods for assigning values for missing responses. With a hot deck, a value reported by a respondent for a particular item is assigned or donated to a “similar” person who did not respond to that item. The characteristics defining “similar” vary for different variables. To carry out hot deck imputation, the respondents who answer a survey item form a pool of donors, while the item non-respondents form a group of recipients. A recipient is matched to the subset pool of donors based on household and individual characteristics. A value for the recipient is then randomly imputed from one of the donors in the pool. Once a donor is used, it is removed from the pool of donors for that variable. RTI used hot deck imputation to impute the same items in all CHIS cycles since 2003 (i.e., race, ethnicity, home ownership, and education).

UCLA-CHPR imputed missing values for nearly every variable in the data files other than those imputed by RTI and some sensitive variables in which nonresponse had its own meaning. Overall, item nonresponse rates in CHIS 2015 were low, with most variables missing valid responses for less than 1% of the sample.

The imputation process conducted by UCLA-CHPR started with data editing, sometimes referred to as logical or relational imputation: for any missing value, a valid replacement value was sought based on known values of other variables of the same respondent or other sample(s) from the same household. For the remaining missing values, model-based hot-deck imputation without donor replacement was used. This method replaces a missing value for one respondent using a valid response from another respondent with similar characteristics as defined by a generalized linear model with a set of control variables (predictors). The link function of the model corresponds to the nature of the variable being imputed (e.g. linear regression for continuous variables, logistic regression for binary variables, etc.). Donors and recipients are grouped based on their predicted values from the model.

Control variables (predictors) used in the model to form donor pools for hot-decking always included standard measures of demographic and socioeconomic characteristics, as well as geographic region; however, the full set of control variables varies depending on which variable is being imputed. Most imputation models included additional characteristics, such as health status or access to care, which are used to improve the quality of the donor-recipient match. Among the standard list of control variables, gender, age, race/ethnicity and region of California were imputed by RTI. UCLA-CHPR begins their imputation process by imputing household income and educational attainment, so that these characteristics are available for the imputation of other variables. Sometimes CHIS collects bracketed information about the range in which the respondent’s value falls when the respondent will not or cannot report an exact amount. Household income, for example, was imputed using the hot-deck method within ranges defined by a set of auxiliary variables such as bracketed income range and/or poverty level.

The imputation order of the other variables generally followed the questionnaire. After all imputation procedures were complete, every step in the data quality control process is performed once again to ensure consistency between the imputed and non-imputed values on a case-by-case basis.

Chapter 2: CHIS 2015 Response Rates



Memorandum

TO: **Todd Hughes**, Director, California Health Interview Survey (CHIS)
Royce Park, Assistant Director, California Health Interview Survey (CHIS)
Matt Jans, CHIS Analysis Team, UCLA

CC: **Yueyan Wang**, CHIS Analysis Team, UCLA

FROM: **Darryl Cooney**, CHIS Data Processing Lead, RTI

DATE: December 9, 2016

SUBJECT: **Response Rate Report Memo**

The purpose of this memo is to describe the interview-level weighted response rate calculations.

Response Rate:

All response rates are calculated using AAPOR standard definition 4 for response rates as follows

$$\frac{I + P}{(I + P) + (R + NC + O) + e(UH + UO)}$$

See AAPOR standard definitions at [http://www.aapor.org/Standards-Ethics/Standard-Definitions-\(1\).aspx](http://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx)

Each interview is assigned an AAPOR term designating the final status category for the extended interview. For the adult instrument, this term is AAPOR_A, with AAPOR_C and AAPOR_T

denoting the child and teen extended interviews, respectively. In addition, AAPOR_S denotes the response categories for the household as a whole with a respondent being defined as a household with a completed adult, child or teen interview. AAPOR_S can be used to define screener status codes when it is paired with a term that flags completed screeners (end_src_sel in our data). The final AAPOR status are defined in the table below. For the adult interview, eligible respondents includes both completes and partial completes.

AAPOR Value	Status
1	Eligible Respondent
2	Eligible Nonrespondent
3	Ineligible, In scope ¹
4	Ineligible, Out of scope
5	Unknown
6	Unknown, residential HH

¹ : Includes HHs with all residents under 18, group quarters, changed phone numbers, deceased individuals, subject moved out of the area, subject incarcerated

Our data collection and cleaning process identifies almost all ‘ineligible, out of scope’ records and only a very small number remain in one of the unknown categories. These ineligibles include businesses, non-working numbers, and cell phones where we never make contact or reach a voice message. Therefore, in the response rate calculation, ‘ineligible, out of scope’ records are ignored for purposes of creating the eligibility rate. Using this assumption our response calculation, with AAPOR status codes, takes the form below where status code 4 is ignored.

$$\frac{1}{1 + 2 + e(5,6)}$$

where $e(5,6) = \frac{1+2}{1+2+3} * (5 + 6)$

If the ‘ineligible, out of scope’ records were included in the estimated eligibility calculation, then the screener response rates become two to three times higher (45-68%) due to the large number of unknown eligibility cases.

The adult, child and teen AAPOR status code terms are conditional on the screener being completed. This means that the adult, child and teen response rates are all conditional on a screener response.

Weighting:

The response rates are weighted using the phase 2 nonresponse follow-up adjusted individual interview base weights. For the screener this is the household base weight with adjustments applied for (1) surname list sampling, (2) combined frame and vendor types and (3) phase 2 subsampling. For the extended interviews the weights are based on the final household weight modified by (1) the number of eligible individuals in the household and (2) the phase 2 adjustment. The table below details which weight variable delivered to UCLA is used for each response rate calculation. More details on the creation of these weights can be found in the weighting documentation (DLV 9.2).

Interview	Weight
Screener	HW3 ¹
Adult	AW2
Child	CW0
Teen	TW0

¹ : $HW3 = HW2 * AH3$, where AH3 is the phase 2 adjustment

Households were eligible to be selected for phase 2 nonresponse follow-up if any of the extended interviews were not completed yet. HW3 accounts for this phase 2 sample design, but some of the selected households completed their screeners during phase 1. For the screener response rate for households selected as part of phase 2 that completed their screener in phase 1, we divide the phase 2 adjustment, AH3 (phase2_adjust in the data), from their household weight. For the extended interviews this step is accounted for in the individual phase 2 adjusted weight (again reference the weighting documentation).

The teen interview is a special case when examining parental permission. In the weight adjustments parent permission and teen nonresponse are both adjusted for in the same step, so we do not have a weight for teen interviews conditional on parental permission. As a proxy, response rate calculations for teen interviews conditional on parental permission were created using the same adjusted teen weight, TW1, just examining the sub-population where parent permission was obtained.

The household response rate is based on if any extended interview was completed for a household. This response rate uses the household level weights (HW3) but households are only considered if they completed a screener. This means that the household response rate is conditional on screener response similar to the other extended interviews.

Notes about Report:

To understand the counts and response rates in the report a few extra notes need to be discussed. First, the displayed stratum levels are where each record was said to be located at the time of sampling. These locations may differ from each household's actual stratum of residence, based on geocoded and self-reported response (to be displayed in tables 3-2 and 3-3 of Methods Report 3 – Data Processing). In addition, due to display of sampling stratum in the response rate report, the cell phone counts for Sutter and Yuba counties appear to be extreme. There is only one rate center that serves both counties and it is located in Sutter county.

Second, the report breaks down outcomes by the landline frame, the cell frame and overall. The landline frame includes the surname list sampling frames. Overall response rates are weighted and will tend to be closer to cell frame rates as the cell frame carries roughly five times the total weight as the landline frame.

Lastly, there are some differences between the data collection processes between RTI's and Westat's approaches that will cause some differences in the calculated response rates. Westat had the frame vendors perform a larger purge to identify out-of-scope numbers before data collection. We performed a smaller vendor purge and used in house procedures to identify the majority of the out-of-scope numbers. This led to the adjustment for the eligibility rate discussed above in the weighting section and would lead to some differences in response rates.

Appendix A. Response Rates from CHIS 2015 **Screener by Frame and Strata**

Characteristic	Landline		Cell		Overall	
	Completed ¹	RR ⁴ ²	Completed ¹	RR ⁴ ²	Completed ¹	RR ⁴ ²
Total	22276	28.36	17419	20.66	39695	22.07
Stratum ³						
1 Los Angeles (8 SPAs)	4367	27.71	3429	22.69	7796	23.52
2 San Diego (6 HSRs)	1639	29.51	1190	19.37	2829	21.11
3 Orange	1342	25.24	816	17.5	2158	18.71
4 Santa Clara	834	21.25	699	18.98	1533	19.38
5 San Bernardino	791	30.13	466	20.26	1257	21.85
6 Riverside	1109	28.99	802	20.09	1911	21.73
7 Alameda	732	24.21	417	20.07	1149	20.84
8 Sacramento	772	28.63	365	20.88	1137	22.29
9 Contra Costa	453	26.38	326	19.83	779	21.5
10 Fresno	569	32.76	340	24.62	909	26.03
11 San Francisco	365	20.5	233	15.41	598	16.25
12 Ventura	385	28.84	194	18.81	579	20.82
13 San Mateo	269	22.45	199	14.65	468	16.72
14 Kern	366	39.96	310	26.47	676	28.86
15 San Joaquin	252	25.97	185	22.17	437	22.86
16 Sonoma	286	32.98	139	22.09	425	24.7
17 Stanislaus	246	33.98	267	20.46	513	22.62
18 Santa Barbara	221	31.52	213	22.11	434	23.97
19 Solano	257	25.37	124	18.13	381	19.79
20 Tulare	262	33.26	154	21.71	416	23.78
21 Santa Cruz	200	32.49	234	21.32	434	23.56
22 Marin	1391	19.04	1480	8.8	2871	11.39
23 San Luis Obispo	208	38.24	214	20.73	422	24.45
24 Placer	224	31.34	178	17.95	402	21.45
25 Merced	294	35.71	196	24.79	490	26.53
26 Butte	213	39.15	148	23.01	361	26.96
27 Shasta	225	38.67	220	22.63	445	26.22
28 Yolo	218	38.4	163	22.94	381	26.41
29 El Dorado	191	31.07	201	22.55	392	25.16
30 Imperial	335	42.39	219	24.16	554	26.67
31 Napa	237	29.7	249	20.29	486	22.61
32 Kings	303	32.44	279	24.26	582	25.52
33 Madera	267	33.39	217	25.27	484	27.04
34 Monterey	286	26.55	161	25.67	447	25.85

35 Humboldt	185	49.68	136	26.89	321	32.37
36 Nevada	185	34.28	179	19.57	364	24.28
37 Mendocino	189	43.83	196	22.83	385	27.49
38 Sutter ⁴	253	32.46	1031	18.54	1284	20.16
39 Yuba ⁴	280	34.53	5	11.45	285	33.49
40 Lake	189	34.85	186	27.49	375	30.04
41 San Benito	290	31.13	302	22.66	592	23.93
42 Tehama, etc.	208	41.03	143	28.95	351	33.36
43 Del Norte, etc.	183	43.92	109	23.66	292	30.11
44 Tuolumne, etc.	205	40.28	105	23.7	310	30.84

¹ A complete here includes any HH with a completed screening interview

² AAPOR RR4 is calculated as the sum of completes and partial completes divided by the sum of eligible cases and unknown cases (adjusted by the eligibility rate).

³ Stratum displayed is the stratum as each household was sampled, not their reported strata

⁴ Sutter/Yuba sampling stratum counts and response rates are extreme due to the fact that there is one cell phone rate center for both, which is located in Sutter County

Adult by Frame and Strata

Characteristic	Landline		Cell		Overall	
	Completed	RR4 ¹	Completed	RR4 ¹	Completed	RR4 ¹
Total	11282	41.84	9752	48.46	21034	47.16
Stratum ²						
1 Los Angeles (8 SPAs)	2106	40.84	1850	47.52	3956	46.32
2 San Diego (6 HSRs)	829	41.77	678	49.59	1507	48.06
3 Orange	623	37.47	443	48.36	1066	46.6
4 Santa Clara	433	42.8	376	45.74	809	45.28
5 San Bernardino	365	38.61	263	50.7	628	48.34
6 Riverside	536	38.85	462	49.1	998	47.03
7 Alameda	389	44.77	231	48.09	620	47.54
8 Sacramento	413	46.91	221	53.54	634	52.35
9 Contra Costa	252	43.28	178	47.06	430	46.14
10 Fresno	274	40.47	202	50.95	476	48.8
11 San Francisco	180	46.43	133	49.85	313	49.35
12 Ventura	185	37.53	103	45.7	288	43.83
13 San Mateo	146	49.58	107	46.36	253	47.18
14 Kern	179	39.06	173	45.23	352	43.76
15 San Joaquin	116	38.8	107	51.53	223	49.03
16 Sonoma	155	43.84	82	50.99	237	49.16
17 Stanislaus	115	35	139	45.17	254	43.24
18 Santa Barbara	124	45.72	109	42.06	233	42.87
19 Solano	129	40.36	70	45.57	199	44.42
20 Tulare	126	37.58	82	48.32	208	46.01
21 Santa Cruz	113	48.48	139	52.97	252	51.99
22 Marin	740	48.36	835	56.15	1575	54.83
23 San Luis Obispo	118	44.49	111	44.74	229	44.67
24 Placer	113	41.32	111	55.04	224	50.94
25 Merced	144	40.63	115	49.66	259	48.03
26 Butte	126	53.18	86	48.09	212	49.43
27 Shasta	123	40.61	123	47.07	246	45.29
28 Yolo	122	44.84	104	55.16	226	52.25
29 El Dorado	112	48.31	120	50.74	232	49.97
30 Imperial	158	42.83	116	43.98	274	43.7
31 Napa	134	45.34	136	47.55	270	46.99
32 Kings	134	38.18	153	48.64	287	46.71
33 Madera	140	44.3	118	46.38	258	45.83
34 Monterey	147	44.03	88	47.56	235	46.86
35 Humboldt	115	52.83	85	58.16	200	56.34
36 Nevada	116	52.93	111	54.14	227	53.7

37 Mendocino	116	52.85	122	54.13	238	53.75
38 Sutter ³	120	37.16	603	50.73	723	48.54
39 Yuba ³	145	44.5	2	32.6	147	44.31
40 Lake	106	45.78	99	45.14	205	45.38
41 San Benito	154	43.95	166	48.93	320	48.04
42 Tehama, etc.	100	44.23	77	49.71	177	47.23
43 Del Norte, etc.	106	54.6	68	51.15	174	52.5
44 Tuolumne, etc.	105	43.45	55	40.03	160	41.69

¹ AAPOR RR4 is calculated as the sum of completes and partial completes divided by the sum of eligible cases and unknown cases (adjusted by the eligibility rate).

² Stratum displayed is the stratum as each household was sampled, not their reported strata

³ Sutter/Yuba sampling stratum counts and response rates are extreme due to the fact that there is one cell phone rate center for both, which is located in Sutter County

Child by Frame and Strata

Characteristic	Landline		Cell		Overall	
	Completed	RR4 ¹	Completed	RR4 ¹	Completed	RR4 ¹
Total	1004	45.32	1153	43.38	2157	43.62
Stratum ²						
1 Los Angeles (8 SPAs)	189	39.66	231	46.79	420	45.9
2 San Diego (6 HSRs)	83	41.82	79	39.64	162	39.96
3 Orange	45	37.32	40	33.76	85	34.06
4 Santa Clara	47	51.38	42	40.05	89	41.46
5 San Bernardino	30	37.24	31	50.96	61	49.21
6 Riverside	42	42.16	54	46.68	96	46.17
7 Alameda	29	50.5	22	38.35	51	39.7
8 Sacramento	35	53.09	37	64.73	72	63.2
9 Contra Costa	16	46.39	14	32.19	30	34.32
10 Fresno	32	45.77	35	45.47	67	45.51
11 San Francisco	14	64.61	15	41.27	29	43.41
12 Ventura	21	48.86	19	53.94	40	53.3
13 San Mateo	16	68.62	11	38.68	27	44.33
14 Kern	28	57.26	25	31.83	53	35.39
15 San Joaquin	11	51.48	16	41.59	27	42.71
16 Sonoma	18	61.72	14	64.97	32	64.32
17 Stanislaus	9	31.02	17	32.62	26	32.5
18 Santa Barbara	7	44.74	13	36	20	37.2
19 Solano	8	56.85	5	37.98	13	39.51
20 Tulare	13	39.44	12	33.29	25	34.31
21 Santa Cruz	10	37.7	17	50.2	27	48.28
22 Marin	49	38.71	73	40.48	122	40.29
23 San Luis Obispo	4	21.73	13	32.79	17	31.19
24 Placer	3	40.3	12	43.43	15	42.97
25 Merced	15	42.7	18	41.18	33	41.37
26 Butte	10	65.19	11	56.81	21	58.02
27 Shasta	9	71.83	17	49.18	26	51.47
28 Yolo	12	53.21	17	59.3	29	58.21
29 El Dorado	7	64.64	10	44.58	17	48.65
30 Imperial	24	54.46	14	35.71	38	39.99
31 Napa	12	72.97	14	45.25	26	49.61
32 Kings	29	41.37	23	40.3	52	40.51
33 Madera	6	34.44	16	31.41	22	31.74
34 Monterey	18	67.71	8	34.21	26	37.95
35 Humboldt	11	41.97	6	36.23	17	37.82
36 Nevada	6	60.97	4	17.1	10	24.81

37 Mendocino	15	71.52	7	35.95	22	48.41
38 Sutter ³	16	56.36	87	48.2	103	48.89
39 Yuba ³	14	57.74	0	0	14	57.74
40 Lake	7	61.44	10	35.49	17	41.11
41 San Benito	14	46.34	25	45.35	39	45.44
42 Tehama, etc.	8	55.67	7	43.52	15	48.22
43 Del Norte, etc.	9	58.25	6	58.59	15	58.5
44 Tuolumne, etc.	3	10.3	6	28.58	9	23.49

¹ AAPOR RR4 is calculated as the sum of completes and partial completes divided by the sum of eligible cases and unknown cases (adjusted by the eligibility rate).

² Stratum displayed is the stratum as each household was sampled, not their reported strata

³ Sutter/Yuba sampling stratum counts and response rates are extreme due to the fact that there is one cell phone rate center for both, which is located in Sutter County

Teen by Frame and Strata (including obtaining parent permission)

Characteristic	Landline		Cell		Overall	
	Completed	RR4 ¹	Completed	RR4 ¹	Completed	RR4 ¹
Total	376	16.99	378	16.66	754	16.72
Stratum ²						
1 Los Angeles (8 SPAs)	87	19.11	62	16.76	149	17.17
2 San Diego (6 HSRs)	27	14.44	28	17.42	55	16.83
3 Orange	19	11.57	14	17.03	33	16.21
4 Santa Clara	18	20.13	8	12.64	26	14.16
5 San Bernardino	11	15.74	11	18.67	22	18.15
6 Riverside	12	11.33	25	21.5	37	19.74
7 Alameda	14	14.3	5	6.85	19	8.32
8 Sacramento	15	18.55	4	11.44	19	13.06
9 Contra Costa	6	19.94	6	8.24	12	10.34
10 Fresno	10	12.93	12	18.57	22	17.71
11 San Francisco	7	17.81	2	15.71	9	16.09
12 Ventura	9	17.4	3	10.97	12	12.52
13 San Mateo	2	9.25	4	34.13	6	25.92
14 Kern	15	32.14	16	22.57	31	24.58
15 San Joaquin	0	0	4	10.18	4	8.33
16 Sonoma	2	9.6	2	10.98	4	10.77
17 Stanislaus	4	14.14	9	21.95	13	20.96
18 Santa Barbara	7	55.84	6	16.87	13	26.55
19 Solano	2	3.68	3	20.54	5	16.29
20 Tulare	6	20.85	7	24.13	13	23.29
21 Santa Cruz	1	1.84	5	20.54	6	15.24
22 Marin	26	19.21	18	13.74	44	14.82
23 San Luis Obispo	4	20.59	3	10.2	7	11.71
24 Placer	2	23.87	7	27.16	9	26.62
25 Merced	4	11.32	11	28.06	15	26.52
26 Butte	3	14.87	2	23.09	5	21.8
27 Shasta	2	13.79	5	11.35	7	12.04
28 Yolo	2	10.66	5	27.68	7	22.63
29 El Dorado	1	10.4	2	6.9	3	8.2
30 Imperial	13	29.07	9	17.11	22	19.79
31 Napa	4	33.13	8	17.8	12	20.63
32 Kings	3	9.53	9	16.45	12	15.2
33 Madera	4	7.86	2	5.03	6	5.65
34 Monterey	6	24.77	3	6.37	9	11.17
35 Humboldt	3	35.56	1	6.04	4	15.1
36 Nevada	6	64.45	6	32.03	12	41.52

37 Mendocino	2	11.62	5	15.88	7	14.82
38 Sutter ³	3	20.35	30	16.17	33	16.68
39 Yuba ³	3	5.91	0	0	3	5.91
40 Lake	3	35.42	2	6.14	5	9.24
41 San Benito	4	17.05	9	21.51	13	20.73
42 Tehama, etc.	1	1.7	2	24.83	3	11.47
43 Del Norte, etc.	3	6.3	3	20.36	6	13.78
44 Tuolumne, etc.	0	0	0	0	0	0

¹ AAPOR RR4 is calculated as the sum of completes and partial completes divided by the sum of eligible cases and unknown cases (adjusted by the eligibility rate).

² Stratum displayed is the stratum as each household was sampled, not their reported strata

³ Sutter/Yuba sampling stratum counts and response rates are extreme due to the fact that there is one cell phone rate center for both, which is located in Sutter County

Appendix B. Response Rates from other RDD Surveys

These response rates for other RDD surveys in the United States are presented to illustrate the range of response rates currently being achieved across a wide range of telephone surveys. Differences in the specific target population, sample and data collection design, respondent burden, use of incentives, and other factors can all contribute to observed differences in response rates across surveys.

Survey	Year	Landline	Cell Phone
Ohio Medicaid Assessment Survey ¹	2015	25.8%	22.9%
The Commonwealth Fund 2010 Biennial Health Insurance Survey ²	2012	29.0%	25.0%
National Immunization Survey (NIS) ³	2014	62.6% ^a	33.5%
Pew Internet and American Life Project ⁴	2012	30.0%	20.0%
PSRAI Omnibus Survey ⁵	2015	5.0%	4.0%
National Adult Tobacco Survey (NATS) ⁶	2012/2013	47.2%	36.3%
BRFSS ⁷	2015	48.2%	47.2%

1- <http://grc.osu.edu/sites/default/files/inline-files/12015OMASmethReptFinal121115psg.pdf>

2- <http://www.commonwealthfund.org/interactives-and-data/surveys/2011/mar/2010-biennial-health-insurance-survey>

3- <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6433a1.htm>

4- <http://www.people-press.org/2006/05/15/the-cell-phone-challenge-to-survey-research/>

5- <http://www.pewinternet.org/2015/04/01/appendix-a-about-the-december-week-1-and-week-3-omnibus-survey/>

6- http://www.cdc.gov/tobacco/data_statistics/surveys/nats/pdfs/2012-2013-nats-methodology-final.pdf

7- https://www.cdc.gov/brfss/annual_data/2015/pdf/2015-sdqr.pdf

Chapter 3: Additional Detail on CHIS 2015 Response Rates

Table 3-1 Household Response Rate

Table 3-1 below displays the household response rate by stratum and frame for CHIS 2015. For the purposes of the adult, child, and teen response rates in the memo above, a complete is defined for each specific type of interview. For the household response rate below, a complete is defined by having any one of those interviews in the household (and the denominator is based on households, not eligible adults, teens, or children). This table corresponds to Table 6-4 and others in *CHIS 2013-2014 Methodology Reports #4 Response Rates*.

Table 3-1. Household response rates by sampled stratum

Characteristic	Landline		Cell		Overall	
	Completed ¹	RR4 ²	Completed ¹	RR4 ²	Completed ¹	RR4 ²
Total	11648	43.22	9796	45.86	21444	45.24
Stratum ³						
1 Los Angeles (8 SPAs)	2173	41.42	1862	45.09	4035	44.37
2 San Diego (6 HSRs)	858	45.93	678	46.92	1536	46.68
3 Orange	645	39.46	444	45.89	1089	44.55
4 Santa Clara	452	44.39	377	42.82	829	43.13
5 San Bernardino	380	38.13	264	45.1	644	43.52
6 Riverside	554	39.6	462	45.9	1016	44.36
7 Alameda	400	44.15	231	47.72	631	46.91
8 Sacramento	425	47.89	225	52.55	650	51.48
9 Contra Costa	256	45.84	179	44.59	435	44.97
10 Fresno	287	43.87	204	46.73	491	46.13
11 San Francisco	183	43.64	133	46.51	316	45.91
12 Ventura	195	40.01	104	42.97	299	42.17
13 San Mateo	152	50.11	107	44.14	259	46.2
14 Kern	191	43.33	175	43.75	366	43.65
15 San Joaquin	121	38.75	109	50.32	230	47.71
16 Sonoma	162	48.65	84	50.93	246	50.19
17 Stanislaus	120	38.52	140	42.16	260	41.29
18 Santa Barbara	127	46.09	109	37.4	236	39.53
19 Solano	134	44.7	70	42.38	204	43.03
20 Tulare	134	40.37	82	45.11	216	43.91
21 Santa Cruz	116	45.71	139	50.14	255	48.91
22 Marin	761	47.08	836	49.59	1597	48.52
23 San Luis Obispo	118	43.66	112	46.12	230	45.28

24 Placer	113	42.12	112	50.99	225	47.74
25 Merced	147	40.7	115	47.77	262	46.23
26 Butte	128	51.54	86	47.22	214	48.68
27 Shasta	125	44.51	123	47.08	248	46.22
28 Yolo	125	47.74	106	54.94	231	52.58
29 El Dorado	115	51.42	120	49.91	235	50.48
30 Imperial	163	45.39	117	42.75	280	43.32
31 Napa	140	49.64	136	45	276	46.46
32 Kings	142	37.44	154	48.43	296	46.13
33 Madera	140	44.16	118	44.02	258	44.06
34 Monterey	152	43.99	88	43.13	240	43.31
35 Humboldt	120	54.91	86	56.8	206	56.1
36 Nevada	116	48.17	111	49.7	227	49
37 Mendocino	121	56.62	122	49.22	243	51.59
38 Sutter ⁴	125	41.25	604	48.69	729	47.3
39 Yuba ⁴	149	45.7	2	25.12	151	45.33
40 Lake	107	43.77	101	42.99	208	43.29
41 San Benito	157	45.19	167	47.04	324	46.68
42 Tehama, etc.	103	41.81	77	48.17	180	45.28
43 Del Norte, etc.	108	51.08	68	49.54	176	50.26
44 Tuolumne, etc.	108	45.43	57	41.25	165	43.63

¹ A complete here includes any HH with any completed extended interview (adult, child, or teen) weighted by the HH weight

² AAPOR RR4 is calculated as the sum of completes and partial completes divided by the sum of eligible cases and unknown cases (adjusted by the eligibility rate).

³ Stratum displayed is the stratum as each household was sampled, not their reported strata

⁴ Sutter/Yuba sampling stratum counts and response rates are extreme due to the fact that there is one cell phone rate center for both, which is located in Sutter County

Note: Corresponds to Table 6-4 and others in CHIS 2013-2014 methodology report.

Table 3-2 Conditional Teen Response Rate

Table 3-2 below displays the conditional teen response rate, meaning it is the teen response rate conditional on obtaining parental consent. The teen response rates reported in the memo above include the parental permission rate in the calculation (e.g., parental permission rate * conditional teen response rate). Neither rate takes into account household-level screener rate. This table corresponds to Table 6-7 in *CHIS 2013-2014 Methodology Report #4 – Response Rates*.

Table 3-2. Adolescent response rates (unconditional) by characteristics of the sampled adolescent and stratum

Characteristic	Unconditional Adolescent Response Rate					
	Landline		Cell		Overall	
	Completed	RR4 ¹	Completed	RR4 ¹	Completed	RR4 ¹
Total	376	67.24	378	69.87	754	69.35
Sex						
Male	197	65.21	186	63.88	383	64.12
Female	178	69.03	192	77.22	370	75.41
Don't know/refused	1	100	0	0	1	100
Age						
12 to 14 years	195	97.06	200	99.59	395	99.09
15 to 17 years	179	99.33	177	98.75	356	98.86
Don't know/refused	0	0	0	0	0	0
Stratum ²						
1 Los Angeles (8 SPAs)	87	68.56	62	68.08	149	68.17
2 San Diego (6 HSRs)	27	59.12	28	69.04	55	67.14
3 Orange	19	57.37	14	70.67	33	68.97
4 Santa Clara	18	96.39	8	70.63	26	76.53
5 San Bernardino	11	74.36	11	56.7	22	58.85
6 Riverside	12	55.48	25	68.8	37	67.19
7 Alameda	14	60.88	5	50	19	53.21
8 Sacramento	15	73.36	4	73.01	19	73.12
9 Contra Costa	6	86.55	6	65.39	12	71.43
10 Fresno	10	74.11	12	67.7	22	68.36
11 San Francisco	7	98.9	2	74.35	9	78.28
12 Ventura	9	43.21	3	62.09	12	54.17
13 San Mateo	2	20.57	4	84.38	6	61.8
14 Kern	15	97.38	16	86.01	31	88.86
15 San Joaquin	0	0	4	61.25	4	47.58
16 Sonoma	2	100	2	80.22	4	82.39

17 Stanislaus	4	100	9	100	13	100
18 Santa Barbara	7	93.83	6	92.52	13	93.2
19 Solano	2	37.96	3	52.9	5	51.74
20 Tulare	6	100	7	91.72	13	93.5
21 Santa Cruz	1	21.9	5	56.98	6	54.02
22 Marin	26	77.94	18	75.11	44	75.82
23 San Luis Obispo	4	100	3	67.53	7	73.65
24 Placer	2	100	7	100	9	100
25 Merced	4	44.56	11	100	15	95.32
26 Butte	3	63.11	2	83.31	5	80.56
27 Shasta	2	100	5	46.12	7	55.81
28 Yolo	2	60.44	5	75.58	7	73.03
29 El Dorado	1	44.63	2	39.87	3	41.98
30 Imperial	13	95.79	9	86.61	22	89.43
31 Napa	4	77.62	8	100	12	92.14
32 Kings	3	83.18	9	74.74	12	75.61
33 Madera	4	56.97	2	62.91	6	60.98
34 Monterey	6	61.49	3	66.99	9	63.69
35 Humboldt	3	100	1	50	4	78.29
36 Nevada	6	100	6	100	12	100
37 Mendocino	2	47.59	5	85.21	7	73.8
38 Sutter ³	3	93.23	30	77.65	33	79.61
39 Yuba ³	3	100	0	0	3	100
40 Lake	3	100	2	35.56	5	48.16
41 San Benito	4	36.41	9	100	13	79.85
42 Tehama, etc.	1	20.8	2	58.35	3	50.54
43 Del Norte, etc.	3	13.12	3	79.36	6	38.13
44 Tuolumne, etc.	0	0	0	0	0	0

Note: corresponds to Table 6-7 in CHIS 2013-2014