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CHIS 2015-2016 Methodology Report Series

Report 2

Data Collection Methods

CALIFORNIA HEALTH INTERVIEW SURVEY

CHIS 2015-2016 METHODOLOGY SERIES

REPORT 2

DATA COLLECTION METHODS

OCTOBER 2017

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www.chis.ucla.edu

This report describes the data collection methods used in CHIS 2015-2016. It was a telephone survey using random digit dialing (RDD) samples of landline and cellular telephone numbers, as well as list samples to augment the yield for certain racial and ethnic groups and an area sample to sample a targeted geography including sparsely-populated communities. All data were collected using a computer-assisted telephone interviewing (CATI) system. Activities included under "data collection" for purposes of this report include RTI involvement in developing and programming the survey instruments, recruiting and training interviewers to administer the survey in six languages, planning and implementing a strategy for release of the sample in the CATI automated scheduler, contacting respondents and conducting interviews, and implementing quality assurance procedures.

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The California Health Interview Survey is a collaborative project of the UCLA Center for Health Policy Research, the California Department of Public Health, and the Department of Health Care Services. Funding for CHIS 2015-2016 came from multiple sources: the California Department of Health Care Services, the California Department of Health Care Services (Mental Health Services Division), the California Department of Public Health, The California Endowment, the California Health Benefit Exchange, the California Health Care Foundation, the California Tobacco Control Program and UC San Diego, the California Wellness Foundation, First 5 California, Kaiser Permanente, Keiro Senior HealthCare, San Diego County Health and Human Services Agency, the Williams Institute at UCLA Law School, Marin County Health and Human Services, Imperial County Public Health Department, and the California Immigration Research Initiative.

PREFACE

Data Collection Methods is the second in a series of methodological reports describing the 2015-2016 California Health Interview Survey (CHIS 2015-2016). The other reports are listed below.

CHIS is a collaborative project of the University of California, Los Angeles (UCLA) Center for Health Policy Research, the California Department of Public Health, and the Department of Health Care Services. RTI International was responsible for data collection and the preparation of five methodological reports from the 2015-2016 survey. The survey examines public health and health care access issues in California. The telephone survey is the largest state health survey ever undertaken in the United States.

Methodological Report Series for CHIS 2015-2016

The methodological reports for CHIS 2015-2016 are as follows:

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

The reports are interrelated and contain many references to each other. For ease of presentation, the references are simply labeled by the report numbers given above. After the Preface, each report includes an "Overview" (Chapter 1) that is nearly identical across reports, followed by detailed technical documentation on the specific topic of the report.

Report 2: Data Collection Methods (this report) describes how data were collected for CHIS 2015-2016, a random digit dial (RDD) telephone survey of landline and cellular telephone numbers in California, supplemented with list samples to augment the yield for certain ethnic groups and an address-based sample (ABS) to increase the yield in one county. All data were collected using a computer-assisted telephone interviewing (CATI) system with the exception of a mailed household information sheet to obtain telephone numbers for the ABS sample.

For further methodological details not covered in this report, refer to the other methodological reports in the series at http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx. General

information on CHIS data can be found on the California Health Interview Survey Web site at http://www.chis.ucla.edu or by contacting CHIS at CHIS@ucla.edu.

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1. CHIS 2015-2016 SAMPLE DESIGN AND METHODOLOGY SUMMARY

1.1 Overview

A series of five methodology reports are available with more detail about the methods used in CHIS 2015-2016.

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

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

The 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. The UCLA Center for Health Policy Research (UCLA-CHPR) conducts CHIS 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 and 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 to 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. CHIS 2016 data were collected between January and December 2016. Approximately half of the interviews were conducted during the 2015 calendar year and half during the 2016 calendar year. 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).

See what's new in the 2015-2016 CHIS sampling and data collection here:
http://healthpolicy.ucla.edu/chis/design/Documents/whats-new-chis-2015-2016.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 *CHIS 2015-2016 Methodology Series: Report 5—Weighting and Variance Estimation* posted at http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx. 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 the required number of completed adult interviews by using approximately 50% landline and 50% cellular phone numbers. For the RDD sample, 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 eight sub-strata for Service Planning Areas, and the San Diego County stratum included six sub-strata for Health Service Districts. Most of the strata (39 of 44) consisted of a single county with no sub-strata (see counties 3-41 in Table 1-1). Three multi-county strata comprised the 17 remaining counties (see counties 42-44 in Table 1-1). 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. Asian surname sample list frames added 426 Japanese, 280 Korean, and 359 Vietnamese adult interviews based on self-identified ethnicity for the combined 2015 and 2016 survey years.[1] Additional samples from both the landline and cell phone frames produced 1,042 interviews in 2015 within Marin County and 2,388 interviews in 2016 within San Diego County. Furthermore, an address-based sample from the USPS Delivery Sequence File produced 258 landline or cell phone interviews in 2016 within the northern part of Imperial County.

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

[1] For the 2015 and 2016 survey years combined, all sample frames produced totals of 667 Japanese, 497 Korean, and 597 Vietnamese adult interviews.

selected parent/guardian were randomly selected; the adolescent was interviewed directly, and the adult sufficiently 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 increase the sample size further for Koreans and Vietnamese. Surname and given name lists were used similarly to increase the yield of Californians of Japanese descent.

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 and 2016, the goal was to complete approximately 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. The adult owner of the sampled cell phone number was automatically selected for CHIS. Cell numbers used exclusively by children under 18 were considered ineligible. A total of 1,594 teen interviews and 4,293 child interviews were completed in CHIS 2015-2016 with approximately 58% 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.[2] 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 interview. Thus, adults in households with landlines who had their own cell phones or shared

[2] http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201605.pdf

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.

Table 1-1. California county and county group strata used in the CHIS 2015-2016 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.

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 has also evolved as more information about cell numbers has become available. In CHIS 2007, the cell phone frame was stratified into seven 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 2015-2016.

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 2015-2016 were the first cycle years that Tagalog interviewers were conducted from the beginning of data collection. 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.

RTI International designed the methodology and collected data for CHIS 2015-2016, under contract with the UCLA Center for Health Policy Research. RTI is 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 in each sampled household, 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 continued 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 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 2015-2016 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.

Interviews in all languages were administered using RTI's computer-assisted telephone interviewing (CATI) system. The average adult interview took about 41 minutes to complete. The average child and adolescent interviews took about 19 minutes and 22 minutes, respectively. For "child-first" interviews, additional household information asked as part of the child interview averaged about 12 minutes. Interviews in non-English languages typically took somewhat longer to complete. More than 13 percent of the adult interviews were completed in a language other than English, as were about 24 percent of all child (parent proxy) interviews and 25 percent of all adolescent interviews.

Table 1-2. Number of completed CHIS 2015-2016 interviews by type of sample and instrument

Type of sample[1]	Adult[2]	Child	Adolescent
Total all samples	42,089	4,293	1,594
Landline RDD	15,106	1,178	542
Vietnamese surname list	3,558	316	111
Korean surname list	1,772	130	64
Japanese surname list	631	34	25
Cell RDD	19,722	2,521	807
Marin County Oversample[3]	1,042	83	33
Imperial County ABS Oversample	258	31	12

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

[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 182 of the 3,558 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.

Table 1-3 shows the major topic areas for each of the three survey instruments (adult, child, and adolescent).

Table 1-3. CHIS 2015-2016 survey topic areas by instrument

Health status	**Adult**	**Teen**	**Child**
General health status	✓	✓	✓
Days missed from school due to health problems		✓	✓
Health-related quality of life (HRQOL)	✓	✓	
Health conditions	**Adult**	**Teen**	**Child**
Asthma	✓	✓	✓
Diabetes, gestational diabetes, pre- /borderline diabetes	✓		
Heart disease, high blood pressure, stroke	✓		
Physical, behavioral, and/or mental conditions			✓
Physical disabilities, blindness, deafness	✓		
Mental health	**Adult**	**Teen**	**Child**
Mental health status	✓	✓	
Perceived need, access and utilization of mental health services	✓	✓	
Suicide ideation and attempts	✓	✓	
Functional impairment, stigma	✓		
Health behaviors	**Adult**	**Teen**	**Child**
Dietary intake, fast food and soda intake	✓	✓	✓
Water Consumption		✓	
Physical activity and exercise, commute from school to home		✓	✓
Sedentary time		✓	✓
Walking for transportation and leisure	✓		
Doctor discussed nutrition/physical activity		✓	✓
Flu Shot	✓	✓	✓
Alcohol use	✓	✓	
Cigarette and E-cigarette use	✓	✓	
Sexual behavior	✓	✓	
Breastfeeding			✓
Women's health	**Adult**	**Teen**	**Child**
Mammography screening	✓		
Pregnancy	✓		
Dental health	**Adult**	**Teen**	**Child**
Last dental visit, main reason haven't visited dentist	✓	✓	✓

(continued)

Table 1-3. CHIS 2015-2016 survey topic areas by instrument (continued)

Neighborhood and housing	**Adult**	**Teen**	**Child**
Safety, social cohesion	✓	✓	✓
Homeownership, length of time at current residence	✓		
Park use		✓	✓
Civic engagement	✓	✓	
Building Healthy Communities	✓		
Access to and use of health care	**Adult**	**Teen**	**Child**
Usual source of care, visits to medical doctor	✓	✓	✓
Emergency room visits	✓	✓	✓
Delays in getting care (prescriptions and medical care)	✓	✓	✓
Medical home, timely appointments, hospitalizations	✓	✓	✓
Developmental screening			✓
Communication problems with doctor	✓		✓
Internet use for health information	✓		✓
Tele-medical care	✓		
Family planning	✓		
Change of usual source of care	✓		
Food environment	**Adult**	**Teen**	**Child**
Access to fresh and affordable foods	✓		
Where teen/child eats breakfast/lunch, fast food at school		✓	✓
Availability of food in household over past 12 months	✓		
Hunger	✓		
Health insurance	**Adult**	**Teen**	**Child**
Current insurance coverage, spouse's coverage, who pays for coverage	✓	✓	✓
Health plan enrollment, characteristics and plan assessment	✓	✓	✓
Whether employer offers coverage, respondent/spouse eligibility	✓		
Coverage over past 12 months, reasons for lack of insurance	✓	✓	✓
Difficulty finding private health insurance	✓		
High deductible health plans	✓	✓	✓
Partial scope Medi-Cal	✓		

(continued)

Table 1-3. CHIS 2015-2016 survey topic areas by instrument (continued)

Public program eligibility	**Adult**	**Teen**	**Child**
Household poverty level	✓		
Program participation (CalWORKs, Food Stamps, SSI, SSDI, WIC, TANF)	✓	✓	✓
Assets, alimony/child support, social security/pension, worker's compensation	✓		
Medi-Cal and Healthy Families eligibility	✓	✓	✓
Reason for Medi-Cal non-participation among potential beneficiaries	✓	✓	✓
Bullying and interpersonal violence	**Adult**	**Teen**	**Child**
Bullying, personal safety, school safety, interpersonal violence		✓	
Parental involvement/adult supervision	**Adult**	**Teen**	**Child**
Adult presence after school, role models, resiliency		✓	
Parental involvement		✓	
Child care and school attendance	**Adult**	**Teen**	**Child**
Current child care arrangements			✓
Paid child care	✓		
Preschool/school attendance, name of school		✓	✓
Preschool quality			✓
School instability		✓	
First 5 California: "Talk, Read, Sing Program"			✓
Employment	**Adult**	**Teen**	**Child**
Employment status, spouse's employment status	✓		
Hours worked at all jobs	✓		
Income	**Adult**	**Teen**	**Child**
Respondent's and spouse's earnings last month before taxes	✓		
Household income, number of persons supported by household income	✓		
Respondent characteristics	**Adult**	**Teen**	**Child**
Race and ethnicity, age, gender, height, weight	✓	✓	✓
Veteran status	✓		
Marital status, registered domestic partner status (same-sex couples)	✓		
Sexual orientation	✓		
Education, English language proficiency	✓		
Citizenship, immigration status, country of birth, length of time in U.S., languages spoken at home	✓	✓	✓
Education of primary caretaker			✓
Citizenship, immigration status, country of birth, and length of time in U.S. of parents			✓

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

1.5 Responsive and Adaptive Design Elements

The CHIS 2015 and 2016 data collection protocol included the following two responsive design protocols to maximize response rates, provide protection against nonresponse bias, and control data collection costs:

1) a propensity model experiment in the first phase of each quarterly data collection that identified a set of cases with low propensities to discontinue calling for the remainder of Phase 1
2) a second nonresponse follow-up (NRFU) phase in each quarterly data collection period where a different protocol was implemented to increase response rates and reduce the risk of nonresponse bias.

Additional documentation on the responsive design protocols and outcomes is available in the *CHIS 2015-2016 Methodology Series: Report 2—Data Collection Methods* posted at http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx.

1.6 Response Rates

The overall response rates for CHIS 2015 and 2016 are composites 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 9.1 percent (the product of the screener response rate of 21.0 and the extended interview response rate at the household level of 43.2 percent). The cell sample household response rate was 9.8 percent, incorporating a screener response rate of 21.5 percent household-level extended interview response rate of 45.9 percent. For CHIS 2016, the landline/list sample household response rate was 6.8 percent (the product of the screener response rate of 15.5 and the extended interview response rate at the household level of 44.0 percent). The cell sample household response rate was 8.4 percent, incorporating a screener response rate of 18.5 percent household-level extended interview response rate of 45.4 percent. CHIS uses AAPOR response rate RR4 (see more detailed in *CHIS 2015-2016 Methodology Series: Report 4 – Response Rates*).

Within the landline and cell phone sampling frames for 2015, the extended interview response rate for the landline/list sample varied across the adult (41.8 percent), child (44.7 percent) and adolescent (17.1 percent) interviews. For 2016, the extended interview response rate for the landline/list sample varied across the adult (41.3 percent), child (69.6 percent) and adolescent (17.9 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 43.9 percent, and the adolescent rate was 17.4 percent in 2015 (see Table 1-4a). The adult interview response rate for the cell sample was 46.9 percent, the child rate was 59.7 percent, and the adolescent rate was 21.6 percent in 2016 (see Table 1-4c). Multiplying these rates by the screener response rates used in the household rates above gives an overall response rate for each type of interview for each survey year (see Table 1-4b and Table 1-4d, respectively). 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 1-4a. CHIS 2015 response rates – Conditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	21.4%	45.2%	47.2%	44.0%	17.3%
Landline RDD	21.0%	43.2%	41.8%	44.8%	17.1%
Cell RDD	21.5%	45.9%	48.5%	43.9%	17.4%

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

Table 1-4b. CHIS 2015 response rates – Unconditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	21.4%	9.7%	10.1%	9.4%	3.7%
Landline RDD	21.0%	9.1%	8.8%	9.4%	3.6%
Cell RDD	21.5%	9.8%	10.4%	9.4%	3.7%

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

Table 1-4c. CHIS 2016 response rates – Conditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	17.8%	45.1%	44.6%	63.0%	20.0%
Landline RDD	15.5%	44.0%	41.3%	69.6%	17.9%
Cell RDD	18.5%	45.4%	46.9%	59.7%	21.6%

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

Table 1-4d. CHIS 2016 response rates – Unconditional

Type of sample	Screener	Household	Adult (given screened)	Child (given screened)	Adolescent (given screened & permission)
Overall	17.8%	8.0%	7.9%	11.2%	3.6%
Landline RDD	15.5%	6.8%	6.4%	10.8%	2.8%
Cell RDD	18.5%	8.4%	8.7%	11.1%	4.0%

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

Table 1-5. 2015-2016 CHIS incentives by interview type

Type of interview	Adult
Cell Phone Screener	$5
Cell Phone Adult Interview	$20
Cell Phone Child Interview	$10
Cell Phone Teen Interview	$10
Nonresponse Follow-Up Adult Interview	$40
Nonresponse Follow-Up Child Interview	$20
Nonresponse Follow-Up Teen Interview	$20

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

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 34.5 percent of the landline RDD sample telephone numbers not identified by the sample vendor as business numbers or not identified by RTI's dialer software as nonworking numbers, and for 92.3 percent of surname list sample numbers. Combining these two frames, advance letters were sent to 40.5 percent of all fielded landline telephone 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 2015-2016 advance letter to encourage cooperation. Additional incentives were offered to cell phone and Phase 2 nonresponse follow up (NRFU) respondents. Details on the incentives are provided in Table 1-5.

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. In the 2015-2016 CHIS, either a spouse/partner or adult child completed a proxy interview for 274 adults. A reduced questionnaire, with questions identified as appropriate for a proxy respondent, was administered.

Further information about CHIS data quality and nonresponse bias is available at http://healthpolicy.ucla.edu/chis/design/Pages/data-quality.aspx.

1.7 Weighting the Sample

To produce population estimates from CHIS data, weights were 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 was weighted to represent the non-institutionalized population for each sampling stratum and statewide. The weighting procedures used for CHIS 2015-2016 accomplish the following objectives:

- Compensate for differential probabilities of selection for phone numbers (households) and persons within household;
- Reduce biases occurring because nonrespondents may have different characteristics than respondents;
- Adjust, to the extent possible, for undercoverage in the sampling frames and in the conduct of the survey;
- Reduce the variance of the estimates by using auxiliary information; and
- Account for the second-phase sampling that was part of the responsive and adaptive design (Phase 2 NRFU).

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 was used to compute a person-level weight, which includes adjustments for the within-household sampling of persons and for nonresponse. The final step was to adjust the person-level weight using weight calibration, a procedure that forced the CHIS weights to sum to estimated 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 2015-2016 were created primarily from the California Department of Finance's (DOF) 2015 and 2016 Population Estimates, and associated 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 calibration.

The DOF control totals used to create the CHIS 2015 and 2016 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 2015-2016 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 periods 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.

1.8 Imputation Methods

Missing values in the CHIS data files were replaced through imputation for nearly every variable. This was a substantial 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. The hot deck approach is one of the most commonly used methods for assigning values for missing responses. Using a hot deck, a value reported by a respondent for a specific item was 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 answered a survey item formed a pool of donors, while the item nonrespondents formed a group of recipients. A recipient was matched to the subset pool of donors based on household and individual characteristics. A value for the recipient was then randomly imputed from one of the donors in the pool. RTI used hot deck imputation to impute the same items that have been imputed 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 for which nonresponse had its own meaning. Overall, item nonresponse rates in CHIS 2015 and CHIS 2016 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 replaced 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 corresponded to the nature of the variable being imputed (e.g. linear regression for continues variables, logistic regression for binary variables, etc.). Donors and recipients were 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 began 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 was performed once again to ensure consistency between the imputed and non-imputed values on a case-by-case basis.

2. SCREENING INTERVIEW AND CATI INSTRUMENT STRUCTURE

For a given household, CHIS 2015-2016 interviews could include up to three substantive interviews: one adult, one child, and one adolescent extended interview. In addition to providing the substantive survey content, the computer-assisted telephone interviewing (CATI) instruments performed sampling and administrative functions, including identifying eligible individuals and selecting sample members from among them, identifying appropriate respondents for the various questionnaires, and sequencing the activities within a household. These functions were programmed into the CATI instrument and are described in this chapter.

As described in Chapter 1, five distinct sampling frames were used for CHIS 2015-2016. The landline RDD (referred to as "landline") and cellular RDD (referred to as "cell") were part of CHIS cycles since 2009. CHIS 2015-16 also included a list sample to increase the number of respondents of Korean, Vietnamese, and Japanese descent. Finally, an address-based sample (ABS) was used to increase the yield of residents of Northern Imperial County. Administrative functions varied slightly across samples, but the content of the extended interview questionnaires was virtually identical for each sample.

2.1 Initial Screening Interview for the Landline and List Samples

The CHIS 2015-2016 sample was composed of telephone numbers selected as described in *CHIS 2015-2016 Methodology Series: Report 1 – Sample Design*. On first contact with a sampled landline telephone number, interviewers:

- identified a household member 18 years of age or older to act as informant (i.e., screener respondent);
- determined whether the telephone number was associated with a residence; and
- asked how many persons 18 or older lived in the household, and selected one for the extended interview.

These basic elements were scripted into the initial screening interview for the landline sample. As in other CHIS cycles since 2003, the initial screener usually did not include an enumeration of adults in the household. Rather, the sample selection algorithm described by Rizzo et al. (2004) was based on the number of adults reported as follows:

- If one adult in the household, that adult was selected;

- If two adults in the household, either the screener respondent or the other adult was randomly selected with probability equal to 0.5 for each; or
- If three or more adults in the household, the screener respondent was randomly selected with probability equal to one over the number of adults.

The following elements were included in the initial landline screener to assist in sample selection and developing survey weights:

- Number of children under 12 years of age living in the household;[3]
- Number of adolescents between 12 and 17 years of age living in the household; and
- Number and use (home, business) of telephone numbers ringing into the household.[4]

If an adolescent was also sampled in the screener, an adolescent interview could be completed before the adult interview if the screener respondent could give permission.

Starting with CHIS 2005, the landline/list screening interview included enumeration and sampling of children and adolescents once an adult was sampled for the extended interview if the following circumstances applied:

- The household included one or more children age 11 or under;
- The sampled adult was the parent or legal guardian of one or more of those children; and
- The sampled adult was the spouse of the screener respondent.

This change was implemented to increase the number of completed child interviews. Once a child was selected, the child interview could be completed before the adult interview if the sufficiently knowledgeable adult (SKA) was not the sampled adult.[5] This "child-first" protocol is described further in the next section. If the above conditions were not met, children and adolescents were enumerated as part of the adult extended interview as in CHIS cycles before 2005.

2.2 Screening Interview for the Cell Sample

The goals of the screening interview for the cell sample were similar to those of the landline screener: to determine whether the telephone was associated with a household and to identify an eligible adult respondent. One important difference from the landline design is that most cell phones are linked

[3] See *CHIS 2013-2014 Methodology Series: Report 5 – Weighting and Variance Estimation*, Section 3.7.
[4] See *CHIS 2013-2014 Methodology Series: Report 5 – Weighting and Variance Estimation*, Section 3.8.
[5] If an adolescent was also sampled in the screener, an adolescent interview could be completed before the adult interview if the screener respondent could give permission.

with a single individual rather than a household. For that reason, the owner of the sampled phone number was selected with certainty for the adult interview if he/she (1) was 18 years of age or older; (2) was a California resident; and (3) did not share the phone with other adults in the household. If the phone was shared, then the phone number was treated as belonging to a household, and the adult selection rules were the same as for the landline sample.

2.3 Screening Interview for the Northern Imperial County ABS

The Northern Imperial County ABS was composed of addresses rather than telephone numbers. The sample vendor matched telephone numbers to many of the sampled addresses. There were three kinds of screening interviews for this sample: a brief mail questionnaire whose primary purpose was to obtain a telephone number for follow-up; a visit from a County representative whose primary purpose was to obtain a telephone number for follow-up; and a CATI screener essentially the same as that used for the RDD samples. (See Section 6.2 in this report)

2.4 Overall Structure of CHIS 2015-2016 Interviews

Given the number of different instruments and the rules for who could respond to each, one household could potentially have several individuals acting as CATI respondents, including:

- the screener respondent,
- a sampled adult who answered questions in the adult interview,
- an adult who could give permission for the adolescent interview (e.g., "permission-giving adult"),
- a sampled adolescent who answered for themselves, and
- an adult who knew the most about the child's health (e.g., "sufficiently knowledgeable adult" or SKA) who was the respondent for the child extended interview.

If the sampled adult was unable to answer for himself/herself due to illness or impairment, there could also be a proxy respondent who answered questions for the adult.

In practice, one adult usually filled multiple roles in households with adolescents or children. However, the possibility of multiple respondents required rules for ordering survey instruments and various administrative activities (e.g., selecting sampled persons, identifying and contacting respondents) and CATI tools for navigating through the administrative and questionnaire screens. The default sequence of the questionnaire and navigation sections is presented in Figure 2-1. A basic principle of the interview flow is that the interviewer should attempt to complete as many different interviews as possible for which

the household member currently on the telephone is eligible (e.g., child and permission for the adolescent interview). Once that has happened, the system goes to the HHSELECT screen (see Exhibit 2.1). If there are remaining interviews that couldn't be completed by that adult, the interviewer selects the appropriate individual (e.g., the sampled adult, the SKA for the Child Questionnaire or permission-giving adult for the adolescent permission).

As described in Section 2.1, CHIS 2015-2016 allowed sampling of children and adolescents as part of the screening interview for the landline, surname, and ABS samples under certain circumstances. If the screener respondent was the sampled adult's spouse and was also determined to be the SKA, the child interview could be completed immediately or at another time before the adult interview. These cases are referred to as "child-first" cases. The adolescent interview could also be completed before the adult interview in child-first cases.

For cases other than those meeting the child-first criteria, the screening interview resumed in the middle of Section G of the Adult Extended Questionnaire, with the following items:

- Identification of adult respondent's spouse if living in the household;
- Enumeration of adolescents and children in the household; and
- Determining for which adolescents and children the adult respondent and/or spouse is the parent or legal guardian.

This information was used by the CATI program to select one adolescent and one child among those for whom the sampled adult was the parent or legal guardian. Adolescents or children who did not have a parent or legal guardian in the household were not eligible for selection. This exception includes foster children who are legally considered wards of the state, which means that foster parents could not give permission for them to participate in the survey. Households in which there was no one 18 years old or older were also not included in the sample.

Because sampling children and adolescents was part of the adult interview except for child-first cases, the adult interview had to be completed first. Other basic principles of the CATI system flow, once the adult interview is completed, included:

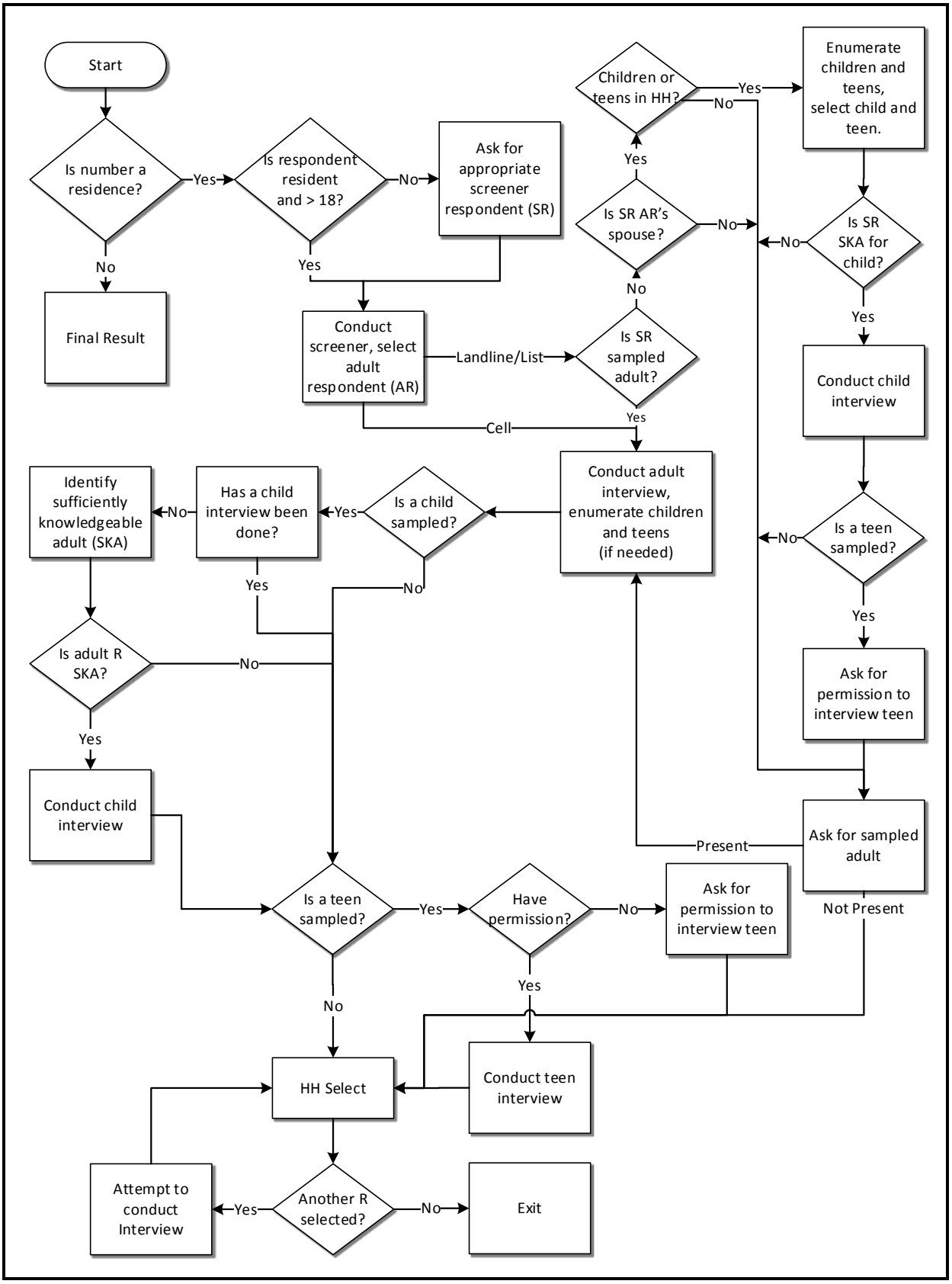
- Attempting to complete as many components as possible with the current respondent before asking for someone else; and
- Attempting the child interview before asking permission for the adolescent interview.

After a cell phone sample adult interview was completed, or after a landline or surname list sample adult interview was completed for non-child-first cases, if an adolescent and/or child was selected the sampled adult was asked:

- To identify the SKA in the household to serve as respondent for the Child Extended Questionnaire; and
- To give permission for the selected adolescent to be interviewed.

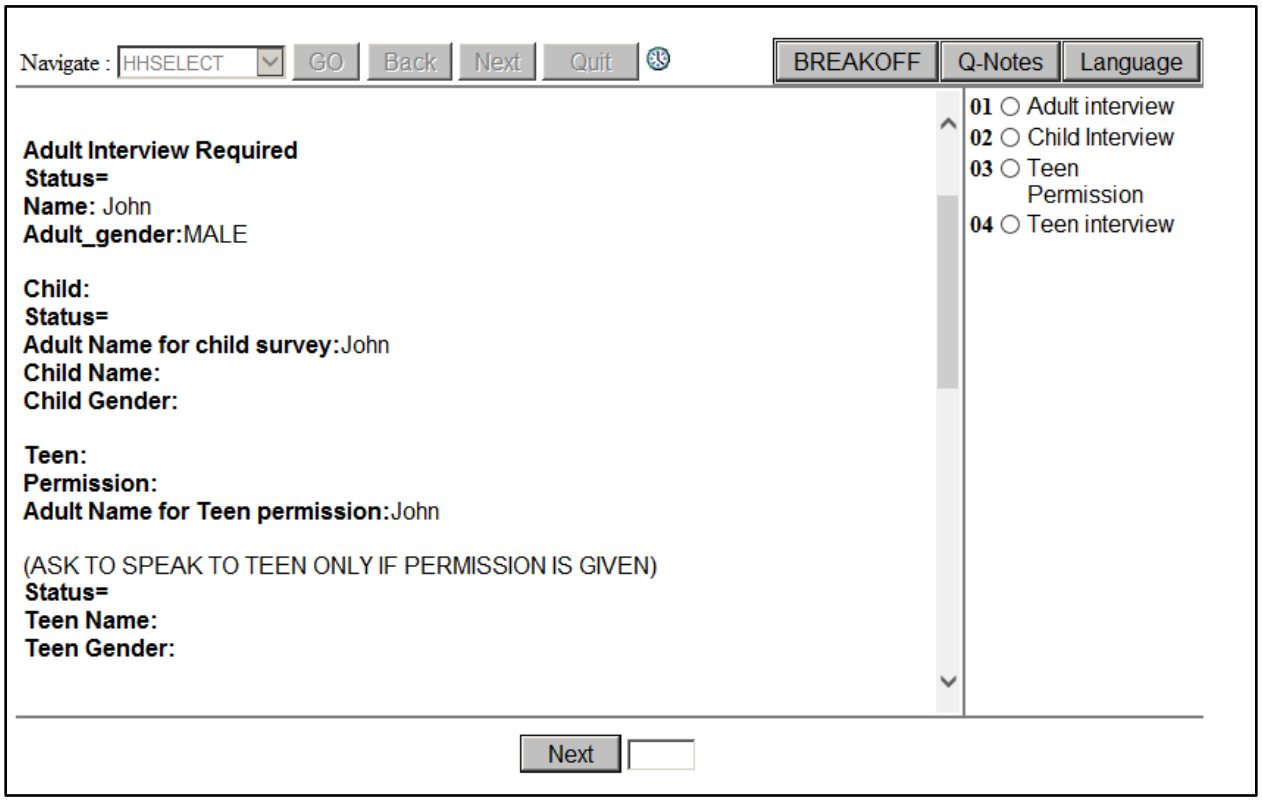
Figure 2-1 shows the interview flow for landline and surname list samples.

Figure 2-1. CHIS 2015-2016 interview flow for landline and surname samples



Once all possible components were attempted with the current respondent, the CATI program displayed a master navigation screen called HHSELECT. A sample HHSELECT screen is presented as Exhibit 2-1. HHSELECT displayed all interviews scheduled for a household, the name of the respondent, and whether the interview had been completed. The interviewer selected one of the outstanding interviews from HHSELECT, and was routed to the appropriate introductory screens for that interview. HHSELECT reappeared after each component was completed, or attempted but not completed. It also appeared when an interviewer first entered a case started by another interviewer.

Exhibit 2-1. CHIS 2015-2016 HHSELECT CATI screen



3. EXTENDED INTERVIEWS

3.1 Questionnaire Development Process

CHIS employs complex instruments comprising both core questions typically repeated across survey cycles and new content reflecting emerging public health issues. The questionnaire content is largely driven by the research needs of UCLA, sponsoring agencies, and a variety of government, academic and other partners. However, the concern about respondent burden (and its effect on response rates) limits the administration time to 30 min for the adult questionnaire, 20 min for the adolescent questionnaire, and 15 minutes for the child questionnaire.

In late 2014, UCLA began collaboration with RTI International for a thorough review of the existing instruments. Expecting 80 percent of the 2015-2016 questionnaire content to have been fielded in previous CHIS rounds, the goal of this review was to examine the current content from multiple perspectives, including methodological, statistical, and programming, and advise on new content question sequencing, transition wording, scale formats and other interviewer administration features.

In addition to a thorough review by questionnaire design experts, the new content review included an application of RTI's Questionnaire Appraisal System (QAS). The goal was to evaluate new CHIS questions for potential problems before they were incorporated in the interview. QAS allows for a systematic appraisal of the question characteristics that may lead to difficulties during administration. For each question, we examined potential issues related to question reading, instructions, overall clarity, assumptions that the question makes, burden on respondent's memory, and characteristics related to social desirability and sensitivity. For each question with identified problems, we provided recommendations how to address the issue. The final questionnaire content and length were determined after several iterations.

To reduce programming effort and facilitate pooling data across survey years, existing variable names were retained in the CATI program. New variables based on new questions were assigned the next available number in the respective section. Variable names for items in previous cycles not included in the 2015-2016 survey were not re-used. The questionnaires are available on the CHIS website (http://healthpolicy.ucla.edu/chis/design/Pages/questionnairesEnglish.aspx) and include: (1) a *question* name describing the questionnaire type (adult, adolescent, child), year, questionnaire section, and a sequential number within the section; and (2) a *variable* name.

Two main changes took place between 2015 and 2016 – the screener instrument was streamlined at the end of 2015 to exclude full household enumeration for all cases; and two new subsections were added to the adult instrument in 2016 – one on tobacco use and cessation, and one on dental health.

3.2 Questionnaire Content

The 2015-2016 adult extended questionnaire was divided into 15 sections:

A. **Demographics, Part I** – Age, gender, race, ethnicity, marital status.

B. **Health Conditions** – General health, asthma, diabetes, pre-diabetes/borderline diabetes, gestational diabetes, hypertension, heart disease, flu shot.

C. **Health Behaviors** – Walking for transportation and leisure, dietary intake, fast food, access to fresh and affordable foods, cigarette and alcohol use/abuse.

D. **General Health, Disability, and Sexual Health** – Height and weight, disability, sexual partners and sexual orientation, gender orientation, registered domestic partners, HIV testing.

E. **Women's Health** – Pregnancy status and mammography.

F. **Mental Health** – K6 mental health assessment, Sheehan scale, access and utilization, stigma.

G. **Demographics, Part II** – Self and parent's country of birth, languages spoken at home, additional language use, English proficiency, citizenship and immigration, household composition, paid child care, education, veteran status, employment of self and spouse.

H. **Health Care and Health Insurance –** Usual source of care, emergency room visits, current coverage by public or private plans, coverage of prescription drugs, coverage over past 12 months, spouse's coverage, high deductible health plans, reasons for lack of coverage, hospitalizations, partial scope Medi-Cal, use of Covered California.

I. **Adolescent and Child Health Insurance** – For sampled adolescent and child, current coverage by public or private plans, source of coverage, managed care plan characteristics, high deductible plans, coverage in past 12 months, reasons for lack of coverage, use of Covered California; country of birth, citizenship and immigration.

J. **Health Care Utilization and Access** – Visits to medical doctor, personal doctor, patient-centered care, timely appointments, tele-medical care, care coordination, communication problems with doctor, change of usual source of care, delays in care, internet use, family planning, dental health.

DM. **Discrimination**

K. **Employment, Income, Poverty Status, Food Security** – Hours worked, income last month, household annual income, number of persons supported, poverty level test, availability of food in household and hunger.

L. **Public Program Participation –** Participation in public social programs, assets, alimony and child support, worker's compensation, Social Security, pensions, reasons for non-enrollment in Medi-Cal.

M. **Housing and Social Cohesion** – Type of housing and tenure, social cohesion and safety, civic engagement, the California Endowment: Building Healthy Communities.

S. **Suicide Ideation** – History of suicide attempts, thoughts of suicide.

N. **Final Demographics** – County of residence, address, use of cell phone, willingness to participate in follow-up study.

The 2015-2016 child extended questionnaire was comprised of nine sections:

A. **Demographics and Health Status** – Gender, age, height and weight, breastfeeding, school attendance, general health, asthma, and other conditions.

B. **Dental Health** – Most recent visit to a dentist, main reason for not visiting a dentist.

C. **Diet, Physical Activity, and Park Use –** Dietary intake, fast food, food environment, commute from school to home, name of school, physical activity, sedentary time, use of parks.

D. **Access to and Use of Health Care Services** – Usual source of care, emergency room use, visits to medical doctor, personal doctor, patient-centered care, developmental screening, timely appointments, care coordination, communication problems with doctor, delays in care, difficulty finding a doctor, flu shot, and internet use.

E. **Public Program Participation** – Participation in TANF/CalWORKs, Food Stamps, and WIC.

F. **Parental Involvement with child –** First 5 California: "Talk, Read, Sing" program.

G. **Child Care and Social Cohesion** – Types of child care used, difficulty finding care, social cohesion and safety.

K. **Child First –** Sampled adult's education, employment status, and age; health insurance coverage for the sampled adult, spouse, sampled child, and sampled adolescent; household income; type of housing and tenure; and address information

H. **Demographics, Part II** – Race and ethnicity, country of birth, citizenship/immigration status of child and parents, languages spoken at home, and level of education of respondent and primary caretaker of child.

For child-first cases, the following topics from the adult questionnaire were administered to the SKA as part of Section K of the child questionnaire so that these children would have essential household-level and insurance information for analysis and weighting in the event an adult interview was not completed.

Finally, the 2015-2016 adolescent extended questionnaire comprised 13 sections, presented in the order they appear in the interview:

A. **Demographics** – Age, gender, school attendance, name of school, school instability, organizational involvement.

N. **Personal and School Safety –** Self-reported school safety assessment and interpersonal violence

B. **Health Status and Health Conditions** – Self-reported health status, height and weight, missed school days, asthma, flu shot.

C. **Diet, Nutrition, and Food Environment** – Dietary intake, fast food, food environment, water consumption.

D. **Physical Activity** – Physical activity, physical education in school, commute from school to home, park or playground use and safety, social cohesion, sedentary time.

E. **Cigarette and Alcohol Use –** Cigarette use, e-cigarette use, and alcohol use/abuse

F. **Mental Health** – K6 mental health assessment, emotional and psychological counseling.

G. Sexual Behaviors – Sexual activity.

H. **Health Care Utilization and Access** – Usual source of care, emergency room visits, most recent doctor visit, recall of provider advice, personal doctor, patient-centered care, timely appointments, care coordination, and delays in care.

J. **Demographics, Part II** – Race and ethnicity, country of birth, citizenship and immigration, languages spoken at home.

S. **Suicide Ideation and Attempts.**

L. **Civic Engagement and Resiliency –** Volunteer work and support from adults

M. **Closing –** Willingness to participate in follow-up study and closing.

3.3 Translation of Questionnaires

As in previous cycles, CHIS 2015-2016 instruments were administered in English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, Korean, and Tagalog. Translation of the CHIS 2015-2016 questionnaires began in April 2015, after all instruments were finalized. The translation process for each language included a thorough review of existing translations for items used in CHIS 2013-2014, and original translation of new items included in CHIS 2015-2016. Our process involved two translators who conducted the initial review and original translation independently of each other. Their work was reviewed by an adjudicator, who was responsible for reconciling differences and making final recommendations to UCLA. Once received by UCLA, the initial translations for each language were reviewed by an ATA-certified translator or CA court-certified interpreter and recommended changes were discussed during a phone meeting between the certified translator and the respective language team.

3.3.1 Letter Translations

The translation of contact materials and consent scripts followed the same procedure used for translations of the survey instruments. The majority of the CHIS 2015-2016 contact materials remained unchanged from the CHIS 2013-2014 translation, but several improvements were recommended in each language.

The multi-language advance letter was printed in the same layout as in CHIS 2013-2014—an 11” x 17” folded document with English on the front, Spanish on the back, and Chinese, Korean, Tagalog, and Vietnamese printed on the inside two pages

3.4 Pretest and Pilot Test

The formal pilot test was conducted through RTI's call center from April 30, 2015 to May 6, 2015. RTI trained experienced interviewers – working on other RTI surveys – on CHIS protocols and procedures. The pilot test was intended as a full dress rehearsal of the main study, except that only an English-language instrument was used, and no attempt was made to convert refusals or follow up with language problem cases. Table 3-1 presents the results of the pilot test, and compares cooperation rates from pilot tests back to 2003. Generally, the screener, adult, child interview, adolescent permission, and adolescent rates continued the overall downward trend over time.

Table 3-1. Number of completed interviews and refusals and cooperation rates in the CHIS 2015-2016, 2013-2014, 2011-2012, 2009, 2007, 2005, 2003 pilot cooperation rates

Instrument	Completed Interviews	Refusals	2015-2016[a]	2013-2014	2011-2012	2009	2007	2005	2003
Screener	80,378	101,399	41%	22%	28%	29%	31%	39%	43%
Adult	42,089	4,763	82%	56%	64%	68%	71%	70%	79%
Child	4,293	661	77%	100%	93%	90%	91%	95%	96%
Permission	2,358	N/A	N/A	67%	94%	71%	74%[b]	69%	N/A
Adolescent	1,594	N/A	N/A	100%	86%	85%	82%	92%	78%

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

[a] 2015-2016 cooperation rates are only available for the entire 2015 data collection period

[b] Rate reported in 2007 was incorrect; the rate reported here is correct

Tables 3-2a through 3-2c present interview duration by section for the adult, child, and adolescent questionnaires, respectively throughout Q3 of 2015. The adult extended interview averaged just under 40 minutes to administer, longer than the target of 30 minutes. The child interview averaged just over 14 minutes, and the adolescent interview about 19 minutes, which was also longer than the target. The screening interview and permission to interview adolescents both took about 3 minutes, on average.

Table 3-2a. CHIS 2015-2016 Quarter 3 adult extended interview timing data, by section

Module	Number of Interviews	Mean	0 Percentile	10 Percentile	25 Percentile	50 Percentile	75 Percentile	90 Percentile	100 Percentile
Total	**7,092**	**37.5**	**0.0**	**20.0**	**30.2**	**37.0**	**44.9**	**53.8**	**159.6**
Section A – Demographic Information	6,692	3.7	0.0	2.4	2.8	3.4	4.3	5.4	65.0
Section B – Health Conditions	7,053	2.2	0.6	0.9	1.0	1.3	2.7	4.6	29.8
Section C – Health Behaviors	6,954	4.7	1.0	3.0	3.5	4.3	5.3	6.8	33.6
Section D – General Health, Disability, and Sexual Health	6,906	2.7	0.8	1.6	2.0	2.4	3.1	4.0	15.1
Section E – Women's Health	3,948	0.6	0.0	0.1	0.2	0.5	0.8	1.1	7.2
Section F – Mental Health	6,708	4.7	0.0	2.9	3.3	4.1	5.3	7.2	28.5
Section G – Demographic Information, Part II	6,678	3.5	0.9	1.8	2.3	3.1	4.2	5.5	44.4
Section H – Health Insurance	6,494	5.4	1.0	3.1	3.8	4.8	6.3	8.3	32.1
Section I – Child and Adolescent Health Insurance	1,426	1.9	0.0	0.0	0.7	1.3	2.6	4.3	24.5
Section J – Health Care Utilization and Access	6,400	4.9	1.0	3.2	3.7	4.5	5.6	7.0	32.8
Section DM – Discrimination	6,420	1.1	0.0	0.4	0.5	0.6	1.4	2.0	51.4
Section K – Employment, Income, Poverty Status, Food Security	6,363	2.8	0.2	0.7	1.6	2.5	3.6	4.8	21.0
Section L - Public Program Participation	4,078	1.8	0.0	0.9	1.2	1.6	2.2	2.9	9.6
Section M – Housing and Social Cohesion	6,331	2.7	0.6	1.7	2.0	2.5	3.1	3.8	56.0
Section S – Suicide Ideation and Attempts	5,770	0.4	0.0	0.2	0.2	0.2	0.3	0.9	9.0
Section N –Demographic Information Part III and Closing	6,324	2.1	0.6	1.2	1.5	1.9	2.4	3.1	32.1

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

Table 3-2b. CHIS 2015-2016 Quarter 3 child extended interview timing data, by section

Module	Number of Interviews	Mean	0 Percentile	10 Percentile	25 Percentile	50 Percentile	75 Percentile	90 Percentile	100 Percentile
Total	**663**	**19.7**	**3.2**	**13.2**	**15.7**	**18.3**	**21.5**	**25.9**	**222.1**
Section A – Demographics Part I, Health Conditions	663	2.8	1.2	1.5	1.8	2.3	3.3	4.8	14.8
Section B – Dental Health	675	1.8	0.1	0.9	1.1	1.4	1.8	2.4	66.8
Section C – Diet, Physical Activity, Park Use	592	5.4	0.0	2.5	3.4	5.1	6.5	8.1	73.7
Section D – Health Care Access and Utilization	657	6.5	2.3	4.5	5.2	6.0	7.0	8.1	79.6
Section E – Public Programs	451	0.5	0.0	0.2	0.3	0.4	0.5	0.7	21.2
Section F – Parental Involvement	397	1.3	0.0	0.6	1.0	1.4	1.7	2.0	3.5
Section G – Child Care and Social Cohesion	657	1.3	0.3	0.3	0.4	1.1	1.8	2.7	6.0
Section H – Demographics, Part II	658	1.8	0.6	0.8	1.0	1.6	2.3	2.9	8.4
Section K – Child First	54	14.2	8.4	9.5	11.1	13.3	14.5	19.5	36.3

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

Table 3-2c. CHIS 2015-2016 Quarter 3 adolescent extended interview timing data, by section

Module	Number of Interviews	Mean	0 Percentile	10 Percentile	25 Percentile	50 Percentile	75 Percentile	90 Percentile	100 Percentile
Total	**176**	**23.2**	**9.7**	**16.8**	**19.4**	**22.5**	**26.8**	**30.9**	**50.4**
Section A – Demographics Part I and civic engagement	178	3.4	0.5	2.2	2.6	3.1	3.8	4.7	13.0
Section B – Health Status and Health Conditions	178	1.6	0.6	0.8	0.9	1.2	1.9	2.8	8.8
Section C - Diet, Nutrition, and Food Environment	177	3.1	1.8	2.3	2.5	2.9	3.5	4.0	8.1
Section D - Physical Activity	178	4.3	2.5	3.2	3.6	4.0	4.8	5.7	9.7
Section E - Cigarette, Alcohol and Drug Use	177	0.6	0.3	0.4	0.4	0.5	0.7	1.0	3.5
Section F – Mental Health	177	2.3	1.2	1.6	1.8	2.1	2.7	3.4	5.2
Section G – Sexual Behaviors	173	0.2	0.2	0.2	0.2	0.2	0.3	0.3	1.2
Section H – Health Care Utilization and Access	176	2.9	1.1	1.8	2.3	2.8	3.3	4.2	9.7
Section J - Demographic Information Part II	148	1.4	0.5	0.7	0.9	1.3	1.7	2.4	4.4
Section K – Suicide Ideation and Attempts	148	0.5	0.1	0.2	0.2	0.2	0.3	1.6	3.6
Section L – Civic Engagement and Resiliency	147	3.5	0.1	2.5	3.0	3.4	4.0	4.7	6.6
Section M – Closing	148	0.4	0.2	0.2	0.2	0.3	0.3	0.8	4.5

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

Staff from UCLA, Public Health Institute (PHI), and RTI observed the pilot test. Results of the observations and debriefing helped inform decisions about cutting and modifying questions between the pilot test and the main study.

3.5 Changes in the Questionnaire during Data Collection

To improve the quality of the 2015-2016 CHIS questionnaire, several steps were taken to review questionnaire content throughout data collection:

- RTI, UCLA, and PHI staff monitored interviews
- Interviewer debriefing sessions were conducted
- Interviewer quality circle meetings were held
- RTI data collection staff reviewed notes entered by interviewers

Throughout this process, several issues with question items arose, some of which suggested that a change in the question wording or answer categories would be beneficial. Some of these issues led to actual changes in the CATI instrument during the field period. Other changes included adding and deleting items as funding priorities changed during the cycle. Appendix A presents all the changes to the CATI instruments after data collection started.

4. DATA COLLECTOR RECRUITING AND TRAINING

RTI conducted CHIS 2015-2016 at its Research Operations Center (ROC) in Raleigh, North Carolina. All data collectors received the same training and supervision.

4.1 Pretest and Pilot Test Recruiting and Training

RTI selected experienced data collectors from the ROC interviewing staff for the pretest and the pilot. For the pretest, data collectors were trained informally on paper and pencil versions of the CHIS 2015-2016 draft questionnaire. Training was conducted by members of the CHIS team. The training program was developed and implemented by the RTI data collection staff and ROC management staff, and anticipated the training for the main study. CATI was used for administration of the pilot interviews.

4.2 Recruiting and Training for English-language Telephone Interviewing

The field period for CHIS 2015-2016 began in May 2015, and ran for 20 months ending on December 22, 2016. RTI's data collection plan was to recruit and train many data collectors at the beginning of the field period so that peak production would be reached within the first two weeks of the study. Bilingual data collectors were trained along with English-only data collectors to conduct interviews in English for a few weeks. Once familiar with the survey, they were trained in and used the other-language instrument.

4.2.1 Recruiting Telephone Data Collectors

The CHIS 2015-2016 interviewing force was a combination of RTI-experienced and newly-hired data collectors. After all training sessions were held, 494 RTI data collectors had successfully completed the training. Of those who completed training, some had previous interviewing experience at RTI and others were new hires.

RTI recruits new data collectors by posting notices on job-oriented websites. Applicants use an online application process, and selected applicants are screened via a phone interview, followed by an in-person interview for successful candidates. Selected applicants are invited to complete general interviewer and project-specific training.

To maintain a local presence during data collection, RTI used a contractor based in California to conduct Asian-language interviews for the first several months of data collection. The contractor used similar training methods to those used by RTI.

4.2.3 Data Collector Training

Project-specific training for CHIS 2015-2016 included CATI system training on the interview instrument led by a trainer and dyad role plays. Trainings began April 29, 2015. Additional trainings were conducted as needed throughout the data collection period.

Development of the training started with an outline of key concepts to be covered. The agenda and the development of materials followed from this starting point. The appearance of all materials was standardized and presentations were scripted so that all trainers could follow the format and deliver a consistent training program across groups. The protocol for CHIS 2015-2016 was newly created.

- Training Program Agenda. The agenda identified the format of the sessions (self-tutorial materials, instructor-led trainings and dyad role plays), the topics to be covered, and the length of time the session was scheduled to take (see Exhibit 4-1).
- Trainer's Manual. This manual contained all material presented by the lead trainer. It included interview interactive scripts, contact procedures and refusal avoidance suggestions.
- Dyad Role-Play Scripts. Role plays were produced that focused on contact procedures and provided practice on the administration of the adult, child and adolescent extended interviews.
- A Training Manual. The training manual included sections on the following topics:
  - Background and purpose of the study
  - Study and sample design
  - Respondent selection
  - Data collection schedule
  - Project staff
  - Data collector responsibilities and expectations
  - Respondent rights and confidentiality
  - General contacting procedures
  - Sensitivity training
  - Refusal avoidance and conversion
  - General interviewing techniques
  - Frequently asked questions
  - Pronunciation guide

In addition to the materials found in the manual, data collectors received separate copies of the FAQs, pronunciation guide and a quick reference guide to hang at their stations. The quick reference guide was a half-page document that provided important study information (e.g., the study hotline number, the principal investigator's name and contact information and the most asked FAQs).

iLearning session. iLearning is a self-paced training consisting of general interviewer training for new interviewers and project-specific training for new and RTI-experienced interviewers. The general interviewer training consisted of information on interviewing techniques, such as gaining cooperation and averting refusals. The project-specific training started with presentation of background information, followed by information on respondent selection. Other materials in this training included the answers to common respondent questions, questionnaire topics, gaining cooperation for child and adolescent interviews, cultural sensitivity awareness, refusal avoidance techniques, a visual pronunciation guide, and instructions on how to create a conference call with the suicide hotline for distressed respondents. This session took place at RTI's ROC so that staff could walk the room and answer questions.

In-person training sessions. After completion of the iLearning session, data collectors attended three nights of four-hour in-person training sessions. On the fourth night, data collectors took written and oral certification tests. Held at RTI's ROC, these sessions were conducted by project and ROC staff. These sessions were limited to no more than 32 trainees.

The in-person training team for each group consisted of a lead trainer and two supervisors. The lead trainer was responsible for the overall presentation and the pace of training. The supervisors responsible for taking attendance, troubleshooting, and trainee evaluation. The agenda for the in-person sessions is presented in Exhibit 4-1.

Exhibit 4-1. Agenda for CHIS 2015-2016 English-Language In-Person Data Collector Training

Night	Topic
1	▪ Welcome, introductions ▪ System login ▪ Respondent selection ▪ Round-robin mock adult survey, including incentive structure ▪ Switching between interviews on the HHSelect screen ▪ Round-robin mock child survey ▪ Round-robin mock adolescent survey
2	▪ Q&A about CHIS background/iLearning ▪ Confidentiality form discussion and completion ▪ FAQ review ▪ Incentive review ▪ Round-robin mock adult survey ▪ Round-robin mock child survey ▪ Child-first interviews and different adult respondents ▪ Paired mock adult interview
3	▪ Q&A about CHIS background/iLearning ▪ Distress, emergency and suicide protocols and breakoffs ▪ Proxy interviews ▪ Pronunciation practice ▪ Round-robin mock adolescent survey ▪ Paired practice mock child and adolescent interviews
4	▪ Q&A about CHIS background/iLearning ▪ Written test ▪ Oral certification with ROC staff

In-person training began with an introduction to the CATI program, then immediately moved into a trainer-led round-robin adult interview. Each data collector read 3 questions, the trainer provided a response and all data collectors entered the response so that they could follow along on their screen. This continued through child and adolescent interviews. The trainer reviewed confidentiality, frequently asked questions, distress protocols, and pronunciation of potentially tricky terms. Round-robin mock interviews with the trainer and supervisors. During days two and three of training, the trainer and supervisors provided some odd responses and asked difficult questions to simulate what a real interview would be like.

Data collectors paired off for role play interviews, taking turns as data collector and respondent, with the latter using a prepared script. Data collectors reversed roles after the end of each role play. Each data collector participated in several dyads. The training team members monitored the role plays and evaluated data collector performance.

All data collectors trained on how to handle proxy interviews. For cases where a sampled adult was unable to be interviewed for physical or mental health reasons, the data collector attempted to identify an appropriate proxy respondent. The proxy had to be an adult member of the household who knew about the sampled adult's health and health care. The CATI questionnaire was modified to accommodate proxy interviews. Training comprised discussion of how to contact households identified as candidates for proxy interviews, determining whether a proxy would be appropriate, and identifying a respondent, review of the changes to the questionnaire for proxy interviews, and several practice interviews in CATI.

On the fourth day of training, data collectors took written and oral tests to determine if they were qualified to conduct interviews. The written test covered topics such as the FAQs and the distress protocols. The oral test included pronunciation and an interview segment, in which the data collector asked survey questions of a training team member, who asked questions and provided non-conforming responses to simulate a real interview situation. If the data collector passed the test, he or she was authorized to begin work on the study. If the data collector did not pass, he or she was given another chance to take the part(s) they did not previously pass.

Table 4-1 shows the timing of project-specific data collector training sessions for CHIS 2015-2016. The first trainings began April 29, 2015 and were held as needed throughout the life of the project.

4.2.4 Follow-up and Specialized Data Collector Training

After data collectors started live interviewing, they received supplemental training on specific questionnaire issues that arose after training, and additional training in gaining respondent cooperation. These trainings occurred through in-person sessions. Also, data collectors who demonstrated relevant skills were selected to receive additional training in handling special cases.

Table 4-1. CHIS 2015-2016 Data Collector Training Dates and Number of Data Collectors Trained

Training Dates	Data Collectors Completing Training
4/29/2015	32
5/26/2015	29
6/1/2015	31
6/8/2015	29
6/22/2015	23
7/6/2015	57
8/12/2015	20
8/13/2015*	7
8/20/2015	26
8/22/2015	19
8/27/2015	26
9/3/2015	29
9/17/2015*	2
9/23/2015	3
10/13/2015	27
10/18/2015*	3
10/26/2015	29
10/28/2015	3
11/3/2015	12
11/10/2015	20
11/18/2015	24
11/22/2015*	4
11/24/2015	30
11/30/2015	2
3/31/2016	7

*Contractor-conducted trainings

Refusal Avoidance and Conversion. Shortly after the onset of CHIS production, RTI scheduled abbreviated small group conference call training sessions to improve data collector skills in answering respondent questions and objections with immediate and informative responses. Role playing with typical scenarios was practiced. Ideas were shared regarding what was deemed to be successful more often. The purpose of this training included an attempt to improve the screener cooperation rate. A subset of these

data collectors who were particularly adept with gaining cooperation were subsequently trained and assigned to work as converters for screener and extended level refusals. Refusal conversion focuses on attempts to persuade respondents who have previously refused to participate. The refusal conversion training sessions lasted between one to two hours and covered specific conversion strategies. They explored common reasons for refusals, reasons specific to CHIS 2015-2016, and the importance of addressing respondent concerns with appropriate responses.

Training for surname list sample interviewing. The language-appropriate bilingual data collectors screened the Korean, Vietnamese, and Japanese surname samples. Refusal cases from the surname sample were re-called for a conversion attempt by the bilingual data collectors who had the capability to move the cases to another language if needed. All interviewers were informed that the sample would be fielded and that the eligibility question would be added to the screener.

4.3 Training for Spanish-language Interviewing

All Spanish bilingual data collectors were trained according to the protocol described in Section 4.2, in sessions that included both English-only and bilingual data collectors. After completing the English-language CHIS-specific training, Spanish bilingual data collectors initially worked in English. Once the Spanish-language instrument was ready, bilingual data collectors were given practice using it before proceeding to live interviewing in Spanish. The training was monitored by Spanish-speaking supervisors. Since the English and Spanish instruments were so similar, there were few substantive or operational issues to work through during training.

4.4 Training for Asian-language Interviewing

Bilingual and multilingual staff conducted CHIS interviews in Vietnamese, Mandarin, Cantonese, Tagalog and Korean. The training for Asian-language data collectors was conducted in multiple stages. Data collectors were first trained to administer English interviews. All trainees were hired on the premise that some of their interviewing time would be spent conducting English interviews. Asian-language-speaking households were identified in limited quantities. To make their interviewing time efficient, data collectors had to demonstrate an ability to conduct English interviews. Additionally, it was not uncommon to conduct the adult interview in an Asian language followed by an adolescent interview where the preferred language was English. Chinese and Korean characters, and Vietnamese accented text, were displayed in CATI in the Asian languages. Data collector instructions and help text remained in English.

Vietnamese, Mandarin, Cantonese, and Korean Training Assistance. Vietnamese, Mandarin, Cantonese and Korean speaking staff were drawn from various areas of RTI to assist in the creation of training materials. Data collectors were provided with translated copies of the advance letter and the Commonly Asked Questions and Answers. Vietnamese, Cantonese, Mandarin and Korean dyads were developed like the English dyads but with the Asian text shown for the respondent to follow on the screenshots. Asian staff members either served as respondents for Asian speaking data collectors or monitored the Asian dyads to assess readiness for data collection.

Dyad Role Plays. Once the instrument had been thoroughly reviewed, the trainees were given the opportunity to practice using role plays. The trainee acting the part of the data collector would use the CATI instrument to administer the CHIS questionnaire in Vietnamese, Mandarin, Cantonese or Korean. The trainee acting the part of the respondent would respond to the data collector's questions. An adolescent role play interview to be conducted in English was included in the set as an attempt to simulate a common real-life scenario and provided additional English practice.

At any point in the interviewing process, data collectors had the capability to change the displayed text on a screen from English to an Asian language or vice versa. Additionally, data collectors could move a case to any of the other language work classes using a control key sequence if it was appropriate to have an interview done by a bilingual data collector speaking another language. Practice on this capability was included in the language-specific trainings.

Live Interviewing. After training and practice, the data collectors began interviewing in Vietnamese, Mandarin, Cantonese, Tagalog and Korean. Having a CATI instrument with these language translations, including diacritical marks, provided a streamlined and greatly simplified interviewing process. Since all cases were contained in the CATI scheduler, case control was easily managed with cases designated for a specific language only being delivered to data collectors trained in interviewing in that Asian language.

Bilingual Monitoring. Asian speaking RTI staff members were used to measure interviewing quality, and to provide feedback to individual data collectors. Specific monitoring forms and guidelines describing what to look and listen for were utilized. After a data collector had completed a monitoring session, the staff member would provide a review of the monitoring sheets completed. The monitoring information would further be used to follow up with the data collector who had been monitored and review strengths and weaknesses exhibited.

4.5 Data Collector Performance

Data collector performance was evaluated through examination of performance reports and monitoring of live and recorded interviews for the skills needed for effective interviewing. Seven percent of interviewing time was monitored throughout the data collection period. Supervisors monitored data collectors for a minimum of 15 minutes at a time. The monitoring was followed by a one-on-one coaching session to review techniques that were or were not working and to either reinforce exemplified skills or provide feedback for improving interviewing style. Data collectors were monitored by ROC supervisors and training staff to determine if the following skills were demonstrated: use of a conversational style; reading fluency; ability to answer respondent questions quickly, accurately, and completely; ability to gain respondent cooperation; reading screens verbatim; and using neutral probes. Data collectors whose performance fell below acceptable levels attended additional coaching sessions with an emphasis on gaining respondent cooperation and answering respondent questions.

The following techniques were used to identify and reinforce behaviors effective in gaining respondent cooperation:

- The Project Coordinator published a weekly priority list for team leaders and mentors. It included lists of data collectors by name who were targeted for heavy monitoring because of recent change in status such as cooperation rates lower than average; evaluation for specialized tasks and refusal conversion. The issues that were to be focused on during monitoring were also provided, such as the data collector's ability to answer respondent questions/concerns quickly and accurately, and read all screens (especially the screener introduction) at the appropriate pace and tempo for the respondent; read screens verbatim; and probe neutrally and appropriately. For refusal data collectors, the emphasis was on the ability to engage respondents and use appropriate techniques.
- Supervisors provided feedback to data collectors on an individual basis after monitoring sheets had been completed. This included feedback on positive aspects of the interview and suggestions for improving performance.
- Project Coordinators sent reports regarding data collector performance to the operations manager. Reports identified strengths and weaknesses as reported in monitoring sheets. They also provided input on data collectors recommended for special tasks.
- Project coordinator reports were used in combination with cooperation rates to identify data collectors for refusal conversion and other specialized tasks.

Staff from UCLA also monitored interviews in CHIS 2015-2016. While these monitoring sessions were primarily focused on assessment of the instruments, occasionally interviewer performance issues would arise. The latter were handled by ROC supervisors who monitored along with the UCLA staff as described above. Some issues with the instruments could not be solved by changes to the CATI program; in such situations, data collectors were advised of the issues and how to deal with them as described in Chapter 7.

5. SCHEDULING AND RELEASE OF WORK

This chapter describes activities related to initiating data collection, including preparation and release of sampled telephone numbers, how the sample was organized in the CATI system, mailing advance letters, and handling inbound calls to RTI's CHIS toll-free number. Before releasing sampled telephone numbers for interviewing, RTI arranged for purging out-of-scope telephone numbers for the landline and surname samples.

Data collection for the statewide landline and cell samples began May 21, 2015, and ended December 22, 2016. The Korean, Vietnamese, and Japanese list samples were called during quarter 3 in 2015 and during quarters 2 and 3 in 2016. The mail screener for the Northern Imperial County ABS started October 17, 2016. Telephone calls to ABS sample cases began October 18, 2016 and concluded December 22, 2016.

5.1 Sample Preparation

Table 5-1 shows the number of cases that were sampled, purged (landline), ported from landline (cell) and the final sample size.

Table 5-1. CHIS 2015-2016 Sizes for Sample Numbers, Purged Numbers, Ported Numbers, and Final Sample

Landline		Cell		Combined	
Sampled	981,094	Sampled	433,895		
Purged	462,049 (47.1%)	Ported Landline	11,753 (2.7%)		
Final Sample	519,045	Final Sample	445,648	Final Sample	964,693

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

5.1.1 Landline Sample

The landline sample for CHIS 2015-2016 was selected and released to CATI in much the same way as in previous CHIS cycles. *CHIS 2015-2016 Methodology Series: Report 1 – Sample Design* describes the selection process in detail; it is summarized here to demonstrate how the sample was fielded.

Table 5-2 shows the number and proportion of sampled telephone numbers in each landline RDD stratum and the surname supplemental samples that were excluded because they were identified as nonworking or business numbers. See *CHIS 2015-2016 Methodology Series: Report 1 – Sample Design* for more details on these procedures.

A total of 981,094 telephone numbers was selected for the landline sample. Overall, 47.1 percent of sampled numbers were purged as non-residential/non-working. The proportion of landline numbers purged as non-residential/non-working ranged from a low of 29.5 percent in San Benito County strata to a high of 62.2 percent in Yuba County.

An advance letter signed by the CHIS Principal Investigator was sent for all sampled landline and list sample telephone numbers for which an address was available from reverse directory services. The advance letter (shown in Appendix B in English only) used for the RDD samples was printed on CHIS letterhead in English, Spanish, Chinese, Korean, Tagalog and Vietnamese. For the Northern Imperial ABS, this advance letter in English and Spanish was sent to households with matched telephone numbers; a somewhat different letter was included with the mail screener for non-matched addresses. A different letter, also signed by the CHIS Principal Investigator, was sent after initial refusals for the screening interview (for cases designated as "conversion"), adult interview, or permission to interview a selected adolescent, if an address had been obtained for the sampled number. Versions of this letter were printed in all languages.

5.1.2 Supplemental List Samples

Supplemental samples were fielded for CHIS 2015-2016 to increase the yield of interviews with persons of Korean, Vietnamese, and Japanese heritage. These samples were based on surname lists and published telephone numbers. Due to non-residential/non-working numbers, 20.8 percent of the Korean, 21.8 percent of the Vietnamese, and 18.0 percent of the Japanese samples were purged.

5.1.3 Cell Sample

CHIS 2015-2016 included a sample of telephone numbers assigned to cellular service, as was done in previous CHIS cycles. The sample was selected from banks of numbers allocated to cellular service, and included numbers from the landline sample that were identified as belonging to cell phones. The cell sample included 433,895 numbers from cellular banks and 11,753 identified from the landline, for a total of 445,648 numbers. Purging for non-residential/non-working numbers using the sample vendor's methods is not permitted.

Table 5-2. CHIS 2015-2016 landline cases sampled, purged and released by strata

Strata	Sampled Landline Case			Purged Landline Cases				Released Landline Cases		
	2015-2016	2015	2016	2015-2016	2015	2016	% Purged by Stratum	2015-2016	2015	2016
1 - Los Angeles	213,008	112,674	100,334	101,429	54,956	46,473	47.6	111,579	57,718	53,861
2 - San Diego	102,682	37,882	64,800	51,416	18,222	33,194	50.1	51,266	19,660	31,606
3 - Orange	68,154	39,150	29,004	29,886	17,949	11,937	43.9	38,268	21,201	17,067
4 - Santa Clara	44,775	24,773	20,002	19,093	11,093	8,000	42.6	25,682	13,680	12,002
5 - San Bernardino	30,342	18,112	12,230	11,565	7,011	4,554	38.1	18,777	11,101	7,676
6 - Riverside	44,750	24,153	20,597	17,424	9,176	8,248	38.9	27,326	14,977	12,349
7 - Alameda	31,163	19,729	11,434	15,775	10,421	5,354	50.6	15,388	9,308	6,080
8 - Sacramento	27,216	17,195	10,021	12,548	8,011	4,537	46.1	14,668	9,184	5,484
9 - Contra Costa	21,030	10,229	10,801	10,611	4,980	5,631	50.5	10,419	5,249	5,170
10 - Fresno	20,536	12,501	8,035	9,687	5,858	3,829	47.2	10,849	6,643	4,206
11 - San Francisco	22,519	11,689	10,830	12,021	6,780	5,241	53.4	10,498	4,909	5,589
12 - Ventura	19,380	8,182	11,198	7,748	3,382	4,366	40.0	11,632	4,800	6,832
13 - San Mateo	19,335	8,290	11,045	9,272	4,047	5,225	48.0	10,063	4,243	5,820
14 – Kern	15,480	5,877	9,603	6,723	2,414	4,309	43.4	8,757	3,463	5,294
15 - San Joaquin	10,276	5,550	4,726	5,097	2,686	2,411	49.6	5,179	2,864	2,315
16 - Sonoma	8,338	5,036	3,302	4,619	2,700	1,919	55.4	3,719	2,336	1,383
17 - Stanislaus	10,901	5,024	5,877	4,807	2,152	2,655	44.1	6,094	2,872	3,222
18 - Santa Barbara	8,130	4,272	3,858	3,277	1,785	1,492	40.3	4,853	2,487	2,366
19 - Solano	11,467	5,610	5,857	6,405	3,051	3,354	55.9	5,062	2,559	2,503
20 - Tulare	10,253	5,324	4,929	5,214	2,680	2,534	50.9	5,039	2,644	2,395

(continued)

Table 5-2. CHIS 2015-2016 landline cases sampled, purged and released by strata (continued)

Strata	Sampled Landline Case			Purged Landline Cases				Released Landline Cases		
	2015-2016	2015	2016	2015-2016	2015	2016	% Purged by Stratum	2015-2016	2015	2016
21 - Santa Cruz	10,615	4,413	6,202	4,237	1,923	2,314	39.9	6,378	2,490	3,888
22 - Marin	47,055	41,944	5,111	28,172	25,073	3,099	59.9	18,883	16,871	2,012
23 - San Luis Obispo	7,086	3,233	3,853	3,202	1,429	1,773	45.2	3,884	1,804	2,080
24 - Placer	7,880	3,694	4,186	3,611	1,570	2,041	45.8	4,269	2,124	2,145
25 - Merced	10,260	5,402	4,858	4,843	2,499	2,344	47.2	5,417	2,903	2,514
26 - Butte	4,971	2,736	2,235	2,076	1,121	955	41.8	2,895	1,615	1,280
27 - Shasta	5,912	2,857	3,055	2,448	1,189	1,259	41.4	3,464	1,668	1,796
28 – Yolo	7,900	3,548	4,352	4,326	1,835	2,491	54.8	3,574	1,713	1,861
29 - El Dorado	7,748	3,567	4,181	3,581	1,718	1,863	46.2	4,167	1,849	2,318
30 - Imperial	9,846	5,399	4,447	3,749	2,071	1,678	38.1	6,097	3,328	2,769
31 - Napa	10,962	5,211	5,751	4,038	1,659	2,379	36.8	6,924	3,552	3,372
32 - Kings	13,663	6,778	6,885	5,176	2,639	2,537	37.9	8,487	4,139	4,348
33 - Madera	8,179	4,516	3,663	4,375	2,357	2,018	53.5	3,804	2,159	1,645
34 - Monterey	11,442	7,333	4,109	5,090	3,324	1,766	44.5	6,352	4,009	2,343
35 - Humboldt	6,059	2,353	3,706	3,623	1,333	2,290	59.8	2,436	1,020	1,416
36 - Nevada	6,533	2,960	3,573	2,900	1,365	1,535	44.4	3,633	1,595	2,038
37 - Mendocino	6,133	2,726	3,407	3,567	1,507	2,060	58.2	2,566	1,219	1,347
38 - Sutter	9,336	4,128	5,208	5,332	2,274	3,058	57.1	4,004	1,854	2,150
39 - Yuba	8,769	4,751	4,018	5,454	2,723	2,731	62.2	3,315	2,028	1,287
40 – Lake	7,084	2,913	4,171	4,310	1,693	2,617	60.8	2,774	1,220	1,554

(continued)

Table 5-2. CHIS 2015-2016 landline cases sampled, purged and released by strata (continued)

Strata	Sampled Landline Case			Purged Landline Cases				Released Landline Cases		
	2015-2016	2015	2016	2015-2016	2015	2016	% Purged by Stratum	2015-2016	2015	2016
41 - San Benito	16,457	7,270	9,187	4,855	1,973	2,882	29.5	11,602	5,297	6,305
42 - Tehama, etc.	5,491	2,927	2,564	2,428	1,269	1,159	44.2	3,063	1,658	1,405
43 - Del Norte, etc.	5,439	2,686	2,753	3,055	1,444	1,611	56.2	2,384	1,242	1,142
44 - Tuolumne, etc.	6,539	2,739	3,800	2,984	1,259	1,725	45.6	3,555	1,480	2,075
Total Landline	981,094	517,336	463,758	462,049	246,601	215,448		519,045	270,735	248,310
Korean Surname	47,683	6,666	41,017	9,900	1,289	8,611		37,783	5,377	32,406
Vietnamese Surname	8,171	2,945	5,226	1,783	635	1,148		6,388	2,310	4,078
Japanese Surname	11,790	488	11,302	2,127	83	2,044		9,663	405	9,258

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

5.2 Sample Management

All sampled telephone numbers were divided into "release groups," or random subsets of the overall samples, separately by sample type (landline with address, landline no address, list). Those with addresses were fielded in such a way that the pre-notification letters would be received within a few days of the initial telephone contact attempt. Both cases with and without addresses were generally given the same priority within the CATI scheduler.

Within the CATI system, active and completed cases were allocated into quotas, which are divisions of the sample that are to be worked by interviewers with special training or skills. RTI's CATI scheduler treats each quota as an independent sample. Quotas were given priority order for delivery of work to qualified interviewers. For example, a refusal converter would always be delivered a refusal quota case if one was available before being given a case from the default quota. The CHIS 2015-2016 quota were defined as follows:

- **Default—**All RDD and surname list cases on initial release, and continuing RDD and surname list sample cases that had not been moved to another work class; available to all interviewers;
- **Refusal—**Any RDD sample case that encountered a refusal at any point in the interview process, whether at the screener or any extended interview level; available only to interviewers selected to work and trained as refusal converters. There were five different refusal work classes: screener initial refusal, extended refusal (other than adolescent and adolescent permission), adolescent refusal, adolescent permission refusal, and second refusals of any type;
- **Language (Spanish)—**Any case determined or suspected to require a Spanish bilingual interviewer to re-contact; available only to the appropriate bilingual interviewers; there was also a refusal work class for Spanish-language cases;
- **Language (Mandarin, Cantonese, Vietnamese, Korean, and Tagalog)—**All RDD cases determined or suspected to require a Mandarin, Cantonese, Vietnamese, Korean, or Tagalog bilingual interviewer to re-contact; available only to the appropriate bilingual interviewers; and
- **Language (Other)—**Any RDD or county supplemental sample case determined or suspected to require contact in a language other than Spanish, Mandarin, Cantonese, Korean, Vietnamese, or Tagalog; available to bilingual interviewers for verification of language spoken by the respondent.

During the field period, RTI data collection and statistical staff monitored the yield (number of completed interviews) by stratum. As the number of completed interviews neared the targets, several actions were possible. Some cases in each stratum were held in reserve; in strata that appeared to be falling short of the targets, additional sample was released for calling. The monitoring process was repeated several times, re-calibrating the fielded sample as more information on progress to date became available. A few strata required purchase of additional sample because of unexpectedly low residency and/or response rates, or because the target number of completed interviews was increased. See *CHIS 2015-2016 Methodology Series: Report 1 – Sample Design* for a discussion of meeting the target numbers of completed adult and child interviews by stratum.

5.3 Inbound Toll-Free Calls

RTI maintained a toll-free number for respondents to call with questions about the survey. The toll-free line was staffed weekdays from noon to midnight Eastern Time, Saturdays from noon – 6 p.m. Eastern Time, and Sundays from 2 p.m. – 10 p.m. Eastern Time. In the event an operator was not available to answer the call or for calls made outside of the above time frames, the caller was directed to a voicemail message specific to CHIS.

Respondents had access to the toll-free number from a variety of sources. The toll-free number was included on all advance letters with an invitation for respondents with questions to call. The number was also placed on all refusal conversion letters sent to respondents who had earlier refused to participate. Interviewers provided the number throughout the data collection period to respondents who requested additional information.

Between the start of data collection in May 2015 and the end in December 2016, 14,277 calls were made to the toll-free number, fewer than were made in 2013-2014. Some of these were calling to refuse participation or to report that the sampled adult was too ill to participate. Most of these calls were simply to verify the legitimacy of the study or ask general questions with no further action required.

UCLA also maintained a separate toll-free number during the field period, which was available on the CHIS web site. RTI interviewers provided the UCLA number to respondents who specifically wanted to talk with someone at UCLA, and in other cases to help persuade the person to do the interview. There was continual back-and-forth contact between UCLA and RTI in response to these calls. RTI followed up on any calls complaining about an interviewer's behavior by identifying the interviewer and reviewing the case with her or him. Some of these exchanges involved cell sample respondents who claimed not to have received promised incentive payments. Again, RTI followed up as needed to resolve these issues.

6. DATA COLLECTION RESULTS

This chapter provides detailed results for the CHIS 2015-2016 data collection. Section 6.1 provides results for screening outcomes, out of scope cases, and extended interviews by for both landline and cell samples. This section provides screening results for list samples (Asian surname lists) as well. Results for the extended interviews include the adult, child, and adolescent interviews. Further results presented in this section are the number of children sampled and the number of child interviews completed; cooperation and completion rates in the landline sample for adult extended interviews by whether children were reported in screener and whether sampled adult is the screener respondent; the distribution of completed adult interviews and final adult dispositions by sampled quarter and nonresponse wave; number of adult interviews completed by language and sample/landline sample stratum; and mean administration times by language of administration for the screener and all types of extended interviews.

Section 6.2 provides data collection outcomes for an address-based sampling (ABS) oversample of the northern part of Imperial County as part of 2016 quarter 4 CHIS data collection. These results include outcomes for the screener and extended interviews (adult, child, and adolescent) for this special oversample. Section 6.3 describes and presents results for experiments conducted in phase 1 of quarter 3 and phase 1 of quarter 4 in 2016, which were designed to boost the child and adolescent interview yields.

6.1 Detailed Results by Outcome

Interviewers assigned a result code to each attempt to reach a sampled telephone number. The telephone result codes are divided into interim and final codes. Several tables in this section provide the final result codes (alphabetic) for the screener and extended interviews. Other tables in this section provide outcomes that do not directly reference the final result code, but use broader categories, such as completed or ineligible.

During data collection, each case was tracked according to its most recent result code. Cases assigned certain final result codes were occasionally re-fielded, but these situations required specific decisions and return of cases to the active scheduler. For example, cases with no contact after 9 calls for landline sample and 11 calls for cell sample were given a final status of “NA.” In some instances when these cases were selected as part of the phase 2 nonresponse follow-up sample but reached the preset maximum call attempts (“MC”), a few additional calls were allowed as an attempt to complete these cases.

At the end of the field period, all remaining interim cases were assigned final result codes according to their call history. Many cases for which some contact had been made received the MC code, with the actual designation depending on what else had happened during each cases' call history.

6.1.1 Screening Interview

Landline and cell samples. Table 6-1 provides results for CHIS 2015-2016 screening interviews for both landline and cell samples. Overall, 7.7 percent of sampled landline cases and 8.5 percent of sampled cell cases completed the screener. Ineligible cases were relatively low overall, but about 8 times higher for cell cases compared to landline cases. Out of scope cases were higher for the landline sample (58.7 percent) than the cell sample (39.9 percent), primarily due to the larger proportion of non-residential telephone numbers identified in the landline sample. Both no contact cases and refusals were slightly lower in the landline sample than the cell sample. Other nonresponse cases were over twice as high in the cell phone sample (16.1 percent) compared to the landline sample (6.7 percent), mostly due to the larger proportion of cases that reached maximum call attempts.

List Samples. Three Asian surname list samples were used for CHIS 2015-2016: Korean, Vietnamese, and Japanese. Table 6-2 provides the same set of outcomes as Table 6-1 for these three list samples. The proportion of sampled cases that completed the screener was lowest in the Vietnamese list sample (8.7 percent) and highest in the Japanese list sample (12.3 percent). The screened proportion for the Korean list sample was in between the other two at 10.0 percent. The Japanese list sample also produced the highest proportion of eligible screening respondents. The Vietnamese list sample had more than twice as many out of scope cases as the Korean and Japanese list samples did. The Vietnamese list sample (12.6 percent) had a much lower proportion of noncontact cases than the Korean (38.1 percent) and Japanese (46.8 percent) list samples. The proportions of cases that refused were quite similar across the three list samples, but the proportions of language problem and other nonresponse cases were significantly higher for the Korean list sample than for the other two list samples.

Table 6-1. Detailed results of CHIS 2015-2016 data collection, screening interview, landline and cell samples

	LANDLINE			CELL		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
TOTAL NUMBERS SAMPLED						
Out of Scope – Vendor Purge						
NB – NON-RESIDENTIAL, BUSINESS PURGE						
NT – NON-WORKING, TRITONE MATCH						
Total Out of Scope – Vendor Purge						
NUMBERS AVAILABLE TO BE CALLED	386,428			444,936		
NEVER CALLED	9			2		
TOTAL NUMBERS DIALED	386,419			444,934		
CS – COMPLETED SCREENER (C)	**29,932**		**7.7%**	**37,843**		**8.5%**
Ineligible(I)						
IF – INELIGIBLE SCREENER; >9 UNRELATED ADULTS	6	0.7%		26	0.4%	
IO – INELIGIBLE OUT OF STATE	1	0.1%		1	0.0%	
IP – INELIGIBLE CELLULAR	0	0.0%		0	0.0%	
IS – INELIGIBLE SCREENER; NO ELIGIBLE ADULTS	383	41.8%		3,793	53.9%	
IZ – INELIGIBLE SCREENER; NO ADULTS IN HH	0	0.0%		1	0.0%	
OTHER INELIGIBLE SCREENER	526	57.4%		3,213	45.7%	
Total Ineligible	**916**		**0.2%**	**7,034**		**1.6%**
Out of Scope						
NR – NON-RESIDENTIAL PHONE NUMBER	66,451	29.3%		17,579	10.2%	
NW – NON-WORKING PHONE NUMBER	138,451	61.0%		140,101	80.9%	
OD – DUPLICATE TELEPHONE NUMBER	0	0.0%		0	0.0%	
OTHER OUT OF SCOPE	22,006	9.7%		15,441	8.9%	
Total Out of Scope	**226,908**		**58.7%**	**173,121**		**38.9%**

(continued)

Table 6-1. Detailed results of CHIS 2015-2016 data collection, screening interview, landline and cell sample (continued)

	LANDLINE			CELL		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
Noncontact						
NA – NO CONTACT MADE AFTER TIME SLICES FILLED	32,796	45.2%		6,194	6.3%	
NM – NO CONTACT – REACHED ANSWERING MACHINE	39,685	54.8%		92,878	93.7%	
Total Noncontact	**72,481**		**18.8%**	**99,072**		**22.3%**
Refusal (R)						
R3 – FINAL REFUSAL – RECEIVED 3 OR MORE 2S	2,359	7.7%		2,224	3.9%	
RB – FINAL REFUSAL	28,106	92.3%		54,155	96.1%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	0	0.0%		0	0.0%	
RX – RE-RELEASED RB REACHED MAX CALL LIMIT	0	0.0%		0	0.0%	
Total Refusal	**30,465**		**7.9%**	**56,379**		**12.7%**
Other Nonresponse						
LH – HEARING AND SPEECH PROBLEM	3	0.0%		1	0.0%	
LM – LANGUAGE PROBLEM REACHED MAX CALLS	0	0.0%		1	0.0%	
LP – FINAL LANGUAGE PROBLEM	826	3.2%		828	1.2%	
MC – MAXIMUM CALLS	9,915	38.5%		14,381	20.1%	
ML – MAXIMUM CALLS – LANGUAGE PROB IN HH	0	0.0%		0	0.0%	
MR – MAXIMUM CALLS, REFUSAL IN HH	0	0.0%		0	0.0%	
NO – OTHER NON-RESPONSE	14,982	58.2%		56,276	78.7%	
Total Other Nonresponse	**25,726**		**6.7%**	**71,487**		**16.1%**
ELIGIBILITY RATE (C / (C+I))		97.0%			84.3%	
COOPERATION RATE ((C+I) / (C+I+R))		50.3%			44.3%	

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

Table 6-2. Detailed results of CHIS 2015-2016 data collection, list sample screening

	KOREAN SAMPLE		VIETNAMESE SAMPLE		JAPANESE SAMPLE	
	Number	Percentage	Number	Percentage	Number	Percentage
TOTAL NUMBERS SAMPLED						
Out of Scope – Vendor Purge						
NB – NON-RESIDENTIAL, BUSINESS PURGE						
NT – NON-WORKING, TRITONE MATCH						
Total Out of Scope – Vendor Purge						
TOTAL NUMBERS DIALED	**37,827**		**85,836**		**9,666**	
Completed Screener						
C – ELIGIBLE	3,719	9.8%	7,216	8.4%	1,168	12.1%
I – INELIGIBLE	86	0.2%	294	0.3%	19	0.2%
Total Completed Screener	**3,805**		**7,510**		**1,187**	
TOTAL OUT OF SCOPE	8,873	23.5%	49,255	57.4%	2,036	21.1%
TOTAL NONCONTACT	14,418	38.1%	10,782	12.6%	4,526	46.8%
Nonresponse						
R – REFUSAL	4,045	10.7%	9,583	11.2%	927	9.6%
TOTAL LANGUAGE PROBLEM	792	2.1%	375	0.4%	51	0.5%
TOTAL OTHER NONRESPONSE	5,894	15.6%	8,331	9.7%	939	9.7%
Total Nonresponse	**10,731**		**18,289**		**1,917**	
ELIGIBILITY RATE (C / (C+I))		97.7%		96.1%		98.4%
COOPERATION RATE ((C+I) / (C+I+R))		48.5%		43.9%		56.1%

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

Screening Outcomes Over Time. Tables 6-3a and 6-3b provide comparisons of screener outcomes (excluding out of scope cases) for CHIS 2015-2016 compared to prior CHIS cycles. Table 6-3a provides a comparison of landline screener outcomes going back to CHIS 2001 and Table 6-3b provides a comparison of cell screener outcomes going back to CHIS 2009.

For landline sample, the screening rate has decreased steadily since 2001 and the ineligible rate has increased. Noncontact and refusal rates have generally increased over these cycles, although both rates appear to have leveled off over the past three cycles. Other nonresponse outcomes increased significantly in the 2015-2016 cycle.

For cell sample, the screening rate has also decreased steadily since cell phone sampling began in the 2011-2012 cycle. The ineligible rate declined in the 2015-2016 cycle compared to previous cycles. Unlike the landline sample, noncontact and refusal rates have declined in recent cycles. Like the landline sample, other nonresponse outcomes increased significantly in the 2015-2016 cycle.

6.1.2 Adult Extended Interview

The number of completed screeners with eligible households sets the maximum number of cases for the adult extended interviews. As in past cycles, data was included from partially completed adult interviews, if the interview went at least through Section K of the instrument. Adult interviews that did not include complete of Section K were not included in the data.

The results of data collection efforts for the adult extended interview for the landline and cell samples are shown in Table 6-4a and the same results are shown for the list samples in Table 6-4b. Adult extended interviews were completed for 51.5 percent of the 29,932 landline sample adults, which was similar to CHIS 2013-2014. Less than 1 percent of all adult interviews counted as complete were partial completes (CP). The proportion of refusals in the 2015-2016 landline adult sample (14.7 percent) was significantly lower than 2013-2014, but the proportion of other nonresponse (33.7 percent) increased significantly. It is possible that the higher number of other nonresponse cases in the 2015-2016 landline adult sample included some hidden “passive” refusals.

The completion rate for the cell sample of 54.0 percent was about 3 points higher than for the landline sample and very similar to 2013-2014. Like the landline sample, about 1 percent of adult interviews counted as complete were partial completes (CP). The proportion of adult interview refusals in the 2015-2016 cell sample (11.7 percent) was about 3 points lower significantly lower than in 2013-2014, but the proportion of other nonresponse (34.2 percent) was quite close to 2013-2014.

Table 6-3a. Comparison of landline RDD screener outcomes excluding out of scope case CHIS 2001 through CHIS 2015-2016

	CHIS 2015-2016	CHIS 2013-2014	CHIS 2011-2012	CHIS 2009	CHIS 2007	CHIS 2005	CHIS 2003	CHIS 2001
Sample Size	159,511	269,470	243,799	295,894	316,785	198,372	153,452	154,639
Completed Screeners	18.8%	23.1%	25.6%	27.5%	26.8%	35.1%	43.2%	53.0%
Ineligible	0.6%	0.1%	0.1%	0.1%	<0.1%	<0.1%	0.5%	<0.1%
Noncontact	45.4%	47.2%	43.9%	38.3%	30.2%	23.6%	19.7%	19.8%
Refusal	19.1%	25.5%	25.7%	28.5%	36.8%	34.8%	28.7%	20.9%
Other Nonresponse	16.1%	4.1%	4.7%	5.7%	6.2%	6.5%	7.9%	6.3%

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

Table 6-3b. Comparison of cell RDD screener outcomes excluding out-of-scope cases CHIS 2009 through CHIS 2015-2016

	CHIS 2015-2016	CHIS 2013-2014	CHIS 2011-2012	CHIS 2009
Sample Size	271,813	74,995	77,172	41,633
Completed Screeners	13.9%	19.0%	21.2%	12.5%
Ineligible	2.6%	10.7%	10.1%	5.3%
Noncontact	36.5%	27.0%	23.6%	36.2%
Refusal	20.7%	37.9%	39.4%	39.3%
Other Nonresponse	26.3%	5.4%	5.7%	6.8%

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

Table 6-4a. Detailed results of CHIS 2015-2016 data collection, adult extended interview for cell and landline samples

	LANDLINE			CELL		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)						
CA – COMPLETED ADULT EXTENDED	15,318	99.3%		20,226	98.9%	
CP – ADULT PARTIAL COMPLETE FINISHED	106	0.7%		220	1.1%	
Total Completed Interviews	**15,424**		**51.5%**	**20,446**		**54.0%**
Ineligible(I)						
IA – INELIGIBLE AGE FOR ADULT EXTENDED	17	100.0%		4	100.0%	
IO – INELIGIBLE OUT OF STATE	0	0.0%		0	0.0%	
Total Ineligible	**17**		**0.1%**	**4**		**0.0%**
Out of Scope						
OE – OUT OF SCOPE ENUMERATION ERROR	0	0.0%		0	0.0%	
OO – OTHER OUT OF SCOPE	0	0.0%		0	0.0%	
Total Out of Scope	**0**		**0.0%**	**0**		**0.0%**
Refusal (R)						
R1 – FINAL REF, NO CONVERSION ATTEMPT	0	0.0%		0	0.0%	
R3 – FINAL REF, 3 OR MORE REFUSALS	68	1.5%		31	0.7%	
RB – FINAL REF	4,337	98.5%		4,410	99.3%	
RM – REF REACHED MAXIMUM CALL LIMIT	0	0.0%		0	0.0%	
Total Refusal	**4,405**		**14.7%**	**4,441**		**11.7%**
Other Nonresponse						
LH – HEARING AND SPEECH PROBLEM	0	0.0%		0	0.0%	
LM – LANGUAGE PROBLEM REACHED MAX CALLS	0	0.0%		1	0.0%	
LP – FINAL LANGUAGE PROBLEM	21	0.2%		16	0.1%	
MC – MAXIMUM CALLS	2,693	26.7%		2,599	20.1%	

(continued)

Table 6-4a. Detailed results of CHIS 2015-2016 data collection, adult extended interview for cell and landline samples (continued)

	LANDLINE			CELL		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
ML – MAXIMUM CALLS – SCRNR SLT PROB IN HH	0	0.0%		0	0.0%	
MR – MAXIMUM CALLS, REFUSAL IN HH	0	0.0%		0	0.0%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	0	0.0%		0	0.0%	
ND – RESPONDENT DECEASED	20	0.2%		8	0.1%	
NF – NOT AVAILABLE IN FIELD PERIOD	123	1.2%		77	0.6%	
NL – NOT LOCATABLE THROUGH TRACING	40	0.4%		16	0.1%	
NO – OTHER NON-RESPONSE	7,004	69.4%		10,206	78.8%	
NS – SUBJECT SICK/INCAPACITATED	185	1.8%		29	0.2%	
Total Other Nonresponse	**10,086**		**33.7%**	**12,952**		**34.2%**
TOTAL	**29,932**			**37,843**		
ELIGIBILITY RATE (C / (C+I))			99.9%			100.0%
COOPERATION RATE (C / (C+R))			77.8%			82.2%

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

Table 6-4b. Detailed results of CHIS 2015-2016 data collection, adult extended interview for list samples

	KOREAN LIST SAMPLE			VIETNAMESE LIST SAMPLE			JAPANESE LIST SAMPLE		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CA – COMPLETED ADULT EXTENDED	1,745	98.5%		3,531	99.2%		629	99.7%	
CP – ADULT PARTIAL COMPLETE FINISHED	27	1.5%		27	0.8%		2	0.3%	
Total Completed Interviews	**1,772**		**47.6%**	**3,558**		**49.3%**	**631**		**54.0%**
Ineligible(I)									
IA – INELIGIBLE AGE FOR ADULT EXTENDED	0	0.0%		11	100.0%		0	0.0%	
IO – INELIGIBLE OUT OF STATE	0	0.0%		0	0.0%		0	0.0%	
Total Ineligible	**0**		**0.0%**	**11**		**0.2%**	**0**		**0.0%**
Out of Scope									
OE – OUT OF SCOPE ENUMERATION ERROR	0	0.0%		0	0.0%		0	0.0%	
OO – OTHER OUT OF SCOPE	0	0.0%		0	0.0%		0	0.0%	
Total Out of Scope	**0**		**0.0%**	**0**		**0.0%**	**0**		**0.0%**
Refusal (R)									
R1 – FINAL REF, NO CONVERSION ATTEMPT	0	0.0%		0	0.0%		0	0.0%	
R3 – FINAL REF, 3 OR MORE REFUSALS	5	0.9%		16	1.5%		2	1.2%	
RB – FINAL REF	539	99.1%		1,042	98.5%		159	98.8%	
RM – REF REACHED MAXIMUM CALL LIMIT	0	0.0%		0	0.0%		0	0.0%	
Total Refusal	**544**		**14.6%**	**1,058**		**14.7%**	**161**		**13.8%**
Other Nonresponse									
LH – HEARING AND SPEECH PROBLEM	0	0.0%		0	0.0%		0	0.0%	
LM – LANGUAGE PROBLEM REACHED MAX CALLS	0	0.0%		0	0.0%		0	0.0%	
LP – FINAL LANGUAGE PROBLEM	6	0.4%		10	0.4%		0	0.0%	
MC – MAXIMUM CALLS	248	17.7%		739	28.5%		113	30.1%	
ML – MAXIMUM CALLS – SCRNR SLT PROB IN HH	0	0.0%		0	0.0%		0	0.0%	

(continued)

Table 6-4b. Detailed results of CHIS 2015-2016 data collection, adult extended interview for list samples (continued)

	KOREAN LIST SAMPLE			VIETNAMESE LIST SAMPLE			JAPANESE LIST SAMPLE		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
MR – MAXIMUM CALLS, REFUSAL IN HH	0	0.0%		0	0.0%		0	0.0%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	0	0.0%		0	0.0%		0	0.0%	
ND – RESPONDENT DECEASED	3	0.2%		8	0.3%		0	0.0%	
NF – NOT AVAILABLE IN FIELD PERIOD	20	1.4%		25	1.0%		3	0.8%	
NL – NOT LOCATABLE THROUGH TRACING	4	0.3%		6	0.2%		0	0.0%	
NO – OTHER NON-RESPONSE	1,042	74.3%		1,743	67.3%		255	67.8%	
NS – SUBJECT SICK/INCAPACITATED	80	5.7%		58	2.2%		5	1.3%	
Total Other Nonresponse	**1,403**		**37.7%**	**2,589**		**35.9%**	**376**		**32.2%**
TOTAL	**3,719**			**7,216**			**1,168**		
ELIGIBILITY RATE (C / (C+I))			100.0%			99.7%			100.0%
COOPERATION RATE (C / (C+R))			76.5%			77.1%			79.7%

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

The completion rates for the Korean surname list sample (47.6 percent) was slightly lower than 2013-2014 but slightly higher for the Vietnamese surname list sample (49.3 percent). The completion rate for the Japanese surname list was higher than the other two surname lists at 54.0 percent and quite similar to 2013-2014. The proportion of refusals was similar across the three surname list samples, with a low of 13.8 percent and a high of 14.7 percent. Adults selected from the Japanese surname list (32.2 percent) were least likely to be classified as "other nonresponse" and those adults selected from the Korean surname list (37.7 percent) were most likely to be classified as "other nonresponse."

6.1.3 Child Extended Interview

Results for the child extended interviews for the landline, cell, and surname list samples are shown in Table 6-5. The completion rate for the landline sample was 45.7 percent, which was a significant decline from CHIS 2013-2014. The completion rate for the cell sample was also significantly lower than CHIS 2013-2014 at 47.8 percent. The completion rate for the Asian surname list samples was the lowest among the three sample types at 40.2 percent. The proportion of nonresponse attributable to refusal was somewhat higher for the list samples (12.8 percent) than for the landline (10.8 percent) or cell (9.0 percent) RDD samples, which likely contributed to the lower completion rate for the list samples.

Two design changes have affected the selection of children in screened households in recent CHIS cycles. The first was the child-first procedure, first adopted in CHIS 2005. The second was the addition of the cell sample, and sampling children from the cell sample, first done in CHIS 2009. The cell sample does not use the child-first procedure because most adults selected from the cell sample are also the screener respondent.

Table 6-6 summarizes sampling and completing interviews about children from CHIS 2007 through CHIS 2015-2016, which provides data to examine the effects of these two design features over time. The proportion of the child sample coming from cell numbers has risen from none in 2007 to more than 59 percent in 2015-2016. The sharp increase from 2013-2014 to 2015-2016 is attributable to another change for 2015-2016, increasing the overall proportion of the RDD sample from 20 percent to 50 percent cell sample. The proportion of children selected "child first" dropped from about 40 percent in 2013-2014 to about 12 percent in 2015-2016, also due to the significant increase in the proportion of the RDD sample allocated to cell numbers.

Table 6-5. Detailed results of CHIS 2015-2016 data collection, child extended interview by sample type

	LANDLINE SAMPLE			CELL SAMPLE			LIST SAMPLES		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CC – COMPLETED CHILD EXTENDED	**1,198**		**45.7%**	**2,584**		**45.8%**	**480**		**40.2%**
Ineligible (I)									
IC – INELIGIBLE AGE	0	0.0%		0	0.0%		0	0.0%	
IO – INELIGIBLE OUT OF STATE	0	0.0%		0	0.0%		0	0.0%	
Total Ineligible	**0**		**0.0%**	**0**		**0.0%**	**0**		**0.0%**
Out of Scope									
OE – ENUMERATION ERROR	0		0.0%	0		0.0%	0		0.0%
Refusal (R)									
R1 – FINAL REF, NO CONVERSION	0	0.0%		0	0.0%		0	0.0%	
R3 – FINAL REF, 3 OR MORE REFUSALS	16	5.7%		29	5.7%		8	5.4%	
RB – OTHER FINAL REFUSAL	266	94.3%		479	94.3%		141	94.6%	
RM – REF REACHED CALL LIMIT	0	0.0%		0	0.0%		0	0.0%	
Total Refusal	**282**		**10.8%**	**508**		**9.0%**	**149**		**12.5%**
Other Nonresponse									
LM – LANG PROB REACHED MAX CALLS	0	0.0%		0	0.0%		0	0.0%	
LP – FINAL LANGUAGE PROBLEM	3	0.3%		7	0.3%		1	0.2%	
MC – MAX CALLS THIS INTERVIEW	278	24.4%		481	18.9%		139	24.6%	
ML – MAX CALLS PROB IN HH	0	0.0%		0	0.0%		0	0.0%	
MR – MAX CALLS REFUSAL IN HH	0	0.0%		0	0.0%		0	0.0%	
MT – MAX CALLS IN HH	0	0.0%		0	0.0%		0	0.0%	
NF – NOT AVAILABLE IN FIELD PERIOD	3	0.3%		4	0.2%		2	0.4%	
NL – NOT LOCATABLE	1	0.1%		1	0.1%		0	0.0%	
NO – OTHER NON-RESPONSE	853	74.9%		2058	80.6%		421	74.5%	

(continued)

Table 6-5. Detailed results of CHIS 2015-2016 data collection, child extended interview by sample type (continued)

	LANDLINE SAMPLE			CELL SAMPLE			LIST SAMPLES		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
NS – SUBJECT SICK/INCAPACITATED	1	0.1%		1	0.1%		1	0.2%	
Total Other Nonresponse	**1139**		**43.5%**	**2552**		**45.2%**	**565**		**47.3%**
TOTAL	**2,619**			**5,644**			**1,194**		
ELIGIBILITY RATE (C / (C+I))			100.0%			100.0%			100.0%
COOPERATION RATE (C / (C+R))			81.0%			83.6%			76.3%

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

Table 6-6. Number of children sampled and child interviews completed, CHIS 2007 through 2015-2016

	CHIS 2015-2016	CHIS 2013-2014	CHIS 2011-2012	CHIS 2009	CHIS 2007
Total children sampled	**9,551**	**7,475**	**9,764**	**12,129**	**13,089**
Cell sample	5,655	1,601	1,941	595	0
Percentage of all children	*59.2%*	*21.4%*	*19.9%*	*4.9%*	*0.0%*
Other samples	3,896	5,874	7,823	11,534	13,089
Child first	1,137	3,016	3,922	5,816	6,335
Percentage of all samples	*11.9%*	*40.3%*	*40.2%*	*48.0%*	*48.4%*
Percentage of other samples	*29.2%*	*51.3%*	*50.1%*	*50.4%*	*48.4%*
Child first no adult completed	958	2,236	2,737	4,034	4,189
Percentage of child first	*84.3%*	*74.1%*	*69.8%*	*69.4%*	*66.1%*
Completed child interviews	**4,293**	**5,470**	**7,337**	**8,981**	**9,933**
Cell sample	2,585	1,256	1,523	486	0
Percentage of all child interviews	*60.2%*	*23.0%*	*20.8%*	*5.4%*	*0.0%*
Other samples	1,708	4,214	5,814	8,495	9,933
Child first	584	1,952	2,646	3,751	4,532
Percentage of all samples	*13.6%*	*35.7%*	*36.1%*	*41.8%*	*45.6%*
Percentage of other samples	*34.2%*	*46.3%*	*45.5%*	*44.2%*	*45.6%*
Completion rate	*51.4%*	*64.7%*	*67.5%*	*64.5%*	*71.5%*
Child first no adult completed	422	1,234	1,596	2,163	2,545
Percentage of child first	*72.3%*	*63.2%*	*60.3%*	*57.7%*	*56.2%*
Completion rate	*44.1%*	*55.2%*	*58.3%*	*53.6%*	*60.8%*
Child sampled per completed adult					
Cell sample	0.19	0.21	0.21	0.20	n/a[1]
Other samples	0.08	0.18	0.23	0.26	0.26
Child sampled per completed screener					
Cell sample	0.15	0.11	0.12	0.08	n/a[1]
Other samples	0.09	0.09	0.12	0.15	0.15

Source: UCLA Center for Health Policy Research, 2015-2016 California Health Interview Survey.
[1] No child interviews were completed in cell phone cases in 2007. For more details see *CHIS 2007 Methodology Series: Report 2 – Data Collection Methods*.

The second panel of Table 6-6 shows results on the number and source of child interviews completed in each cycle. Because of the increased proportion of the cell sample in 2015-2016, and therefore more children being sampled from cell numbers, the proportion of child interviews from the cell sample among all child interviews increased from 23 percent in 2013-2014 to 60 percent in 2015-2016. The increase in the cell sample proportion for 2015-2016 also contributed to the proportion of child first interviews among all samples decreasing from about 36 percent in 2013-2014 to about 14 percent in 2015-2016. At the same time, the completion rate for child first interviews dropped from about 65 percent in 2013-2014 to about 51 percent in 2015-2016. These two factors combined for a lower number of child first interviews in 2015-2016 compared to recent CHIS cycles.

The third section of Table 6-6 shows ratios of children sampled per adult interviews completed for each cycle. Since the 2009 CHIS, the ratio for cell phone sample has remained steady at about 0.20. For other samples, this ratio has declined steadily over these cycles, from 0.26 in 2007 to 0.08 in 2015-2016.

The final section of Table 6-6 shows the trend in overall yield of sampled children as a proportion of completed screeners. While the proportion for other samples has declined steadily, from 0.15 in 2007 to 0.09 in 2015-2016, the proportion for cell sample has increased from 0.08 in 2009 to 0.15 in 2015-2016. These opposing changes over recent cycles indicates the cell sample continues to grow in importance for the yield of child interviews. The continued decline in child yield in the landline and list samples is likely due in part to a continuing increase in households with children being cell-only and could also reflect greater reluctance of families with children to answer their landlines when they do not recognize the caller.

Table 6-7 presents cooperation and completion rates for landline sample adult interviews, by whether children were reported in the screener and whether the sampled adult is the screener respondent, from the 2003 through the 2015-2016 cycles. In addition, changes in cooperation and completion rates among the past three CHIS cycles are also presented. These results provide more details on the impact of children in the household and whether the sampled adult completed the screener on adult interviews. Only landline cases are included in this table because the child first protocol is not implemented in the cell sample and, therefore, a true comparison across the samples cannot be made.

The general pattern shown in Table 6-7 is that cooperation and completion rates for the adult interview are higher in households when the screening respondent is also the adult selected for the interview. These results reflect the advantages of either (1) completing screenings in households with

only one adult or (2) being able to segue immediately into the adult interview after completing the screening in households with more than one adult. A second pattern is that cooperation and completion rates are generally higher in households without any children identified. The differences between households with and without children are typically larger for completion rates than cooperation rates. These data suggest the additional burden on adults asked to complete both the adult and child interview has an impact on cooperation rates for the adult interview and a somewhat larger impact on completion rates for the child interview. The larger impact on completion rates likely results from the perceived burden of adult interview respondents who learn they will also be expected asked to complete a child interview.

Table 6-7. Cooperation and completion rates, landline sample and cell phone sample adult extended interview, by whether children were reported in screener and whether sampled adult is the screener respondent

	Sampled Adult Is Screener Respondent		Sampled Adult Is Not Screener Respondent		
	Children Reported	No Children Reported	Children Reported	No Children Reported	Total
Cooperation rate					
CHIS 2003	84.0%	83.8%	64.8%	62.2%	76.1%
CHIS 2005	78.9%	79.8%	55.3%	56.4%	70.9%
Change '03-'05	*-5.1*	*-4.0*	*-9.5*	*-5.8*	*-5.2*
CHIS 2007	76.7%	79.8%	47.8%	51.2%	68.7%
Change '05-'07	*-2.2*	*0.0*	*-7.5*	*-5.2*	*-2.2*
CHIS 2009	71.8%	74.7%	47.7%	50.4%	65.3%
Change '07-'09	*-4.9*	*-5.1*	*-0.1*	*-0.8*	*-3.4*
CHIS 2011-2012	74.3%	76.4%	46.9%	48.9%	65.9%
Change '09-'11	*2.5*	*1.7*	*-0.8*	*-1.5*	*0.6*
CHIS 2013-2014	70.3%	74.8%	41.3%	45.4%	63.7%
Change '11-'13	*-4.1*	*-1.7*	*-5.6*	*-3.4*	*-2.2*
CHIS 2015-2016	84.5%	84.1%	64.2%	59.4%	77.7%
Change '13-'15	*14.2*	*9.3*	*22.9*	*14.0*	*14.0*
CHIS 2011-2012 cell	66.4%	68.6%	37.5%	28.9%	66.9%
CHIS 2013-2014 cell	65.4%	67.7%	32.0%	28.0%	65.9%
Change '11-'13	*-1.0*	*-0.9*	*-5.5*	*-0.9*	*-1.0*
CHIS 2015-2016 cell	83.5%	82.2%	43.5%	48.7%	82.2%
Change '13-'15	*18.1*	*14.5*	*11.5*	*20.7*	*16.2*

(continued)

Table 6-7. Cooperation and completion rates, landline sample and cell phone sample adult extended interview, by whether children were reported in screener and whether sampled adult is the screener respondent (continued)

	Sampled Adult Is Screener Respondent		Sampled Adult Is Not Screener Respondent		
	Children Reported	No Children Reported	Children Reported	No Children Reported	Total
Completion rate					
CHIS 2003	70.6%	76.7%	44.9%	47.7%	63.1%
CHIS 2005	65.3%	72.9%	37.6%	43.0%	58.4%
Change '03-'05	*-5.3*	*-3.8*	*-7.3*	*-4.7*	*-4.7*
CHIS 2007	63.8%	73.8%	32.1%	39.5%	57.5%
Change '05-'07	*-1.5*	*0.9*	*-5.5*	*-3.5*	*-0.9*
CHIS 2009	56.7%	66.8%	29.4%	37.4%	52.5%
Change '07-'09	*-7.1*	*-7.0*	*-2.7*	*-2.1*	*-5.0*
CHIS 2011-2012	59.1%	67.9%	28.8%	35.1%	52.3%
Change '09-'11	*2.4*	*1.1*	*-0.6*	*-2.3*	*-0.2*
CHIS 2013-2014	55.6%	66.9%	25.2%	32.1%	50.9%
Change '11-'13	*-3.5*	*-1.0*	*-3.6*	*-2.9*	*-1.5*
CHIS 2015-2016	51.9%	64.7%	24.4%	30.6%	51.5%
Change '13-'15	*-3.7*	*-2.2*	*-0.8*	*-1.5*	*0.6*
CHIS 2011-2012 cell	53.9%	59.3%	21.5%	18.6%	56.0%
CHIS 2013-2014 cell	52.1%	57.8%	17.1%	19.7%	54.6%
Change '11-'13	*-1.8*	*-1.4*	*-4.4*	*1.1*	*-1.4*
CHIS 2015-2016 cell	50.4%	55.7%	14.3%	22.1%	54.0%
Change '13-'15	*-1.7*	*-2.1*	*-2.8*	*2.4*	*-0.6*

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

6.1.4 Adolescent Extended Interview

Like the adult and child interview tables, Table 6-8 presents detailed data collection results for the adolescent extended interviews for the 2015-2016 landline, cell, and list samples. Numbers and percentages for all but the last three rows of the tables refer to sampled adolescents for whom permission to interview was obtained from a parent or legal guardian. The bottom three rows factor in the parental permission rates for sampled adolescents.

The completion rate among adolescents for the landline sample cases with parental permission completed (70.1 percent) was about 3 percent lower than in 2013-2014 (73.7) and the proportion of selected adolescents for whom parental permission was refused (66.7 percent) increased by about 20 points from 2013-2014. The combination of these two outcomes (completed adolescent interviews divided by all adolescents sampled, 23.4 percent) was a decrease of about 18 points from 2013-2014 in overall adolescent completion rates.

Table 6-8. Detailed results of CHIS 2015-2016 data collection, adolescent extended interview

	LANDLINE SAMPLE			CELL SAMPLE			LIST SAMPLES		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CT – COMPLETED ADOLESCENT EXTENDED	**560**		**70.1%**	**822**		**66.7%**	**200**		**65.1%**
Ineligible (I)									
IT – IN'BLE AGE FOR ADOLESCENT EXTENDED	0		0.0%	0		0.0%	0		0.0%
Out of Scope									
OE – OUT OF SCOPE ENUMERATION ERROR	0		0.0%	0		0.0%	0		0.0%
Refusal (R)									
R1 – FINAL REF, NO CONVERSION ATTEMPT	0	0.0%		0	0.0%		0	0.0%	
R3 – FINAL REF RECEIVED 3 OR MORE 2S	0	0.0%		0	0.0%		0	0.0%	
RB – FINAL REF	31	100.0%		37	100.0%		17	100.0%	
RM – REFREACHED MAXIMUM CALL LIMIT	0	0.0%		0	0.0%		0	0.0%	
Total Refusal	**31**		**3.9%**	**37**		**3.0%**	**17**		**5.5%**
Other Nonresponse									
LM – LANG PROBLEM REACHED MAX CALLS	0	0.0%		0	0.0%		0	0.0%	
LP – FINAL LANGUAGE PROBLEM	0	0.0%		0	0.0%		0	0.0%	
MC – MAXIMUM CALLS	17	8.2%		1	0.3%		10	11.1%	
ML – MAX CALLS – SCRNRSLT PROB IN HH	0	0.0%		0	0.0%		0	0.0%	
MR – MAX CALLS – REFUSAL IN HH	0	0.0%		0	0.0%		0	0.0%	
MT – MAX NUMBER OF CALL ATTEMPTS	0	0.0%		0	0.0%		0	0.0%	
NF – NOT AVAILABLE IN FIELD PERIOD	1	0.5%		1	0.3%		1	1.1%	
NL – NOT LOCATABLE THROUGH TRACING	0	0.0%		0	0.0%		0	0.0%	
NO -- OTHER NON-RESPONSE	189	90.9%		371	99.5%		79	87.8%	
NS – SUBJECT SICK/INCAPACITATED	1	0.5%		0	0.0%		0	0.0%	
Total Other Nonresponse	**208**		**26.0%**	**373**		**30.3%**	**90**		**29.3%**
TOTAL	**799**			**1,232**			**307**		
COOPERATION RATE (C / (C+R))			94.8%			95.7%			92.2%
ADOLESCENTS SAMPLED	2,394			3,523			1,030		
PERMISSION NOT RECEIVED	1,595		66.6%	2,291		65.0%	723		70.2%
COMBINED COMPLETION RATE (C / SAMPLED)			23.4%			23.3%			19.4%

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

The completion rate among adolescents for the cell sample cases with parental permission given (66.7 percent) was about 3 percent lower than both the 2015-2016 landline sample and the 2013-2014 cell sample. Like the 2015-2016 landline sample, the combined adolescent interview completion rate among all adolescents sampled from cell sample (23.3 percent) represents a significant decrease from 2013-2014, primarily due to the much higher refusal rate for parental permission (65.0 percent).

As in 2013-2014, the net yields for the Asian surname list samples were lower than both the landline and cell samples. The rates for obtaining parental permission and completion rates among adolescents for whom permission was given are both slightly lower than the respective rates for the cell sample. This resulted in a combined adolescent interview completion rate among all adolescents sampled from the list samples of 19.4.

The child-first procedure also affects the adolescent interview yield, because adolescents could also be sampled and interviewed in a child-first household before completion of the adult interviews although not to the same extent as the child yield. As noted in Section 6.1.3, the proportion of the RDD sample allocated to cell numbers increased from 20 percent to 50 percent in 2015-2016. This change reduced opportunities to initiate the child first protocol in households with adolescents identified, because the child first protocol is not used in the cell sample.

6.1.5 Interview Completion Over Data Collection Periods

Table 6-9 shows the distribution of completed adult interviews and final adult dispositions for each quarter and phase of data collection for the 2015-2016 cycle for the landline and cell samples. Sampling was divided into 6 quarterly periods for CHIS 2015-2016, with additional subsampling of eligible cases for the second phase of each quarter (NRFU). See Table 7-1 in this report for details on all sample release for each quarter and phase, including specific fielding dates. Across quarters, sample sizes were adjusted to meet annual goals for adult interviews from all sample types. Sampling rates for phase 2 NRFU periods were also adjusted within each quarter to meet overall quarterly data collection goals.

For quarters 3 and 4 in 2015 and quarter 2 in 2016, more adult interviews were obtained via the landline sample than the cell sample. In quarters 1, 3, and 4 of 2016, a greater proportion of adult interviews came from the cell sample compared to the landline sample. These fluctuations across quarters reflect sample adjustments intended to produce annual yields of adult interviews with about half of the adult interviews coming from each RDD sample frame.

Table 6-9. Distribution of completed adult interviews and final adult dispositions by sampled quarter and nonresponse wave, CHIS 2015-2016

	Sampled Quarter								
	2015 Q3			2015 Q4			2016 Q1		
	Phase 1	Phase 2 NRFU	Total	Phase 1	Phase 2 NRFU	Total	Phase 1	Phase 2 NRFU	Total
Landline Sample									
Completed interviews	3,416	501	3,917	6,648	717	7,365	2,571	417	2,988
Percentage	*87%*	*13%*		*90%*	*10%*		*86%*	*14%*	
Total Available	**7,012**	**1,823**	**7,555**	**13,884**	**3,029**	**14,721**	**5,367**	**1,652**	**5,765**
Cooperation Rate[1]			90%			82%			82%
Completion Rate[2]			52%			50%			52%
Cell Sample									
Completed interviews	3,143	285	3,428	5,955	369	6,324	2,681	349	3,030
Percentage	*92%*	*8%*		*94%*	*6%*		*88%*	*12%*	
Total Available	**5,756**	**1,412**	**6,075**	**10,916**	**2,112**	**11,344**	**5,292**	**1,753**	**5,681**
Cooperation Rate[1]			92%			84%			84%
Completion Rate[2]			56%			56%			53%

(continued)

Table 6-9. Distribution of completed adult interviews and final adult dispositions by sampled quarter and nonresponse wave, CHIS 2015-2016 (continued)

	Sampled Quarter									Total (All Quarters)		
	2016 Q2			2016 Q3			2016 Q4					
	Phase 1	Phase 2 NRFU	Total	Phase 1	Phase 2 NRFU	Total	Phase 1	Phase 2 NRFU	Total	Phase 1	Phase 2 NRFU	Total
Landline Sample												
Completed interviews	3,194	367	3,561	2,076	297	2,373	1,038	137	1,175	18,943	2,436	21,379
Percentage	*90%*	*10%*		*87%*	*13%*		*88%*	*12%*		*89%*	*11%*	
Total Available	**6,452**	**1,703**	**6,924**	**4,323**	**1,269**	**4,690**	**2,225**	**653**	**2,354**	**39,263**	**10,129**	**42,009**
Cooperation Rate[1]			83%			80%			79%			83%
Completion Rate[2]			51%			51%			50%			51%
Cell Sample												
Completed interviews	1,892	262	2,154	3,284	311	3,595	1,655	266	1,921	18,610	1,842	20,452
Percentage	*88%*	*12%*		*91%*	*9%*		*86%*	*14%*		*91%*	*9%*	
Total Available	**3,728**	**1,110**	**4,072**	**6,506**	**1,653**	**6,887**	**3,460**	**1,304**	**3,810**	**35,658**	**9,344**	**37,869**
Cooperation Rate[1]			82%			77%			78%			83%
Completion Rate[2]			*53%*			52%			50%			54%

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

[1] Cooperation rate = ((complete + partial complete)/(complete + partial complete + refusal))

[2] Completion rate = ((complete + partial complete)/total sampled)

Another important pattern in these results concerns the range of the proportions of adult interviews completed in phase 1 versus phase 2 in each quarter. Across the quarters, the range of adult interviews completed in phase 1 for either sample was between a low of 86 percent and a high of 94 percent. For all 2015-2016 quarters combined, 89 percent of adult interviews from the landline sample were completed in phase 1 and 91 percent of adult interviews from the cell sample were completed in phase 1.

6.1.6 Completed Interviews by Language

Table 6-10 shows the number of adult extended interviews completed in each of the six languages offered in CHIS 2015-2016 by landline stratum. The lower section of this table provides these same results separately for the cell sample and Asian surname list samples.

Overall, 3,795 adult interviews from these samples were conducted in Spanish, which was 9 percent of all adult interviews and 1 percent higher overall than in 2013-2014. The highest percentage of adult interviews completed in Spanish in the landline sample was in Imperial County (38.5 percent), which was about three times greater than the next highest strata. Imperial County had the highest proportion in 2013-2014 as well, but the proportion of Spanish interviews was even higher for Imperial County in that cycle (51.8 percent).

In the landline sample, there were 940 adult interviews conducted in an Asian language, up slightly from the 878 adult interviews conducted in an Asian language in 2013-2014. The overall proportion of all adult interviews conducted in an Asian language in 2015-2016 (2.4 percent) was slightly lower than 2013-2014 (2.8 percent). The highest RDD proportions of Asian language adult interviews were in the San Francisco stratum (4.6 percent), followed by Santa Clara (3.7 percent), and then Alameda (18 percent). Among all samples, the Korean surname list sample (28.2 percent) had the highest proportion of adult interviews conducted in an Asian language.

See Table 7-2 in *CHIS 2015-2016 Methodology Series: Report 4—Response Rates* for more on numbers of interviews conducted by language.

6.2 Length of Interview

Table 6-11 presents mean administration times across all samples for the four questionnaires – screener, adult, child, and adolescent – by language for CHIS 2015-2016, CHIS 2013-2014, and CHIS 2011-2012. For all languages combined, mean administration times for the 2015-2016 questionnaires were somewhat longer in 2015-2016 compared to 2013-2014, except for the adolescent interview which was about 40 seconds shorter on average.

Table 6-10. Number of adult interviews completed by language and sample/landline sample stratum

Stratum	Sampling stratum	English	Spanish	Korean	Chinese	Tagalog	Vietnamese	Total	Percentage Spanish	Percentage Asian
1	LOS ANGELES	2,154	292	7	11	5	8	2,477	11.8%	1.3%
2	SAN DIEGO	1,502	124	1	2	3	2	1,634	7.6%	0.5%
3	ORANGE	664	32	2	2	0	9	709	4.5%	1.8%
4	SANTA CLARA	382	8	1	4	1	9	405	2.0%	3.7%
5	SAN BERNARDINO	443	29	0	0	0	1	473	6.1%	0.2%
6	RIVERSIDE	780	52	0	0	1	0	833	6.2%	0.1%
7	ALAMEDA	376	7	0	6	0	1	390	1.8%	1.8%
8	SACRAMENTO	465	5	1	2	2	0	475	1.1%	1.1%
9	CONTRA COSTA	339	11	0	1	0	0	351	3.1%	0.3%
10	FRESNO	278	22	0	0	0	0	300	7.3%	0.0%
11	SAN FRANCISCO	125	0	0	4	1	1	131	0.0%	4.6%
12	VENTURA	318	26	0	0	0	1	345	7.5%	0.3%
13	SAN MATEO	199	6	0	1	0	0	206	2.9%	0.5%
14	KERN	262	27	0	0	1	0	290	9.3%	0.3%
15	SAN JOAQUIN	146	11	0	0	1	0	158	7.0%	0.6%
16	SONOMA	189	4	0	0	0	0	193	2.1%	0.0%
17	STANISLAUS	176	15	0	0	0	0	191	7.9%	0.0%
18	SANTA BARBARA	181	7	0	0	0	0	188	3.7%	0.0%
19	SOLANO	197	6	0	0	3	0	206	2.9%	1.5%
20	TULARE	189	27	0	0	0	0	216	12.5%	0.0%
21	SANTA CRUZ	207	16	0	0	1	0	224	7.1%	0.4%
22	MARIN	464	6	0	0	0	1	471	1.3%	0.2%
23	SAN LUIS OBISPO	192	3	0	0	0	0	195	1.5%	0.0%
24	PLACER	203	1	0	0	0	0	204	0.5%	0.0%
25	MERCED	155	17	0	0	0	0	172	9.9%	0.0%
26	BUTTE	188	2	0	0	0	0	190	1.1%	0.0%
27	SHASTA	207	1	0	0	0	0	208	0.5%	0.0%
28	YOLO	189	5	0	0	0	0	194	2.6%	0.0%

(continued)

Table 6-10. Number of adult interviews completed by language and sample/landline sample stratum (continued)

Stratum	Sampling stratum	English	Spanish	Korean	Chinese	Tagalog	Vietnamese	Total	Percentage Spanish	Percentage Asian
29	EL DORADO	224	1	0	0	0	0	225	0.4%	0.0%
30	IMPERIAL	142	89	0	0	0	0	231	38.5%	0.0%
31	NAPA	228	12	0	0	0	0	240	5.0%	0.0%
32	KINGS	227	30	0	0	3	0	260	11.5%	1.2%
33	MADERA	197	13	0	0	0	0	210	6.2%	0.0%
34	MONTEREY	168	18	3	0	0	0	189	9.5%	1.6%
35	HUMBOLDT	218	1	0	0	0	0	219	0.5%	0.0%
36	NEVADA	239	1	0	0	0	0	240	0.4%	0.0%
37	MENDOCINO	193	10	0	0	0	0	203	4.9%	0.0%
38	SUTTER	199	10	0	0	0	0	209	4.8%	0.0%
39	YUBA	218	3	0	0	0	0	221	1.4%	0.0%
40	LAKE	216	0	0	0	0	0	216	0.0%	0.0%
41	SAN BENITO	217	22	0	0	0	0	239	9.2%	0.0%
42	TEHAMA, ETC	138	13	0	0	0	0	151	8.6%	0.0%
43	DEL NORTE, ETC	164	0	0	0	0	0	164	0.0%	0.0%
44	TUOLUMNE, ETC	175	3	0	0	0	0	178	1.7%	0.0%
	TOTAL LANDLINE	14,333	988	15	33	22	33	15,424	6.4%	0.7%
	CELL SAMPLE	17,738	2,494	46	65	24	79	20,446	12.2%	1.0%
	KOREAN LIST	1,262	10	153	206	0	141	1,772	0.6%	28.2%
	VIETNAMESE LIST	3,220	165	11	37	4	121	3,558	4.6%	4.9%
	JAPANESE LIST	597	33	0	0	0	1	631	5.2%	0.2%
	IMPERIAL COUNTY ABS	153	105	0	0	0	0	258	40.7%	0.0%
	TOTAL	37,303	3,795	225	341	50	375	42,089	9.0%	2.4%

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

Table 6-11. Median administration times (in minutes), relative times, and sample sizes for CHIS 2015-2016, 2013-2014 and 2011-2012 instruments by language of administration

	CHIS 2015-2016				CHIS 2013-2014				CHIS 2011-2012			
	N	Median	Mean	Ratio to English	N	Median	Mean	Ratio to English	N	Median	Mean	Ratio to English
Screener												
All Languages	80,378	2.61	3.02		77,306	2.50	2.18		81,175	2.25	2.59	
English	68,938	2.53	2.90	1.00	65,661	2.35	2.08	1.00	66,717	2.15	2.44	1.00
Spanish	9,409	3.09	3.59	1.22	9,371	3.29	2.92	1.40	11,428	2.87	3.31	1.36
Vietnamese	678	3.79	4.27	1.50	646	3.11	2.93	1.32	1,205	2.95	3.20	1.31
Korean	474	3.04	3.44	1.20	569	3.42	3.12	1.46	997	3.00	3.15	1.29
Chinese (2015) Cantonese (pre-2015)	804	3.96	4.42	1.57	471	4.01	3.55	1.71	417	3.20	3.46	1.42
Mandarin					526	3.45	3.04	1.47	411	3.10	3.53	1.45
Tagalog	75	4.48	5.03	1.77	62	3.41	3.23	1.45	N/A			
Adult Interview												
All Languages	42,089	37.45	38.73		39,625	35.92	33.60		42,673	33.17	35.28	
English	37,303	36.53	37.65	1.00	35,170	34.42	32.65	1.00	36,720	32.18	33.86	1.00
Spanish	3,795	46.68	47.38	1.28	3,282	49.64	47.97	1.44	4,342	45.10	46.96	1.39
Vietnamese	375	46.84	47.90	1.28	397	32.80	31.82	0.95	649	30.65	31.95	0.94
Korean	225	41.23	41.24	1.13	300	44.24	42.52	1.29	523	35.47	35.50	1.05
Chinese (2015) Cantonese (pre-2015)	341	50.22	50.48	1.37	190	53.31	49.48	1.55	201	40.53	41.52	1.23
Mandarin					259	46.97	44.27	1.36	238	43.43	45.82	1.35
Tagalog	50	57.55	56.50	1.58	27	47.25	46.4	1.37	N/A			

(continued)

Table 6-11. Mean administration times (in minutes), relative times, and sample sizes for CHIS 2015-2016, 2013-2014 and 2011-2012 instruments by language of administration (continued)

	CHIS 2015-2016				CHIS 2013-2014				CHIS 2011-2012			
	N	Median	Mean	Ratio to English	N	Median	Mean	Ratio to English	N	Median	Mean	Ratio to English
Child Interview												
All Languages	4,293	17.14	17.47		5,470	16.34	15.43		7,337	14.1	14.97	
English	3,376	16.61	16.91	1.00	4,228	15.29	14.67	1.00	5,357	13.25	13.85	1.00
Spanish	866	19.41	19.41	1.17	1,119	20.11	19.48	1.32	1,764	17.52	18.24	1.32
Vietnamese	25	21.90	21.33	1.32	53	15.61	15.13	1.02	130	14.21	15.57	1.12
Korean	5	14.65	15.31	0.88	23	18.45	17.78	1.21	48	14.88	15.35	1.11
Chinese (2015) Cantonese (pre-2015)	19	22.76	22.00	1.37	24	22.77	20.19	1.49	12	16.87	18.57	1.34
Mandarin					22	17.62	17.28	1.15	26	17.77	18.15	1.31
Tagalog	2	24.17	24.17	1.46	1	13.98	13.98	0.91	N/A			
Adolescent Interview												
All Languages	1,594	20.90	21.66		2,238	22.86	22.31		2,800	22.25	22.99	
English	1,447	20.64	21.46	1.00	2,136	22.69	22.17	1.00	2,598	21.93	22.64	1.00
Spanish	142	22.98	23.62	1.11	92	26.59	26.32	1.17	183	26.77	27.61	1.22
Vietnamese	3	23.61	23.31	1.14	4	24.11	23.38	1.06	8	26.01	26.14	1.15
Korean	0			0.00	3	24.2	27.37	1.07	5	24.33	24.98	1.10
Chinese (2015) Cantonese (pre-2015)	1			0.00	0				2	25.99	25.99	1.15
Mandarin					0				4	25.82	25.53	1.13
Tagalog	1			0.00	3	26.39	26.47	1.16	N/A			

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

The mean administration time for the English adult extended interview was exactly 5 minutes longer in 2015-2016 than 2013-2014 at 38.73 minutes. The ratio of mean adult interview administration time relative to English decreased for Spanish, Korean, and Cantonese language interviews in 2015-2016. This ratio increased for two languages – Vietnamese (from 0.95 to 1.28) and Tagalog (from 1.37 to 1.58).

The child interview, with an overall mean length of 17.47 minutes, was just over 2 minutes longer in 2015-2016 than in 2013-2014. The ratios for other languages compared to English followed the same pattern of increases and decreases as the adult interviews. The ratio of mean adult interview administration time relative to English decreased for Spanish, Korean, and Cantonese language interviews in 2015-2016. This ratio increased for two languages – Vietnamese (from 1.02 to 1.32) and Tagalog (0.91 to 1.46).

The shorter adolescent interview (21.6 minutes across all languages) in 2015-2016 also followed the same pattern of relative administration times as the adult and child interviews for two languages, Spanish and Vietnamese. The ratio of mean adolescent interview administration time relative to English decreased for Spanish language interviews but increased for Vietnamese language interviews. Only a few adolescent interviews were conducted in Vietnamese in both cycles and no adolescent interviews were conducted in Korean, Chinese, or Tagalog in 2015-2016.

6.3 Detailed Results for the 2016 Northern Imperial County Oversample

UCLA received funding to supplement the CHIS 2015-2016 sample in the northern part of Imperial County for quarter 4 in 2016. Because the targeted geography included several sparsely-populated communities, UCLA and RTI agreed that the most efficient approach to this oversample was to use an address-based sample (ABS), rather than an RDD sample. The design for this oversample included:

- Selecting a sample of addresses in the targeted communities in northern Imperial County;
- Attempting to matching as many of the addresses as possible to telephone numbers;
- Sending a mailed advance letter to addresses with a matched telephone number;
- Sending a mailed advance letter and a returnable household information form to addresses without a matched telephone number, with the purpose of obtaining one or more telephone numbers associated with the residents of these addresses;
- Loading telephone numbers for addresses initially matched from databases and those received later via returned household information forms into CATI; and

- Attempting to obtain telephone interviews through outbound and inbound calls following the same protocol as interviews for the RDD and list samples of telephone numbers;
- Conducting in-person visits to a portion of addresses without a matched telephone numbers, with the purpose of obtaining one or more telephone numbers associated with the residents of these addresses via a household information form or encouraging residents at these addresses to call the toll-free number to complete the screening interview.

The ABS supplement comprised an initial sample of 4,180 addresses in northern Imperial County. As shown in screening results in Table 6-12, 2,556 (61 percent) of these sample addresses were matched to telephone numbers. The remaining 1,624 addresses were sent a household information form along with the advance letter, as an attempt to obtain one more phone numbers for these cases. A portion of the unmatched addresses were also visited in-person by local nursing students and Imperial County Department of Public Health staff organized by the Imperial County Department of Public Health, to attempt to obtain a household information form with one or more phone numbers and to encourage residents at these addresses to call the toll-free number to complete the screening interview. A total of 500 sampled households complete the screening interview, 343 from the matched sample and 157 from the unmatched sample, as shown in Table 6-12. Given the ABS method used, nearly all sampled households were eligible to complete the adult interview and, when appropriate the child and adolescent interviews. Cooperation rates for completing the screener were significantly higher for the unmatched sample (86.3 percent) than the matched sample (63.6 percent). This outcome likely resulted from more of the unmatched cases returning a household information form by mail, providing a household information form to an in-person recruiter, or calling the toll-free number to complete the screener. This smaller set of sample members were likely more cooperative residents compared to those with matched addresses who were not visited by in-person recruiters and contacted via outbound calls from RTI.

Table 6-13 shows results for the adult interviews, by source and type of sample, for northern Imperial County ABS oversample. A total of 256 adult interviews were completed, 164 from the matched sample and 92 from the unmatched sample. Consistent with the cooperation rates for the screening interview, the cooperation rate for the adult interview was higher for the unmatched sample (93.9) than the matched sample (84.3 percent). A relevant factor to this observed difference is that the refusal rate was higher in the matched sample (9.0 percent) than in the unmatched sample (3.8 percent).

Table 6-14 shows results for child interviews, by source and type of sample, which included 31 completed interviews. The majority of the child interviews (21) came from the smaller unmatched

sample. This outcome seems likely due to households with children being more likely to only have cell service and, therefore, their cell numbers cannot be matched to their addresses like landline numbers.

Likewise, Table 6-15 shows results for adolescent interviews, by source and type of sample. Only 12 adolescent interviews were completed from this sample, 8 from the matched sample and 4 from the unmatched sample. More than three times as many adolescents were sample from the matched sampled (39) compared to the unmatched sample (12), but parental permission was not obtained for a higher proportion of the matched cases (79.5 percent) than the unmatched cases (66.7 percent). This variation could simply result from the unique characteristics of this the small sample of households with adolescents.

Table 6-12. Results of CHIS 2015-2016 data collection for Imperial County ABS sample, screening interview, by source and type of sample

	MATCHED			UNMATCHED			TOTAL		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
NUMBERS AVAILABLE TO BE CALLED	2,556			1,624			4,180		
CS – COMPLETED SCREENER (C)	**343**		**13.4%**	**157**		**9.7%**	**500**		**12.0%**
Ineligible(I)									
IS – INELIGIBLE SCREENER; NO ELIGIBLE ADULTS	0	0.0%		1	100.0%		1	50.0%	
OTHER INELIGIBLE SCREENER	1	100.0%		0	0.0%		1	50.0%	
Total Ineligible	**1**		**0.0%**	**1**		**0.1%**	**2**		**0.0%**
Out of Scope									
NR – NON-RESIDENTIAL PHONE NUMBER	42	3.9%		3	6.4%		45	4.0%	
NW – NON-WORKING PHONE NUMBER	1,032	96.1%		44	93.6%		1,076	96.0%	
Total Out of Scope	**1,074**		**42.0%**	**47**		**2.9%**	**1,121**		**26.8%**
Noncontact									
NA – NO CONTACT AFTER TIME SLICES FILLED	226	36.5%		1,229	94.2%		1,455	75.7%	
NM – NO CONTACT –ANSWERING MACHINE	393	63.5%		75	5.8%		468	24.3%	
Total Noncontact	**619**		**24.2%**	**1,304**		**80.3%**	**1,923**		**46.0%**
Refusal (R)									
R3 – FINAL REFUSAL – RECEIVED 3 OR MORE 2S	31	15.7%		2	8.0%		33	14.9%	
RB – FINAL REFUSAL	166	84.3%		23	92.0%		189	85.1%	
RM – REFUSAL MAXIMUM CALL LIMIT	0	0.0%		0	0.0%		0	0.0%	
RX – RE-RELEASED RB MAX CALL LIMIT	0	0.0%		0	0.0%		0	0.0%	
Total Refusal	**197**		**7.7%**	**25**		**1.5%**	**222**		**5.3%**
Other Nonresponse									
LH – HEARING AND SPEECH PROBLEM	0	0.0%		0	0.0%		0	0.0%	
LM – LANGUAGE PROBLEM MAX CALLS	0	0.0%		0	0.0%		0	0.0%	
LP – FINAL LANGUAGE PROBLEM	4	1.2%		0	0.0%		4	1.0%	
MC – MAXIMUM CALLS	132	41.0%		36	40.0%		168	40.8%	
ML – MAX CALLS – LANGUAGE PROB IN HH	0	0.0%		0	0.0%		0	0.0%	
NO – OTHER NON-RESPONSE	186	57.8%		54	60.0%		240	58.3%	
Total Other Nonresponse	**322**		**12.6%**	**90**		**5.5%**	**412**		**9.9%**
ELIGIBILITY RATE (C / (C+I))			99.7%			99.4%			99.6%
COOPERATION RATE ((C+I) / (C+I+R))			63.6%			86.3%			69.3%

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

Table 6-13. Results of CHIS 2015-2016 data collection for Imperial County ABS sample, adult interview, by source and type of sample

	MATCHED			UNMATCHED			TOTAL		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CA – COMPLETED ADULT EXTENDED	164	98.8%		92	100.0%		256	99.2%	
CP – ADULT PARTIAL COMPLETE FINISHED	2	1.2%		0	0.0%		2	0.8%	
Total Completed Interviews	**166**		**48.4%**	**92**		**58.6%**	**258**		**51.6%**
Ineligible(I)									
IO – INELIGIBLE OUT OF STATE	0	0.0%		0	0.0%		0	0.0%	
Total Ineligible	**0**		**0.0%**	**0**		**0.0%**	**0**		**0.0%**
Refusal (R)									
R3 – FINAL REF, 3 OR MORE REFUSALS	1	3.2%		0	0.0%		1	2.7%	
RM – REF REACHED MAXIMUM CALL LIMIT	30	96.8%		6	100.0%		36	97.3%	
Total Refusal	**31**		**9.0%**	**6**		**3.8%**	**37**		**7.4%**
Other Nonresponse									
MC – MAXIMUM CALLS	59	40.4%		24	40.7%		83	40.5%	
NF – NOT AVAILABLE IN FIELD PERIOD	1	0.7%		2	3.4%		3	1.5%	
NO – OTHER NON-RESPONSE	81	55.5%		33	55.9%		114	55.6%	
NS – SUBJECT SICK/INCAPACITATED	5	3.4%		0	0.0%		5	2.4%	
Total Other Nonresponse	**146**		**42.6%**	**59**		**37.6%**	**205**		**41.0%**
TOTAL	**343**			**157**			**500**		
ELIGIBILITY RATE (C / (C+I))			100.0%			100.0%			100.0%
COOPERATION RATE (C / (C+R))			84.3%			93.9%			87.5%

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

Table 6-14. Results of CHIS 2015-2016 data collection for Imperial County ABS sample, child interview, by source and type of sample

	MATCHED			UNMATCHED			TOTAL		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CC – COMPLETED CHILD EXTENDED	**10**		**33.3%**	**21**		**60.0%**	**31**		**47.7%**
Ineligible (I)									
IO – INELIGIBLE OUT OF STATE	0	0.0%		0	0.00%		0	0.00%	
Total Ineligible	**0**		**0.0%**	**0**		**0.0%**	**0**		**0.0%**
Refusal (R)									
RB – OTHER FINAL REFUSAL	0	0.0%		1	100.00%		1	100.00%	
Total Refusal	**0**		**0.0%**	**1**		**2.9%**	**1**		**1.5%**
Other Nonresponse									
MC – MAX CALLS THIS INTERVIEW	3	15.0%		5	38.46%		8	24.24%	
NO – OTHER NON-RESPONSE	17	85.0%		8	61.54%		25	75.76%	
Total Other Nonresponse	**20**		**66.7%**	**13**		**37.1%**	**33**		**50.8%**
TOTAL	**30**			**35**			**65**		
ELIGIBILITY RATE (C / (C+I))			100.0%			100.0%			100.0%
COOPERATION RATE (C / (C+R))			100.0%			95.5%			96.9%

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

Table 6-15. Results of CHIS 2015-2016 data collection for Imperial County ABS sample, adolescent interview, by source and type of sample

	MATCHED			UNMATCHED			TOTAL		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews (C)									
CT – COMPLETED ADOLESCENT EXTENDED	**8**		**100.0%**	**4**		**100.0%**	**12**		**100.0%**
Other Nonresponse									
MC – MAXIMUM CALLS	0	0.0%		0	0.0%		0	0.0%	
MR – MAX CALLS – REFUSAL IN HH	0	0.0%		0	0.0%		0	0.0%	
Total Other Nonresponse	**0**		**0.0%**	**0**		**0.0%**	**0**		**0.0%**
TOTAL	**8**			4			12		
ADOLESCENTS SAMPLED	39			12			51		
PERMISSION NOT RECEIVED	31		79.5%	8		66.7%	39		76.5%
COMBINED COMPLETION RATE (C / SAMPLED)			20.5%			33.3%			23.5%

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

6.4 Experiments to Improve Child and Adolescent Interview Yield in 2016

To attempt to boost child and adolescent interview yield, experiments were conducted in phase 1 of quarter 3 and phase 1 of quarter 4 in 2016. In these experiments, we identified all cases at that point in phase 1 where the screener indicated the presence of an eligible child or adolescent, but no interviews were yet completed. For adolescent interviews, parental permission for the adolescent could have also been pending. We randomly assigned half of all child and adolescent cases to a rest period of one week where these cases were not called by interviews. The other half of the cases were called by interviews during this week, following standard calling procedures. After this week, a week of intense calling to all pending child and adolescent interview cases was conducted to ensure all cases (rested or not) received an appropriate number of calls during these "push" weeks.

At the end of data collection week 4 in phase 1 of quarter 3 2016, we identified 262 eligible cases containing 310 children and adolescents. (Among the adolescent cases, eligibility was conditional on having a completed adult interview.) Similarly, at the end of data collection week 4 in phase 1 of quarter 4 2016, we identified 205 eligible cases with 234 child and adolescents. During data collection week 5 – July 18 through 24 in quarter 3 and October 9 through 16 in quarter 4 – a random half of each set of eligible child and adolescent cases was placed on hold, while the other half remained on the normal calling schedule. Data collection week 6 – July 25 through 31 in quarter 3 and October 17 through 23 in quarter 4 – was then designated child and adolescent push week where interviewer effort was focused on resolving pending child and adolescent interview cases.

Overall, the quarter 3 and quarter 4 of 2016 push weeks combined yielded 101 child and 34 adolescent interviews, as shown in Table 6-16. Most of the child interviews completed came from newly identified cases during the push weeks. That is, most child interviews were completed with cases for which screener information was not available at the end of week 4 and, therefore, these cases had not been included in the experiment. As Table 6-17 indicates, resting cases for one week prior to the push week did not appear to increase the overall likelihood of obtaining an interview.

The combined quarter 3 and quarter 4 of 2016 results did not show a positive effect from the resting cases for a week before initiating the intensive push week calling effort. A post-hoc hypothesis that could explain this results is the difference in calling effort exerted for the quarter 3 and quarter 4 cases prior to the rest week. Overall, quarter 4 cases had about 40 percent more calls by the end of data collection week 4 compared to quarter 3 cases at the same point in data collection. The smaller quarter 4 sample fielded allowed for more frequent calls in the same number of data collection weeks because

interviewing hours were not significantly decreased in the first four weeks of quarter 4. Given this consideration, future experiments to improve child and adolescent interview yields could be launched when the average effort on cases reaches a maximum of three calls, instead of implementing the experiment during a predetermined data collection week.

Table 6-16. Child and Adolescent Interviews by Status and Week of Data Collection, Phase 1 Quarter 3 and Phase 1 Quarter 4, 2016

Interview	Status	Number of Interviews during Push Week
Q3 Child	Identified for Push Week	22
	Newly Identified	53
Q4 Child	Identified for Push Week	6
	Newly Identified	20
Total Child Interviews		**101**
Q3 Adolescent	Identified for Push Week	14
	Newly Identified	16
Q4 Adolescent	Identified for Push Week	2
	Newly Identified	2
Total Adolescent Interviews		**34**

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

Table 6-17. Child and Adolescent Interviews by Treatment and Weeks of Data Collection, Phase 1 Quarter 3 and Phase Quarter 4, 2016

			Respondents			
Interview	Treatment	Nonrespondents	Rest Week	Push Week	After Push	Total Respondents
Q3 Child	rested	66	2*	13	6	21
	not rested	58	7	9	0	16
Q4 Child	rested	56	5*	1	4	10
	not rested	49	6	5	1	12
Q3 Adolescent	rested	58	3*	8	3	14
	not rested	66	1	6	4	11
Q4 Adolescent	rested	54	1*	0	0	1
	not rested	48	0	2	3	5

Source: UCLA Center for Health Policy Research, 2015-2016 California Health Interview Survey.
*Cases with callback appointments set

7. RESPONSIVE DESIGN ELEMENTS

Responsive design is based on the premise that uncertainties during data collection necessitate design flexibility—the *optimal* design is not known prior to data collection, but changes of certain design features during data collection based on predetermined rules and phases allow us to better achieve the survey's objectives (Groves and Heeringa, 2006). In the 2015-2016 CHIS data collection, responsive design with adaptive design features was employed to minimize the risk of nonresponse bias, reduce nonresponse rates, increase the number of interviews in key sample domains, and maximize cost efficiency. This approach incorporated the five main design components described in this section.

7.1 A Two-phase Design with Double Sampling for Nonresponse

In two-phase designs, nonresponding cases from the first phase (phase 1) are subsampled for the next phase (phase 2), in which a more effective protocol is employed. This approach facilitates reducing nonresponse rates and the potential for nonresponse bias without the cost burden of applying the costlier protocol to the full sample. The protocol used in phase 2 was designed to appeal to sample members underrepresented in phase 1. The CHIS protocol used the same data collection method, but offered doubled incentives. We allowed the duration of each phase to vary, based on changes in interview rates and number of hours per interview, but on average, as shown in Table 7-1, phase 1 lasted 12 weeks, and phase 2 lasted 5 weeks. (phase 2 data collection periods are indicated by shaded rows). The second phase was successful in gaining participation among those who were underrepresented. For example, phase 2 yielded average increases in quarterly goals of 4 percentage points for child interviews and 3.7 percentage points for adolescent interviews. In addition, approximately one-third of the unweighted adult interview response rate is due to the inclusion of the second phase in the design, but only about one in 10 adult respondents were interviewed in phase 2 with the higher incentive amounts.

Table 7-1. Sample Release Dates for CHIS 2015-2016

Year	Quarter	Release	Sample	Date of Sample Release	Phase 2 End
2015	Pilot	1	Cell	4/30/2015	
2015	Pilot	1	Landline	4/30/2015	
2015	2	1	Cell	5/21/2015	
2015	2	1	Matched and Unmatched Landline	5/21/2015	
2015	3	1	Cell	6/18/2015	
2015	3	1	Unmatched Landline	6/18/2015	
2015	3	1	Matched Landline	7/6/2015	
2015	3	2	Cell	7/14/2015	
2015	3	2	Unmatched Landline	7/14/2015	
2015	3	2	Matched Landline	7/27/2015	
2015	3	1	NRFU-Matched Landline (Phase 2)	10/12/2015	11/15/2015
2015	3	1	NRFU-Unmatched Landline (Phase 2)	9/23/2015	11/15/2015
2015	3	1	NRFU-Cell (Phase 2)	9/23/2015	11/15/2015
2015	3	2	NRFU-Asian Language Cell (Phase 2)	12/10/2015	12/31/2015
2015	3	2	NRFU-Asian Language Unmatched Landline (Phase 2)	12/10/2015	12/31/2015
2015	3	2	NRFU-Asian Language Matched Landline (Phase 2)	12/14/2015	12/31/2015
2015	4	1	Cell	8/24/2015	
2015	4	1	Unmatched Landline	9/6/2015	
2015	4	1	Matched Landline	9/14/2015	
2015	4	Marin	Cell	9/9/2015	
2015	4	Marin	Unmatched Landline	9/11/2015	
2015	4	Marin	Matched Landline	10/12/2015	
2015	4	2	Cell	10/22/2015	
2015	4	2	Cell	10/30/2015	
2015	4	2	Unmatched Landline	11/3/2015	
2015	4	2	Unmatched Landline	11/6/2015	
2015	4	2	Landline	11/20/2015	
2015	4	2	Landline	11/12/2015	
2015	4	1	NRFU-Matched Landline (Phase 2)	1/22/2016	2/14/2016
2015	4	1	NRFU-Unmatched Landline (Phase 2)	1/8/2016	2/14/2016
2015	4	1	NRFU-Cell (Phase 2)	1/8/2016	2/14/2016
2016	1	1	Cell & Unmatched Landline	1/4/2016	
2016	1	1	Matched Landline	1/15/2016	

(continued)

Table 7-1. Sample Release Dates for CHIS 2015-2016 (continued)

Year	Quarter	Release	Sample	Date of Sample Release	Phase 2 End
2016	1	1	NRFU Cell & Unmatched Landline (Phase 2)	3/30/2016	4/27/2016
2016	1	1	NRFU Matched Landline (Phase 2)	4/11/2016	5/7/2016
2016	2	1	Cell & Unmatched Landline	3/28/2016	
2016	2	1	Matched Landline	4/4/2016	
2016	2	1	NRFU Cell & Unmatched Landline (Phase 2)	6/22/2016	7/20/2016
2016	2	1	NRFU Matched Landline (Phase 2)	7/5/2016	8/2/2016
2016	3	1	Cell & Unmatched Landline	6/20/2016	
2016	3	1	Matched Landline	6/20/2016	
2016	3	1	NRFU Cell & Unmatched Landline (Phase 2)	9/16/2016	10/30/2016
2016	3	1	NRFU Matched Landline (Phase 2)	9/27/2016	10/30/2016
2016	4	1	Main Cell & Unmatched Landline	9/12/2016	
2016	4	1	Main Matched Landline	9/12/2016	
2016	4	1	Supplemental 1 Cell & Unmatched Landline	10/10/2016	
2016	4	1	Supplemental 1 Matched Landline	10/10/2016	
2016	4	1	Supplemental 2 Cell & Unmatched Landline	10/31/2016	
2016	4	1	Supplemental 2 Matched Landline	10/31/2016	
2016	4	1	NRFU Release 1 Cell & Unmatched Landline (Phase 2)	11/10/2016	12/11/2016
2016	4	1	NRFU Release 1 Matched Landline (Phase 2)	11/22/2016	12/22/2016
2016	4	1	NRFU Release 2 Cell & Unmatched Landline (Phase 2)	11/29/2016	12/22/2016
2016	4	1	NRFU Release 2 Matched Landline (Phase 2)	11/29/2016	12/22/2016

Phase 2 sampling rates and selection are described in the following section. For weighting procedures related to the two-phase design, see *CHIS 2015-2016 Methodology Series: Report 5 — Weighting and Variance Estimation* posted at http://healthpolicy.ucla.edu/chis/design/Pages/methodology.aspx.

7.2 Varying the Phase 2 Subsampling Rates

In the 2015-2016 CHIS, we varied the subsampling rates across groups defined by paradata to further increase the number of interviews, and particularly from child, adolescent, and Korean language

interviews. To design more efficient nonresponse follow-up, we identified 4 strata in each frame – screener not complete, no contact; screener not complete, other; screener complete, adult only selected, and screener complete, child and/or adolescent selected. We also used implicit stratification by geographically-based strata. In most quarters, we applied disproportionate sampling across strata, using two sampling rates – 50 percent for the strata with complete screener, and 35 percent for those where screener was not completed. About 12 percent of all interviews across quarters came from phase 2.

Towards the end of data collection, we pulled out as separate strata language groups that needed more attention and manipulated the sampling fraction for counties that had already achieved the target number of interviews (sampled at a decreased rate) and those that were running behind (sampled at a higher rate). Table 7-2 presents the phase 2 selection rate by stratum and quarter of data collection. For sampling procedures related to the two-phase design, see *CHIS 2015-2016 Methodology Series: Report 1 —Sample Design*.

Table 7-2. Phase 2 Selection Rate by Strata and Data Collection Quarter

Stratum	Time in Data Collection					
	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Screener not complete/no contact	0.35	0.35	0.38	0.35	0.35	0.25
Screener not complete/other	0.35	0.35	0.38	0.35	0.35	0.25
Screener complete/adult only	0.5	0.5	0.6	0.5	0.5	0.5
Screener complete/child and/or adolescent	0.5	0.5	0.6	0.5	0.5	0.5
Korean Language Records	n/a	n/a	n/a	n/a	1	n/a
Korean Surname List	n/a	n/a	n/a	n/a	0.5	n/a
Non-Korean Language/ Ventura Unlisted Landline	n/a	n/a	n/a	n/a	0.25	n/a
High Performing Strata (5,12,17,21,27,38,42)	n/a	n/a	n/a	n/a	n/a	0.25
Low Performing Strata (1,3,4,7,35,40,44)	n/a	n/a	n/a	n/a	n/a	1

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

7.3 Interactive Case Management

This essential feature of the CHIS design addresses the inefficiency associated with the high rates of nonworking telephone numbers in RDD surveys. In quarter 4, 2015 for the first time we tested whether excluding low propensity cases from calling at the end of phase 1 would reduce the number of

calls to unproductive cases, allowing interviewers to refocus effort to cases more likely to yield an interview. We implemented logistic regression models using paradata such as whether the sample case has been contacted, the number and type of prior contact attempts, completed screener, prior refusal and stratum, to estimate the likelihood that it would lead to a successful interview. In quarter 1, 2016, two additional predictors were added to the model – cell wins flag for the call phone frame, and an address flag, as we wanted to explore the possibility of implementing the stopping rules earlier than week 9 of data collection. Half of the cases with extremely low estimated response propensities were randomly selected and placed on hold for the remaining weeks of phase 1 data collection in all quarters, except the very first and last quarters of data collection (quarter 3, 2015 and quarter 4, 2016). Table 7-3 presents when in phase 1 the experiment was implemented, propensity thresholds for each frame, below which cases were eligible to be placed on hold, and the percent of cases in each sample placed on hold.

Indeed, calls to the cases in the control low propensity condition were found to be futile—the number of calls to yield an interview ranged from 348 to 1,100 across samples. For example, in quarter 1, 2016, it took 747 calls to produce 1 interview in the cell sample control condition, and even more - 1,100 calls to produce 1 interview in the landline sample control condition. The number of calls per interview was consistently lower across all quarters for the treatment condition (stopped low propensity cases) relative to the control condition for both samples. The interactive case management improved the efficiency of data collection allowing interviewing hours to be focused on numbers that were more likely to yield an interview. Given its success in quarter 4, 2015 and quarter 1, 2016, we reduced the size of the control condition starting with quarter 2, 2016 (from a 1/2-1/2 split to 1/3-2/3 split) and implemented more liberal thresholds, as can be seen in Table 2. All cases placed on hold during phase 1 were eligible for non-response follow-up in phase 2.

Table 7-3. Phase 1 Case Prioritization Elements by Quarter of Data Collection

	Implementation Week	Prioritization Rules	Percent Cases on Hold
Q4 2015	9	0.05 for landline	8% landline
Q1 2016	8	0.0025 for landline 0.001 for cell	7% landline 7% cell
Q2 2016	8	0.0075 for landline 0.0025 for cell	23% landline 11% cell
Q3 2016	8	0.005 for landline 0.005 for cell	23% landline 19% cell

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

Table 7-4 presents the interview rates after the intervention by quarter of data collection and experimental condition. In addition to looking at number of calls per interview and the number of saved calls to futile cases, we wanted to see that we were not losing interviews by placing low propensity cases on hold and redirecting effort to other cases. We examined interview rates for the control and treatment conditions before and after the intervention – a successful experiment would have shown no difference in interview rates. Indeed, we found that after the intervention, the interview rate was not significantly different between the control and treatment conditions in both samples, across quarters. These results suggest redirecting effort from low propensity cases works well and we would not lose interviews by not calling such cases.

Table 7-4. Interview Rates after the Intervention by Quarter of Data Collection and Experimental Condition

		Q4 2015	Q1 2016	Q2 2016	Q3 2016
Landline	Control any	0.4%	1.9%	1.8%	1.1%
	Treatment any	0.3%	1.9%	1.5%	0.9%
Cell	Control any	n/a	1.2%	1.0%	1.4%
	Treatment any	n/a	1.0%	1.0%	1.4%

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

7.4 Responsive and Adaptive Design (RAD) Questions as Indicators of Nonresponse Bias

Nonresponse to the main interview could be an important source of nonresponse bias, as about half of the adults selected in the screener do not complete the interview in phase 1, and just over three-quarters do not complete it in phase 2. More importantly, this is one source of nonresponse bias that we can estimate and control. Toward this goal, we used CHIS 2013-2014 data to identify one person-level

question (presence of any medical conditions) and one household-level question (anyone enrolled in Medi-Cal) to be added to the screener to track estimates of nonresponse bias among those who completed the screener. The variables were selected among a set of CHIS 2013-2014 Adult interview variables, strongly associated with key survey measures.

Contrary to expectations, lower propensity cases provide higher levels of measurement error in the responses to the RAD questions, resulting in a correlation between nonresponse and measurement error that could have yield misleading results if used to identify cases that should receive greater effort to reduce bias. The RAD questions were an important part of the responsive design, but this finding has identified the need to develop measurement error adjustments for these questions to use them as originally intended (Peytcheva et al., 2016a; 2016b).

An important change to the CHIS screener took place at the end of 2015 and affected the person-level RAD question. The screener instrument was originally programmed to fully enumerate a household, collecting information on adult, child and adolescent demographic characteristics and making it possible to select a child and/or adolescent, without first completing an adult interview. The change implemented in December 2015 streamlined the screener instrument and made it more similar to the 2013-2014 version, where the rostering of children[6] and adolescents occurred in section G of the adult instrument. For this reason, the RAD person level question related to medical conditions for each selected respondent was only asked for the selected adult.

7.5 Child and Adolescent Interview "Push" Weeks

This intensified effort to target child and adolescent interviews was first implemented in 2016 quarter 3 phase 1 data collection and then repeated in quarter 4 phase 1. A description of these experiments and the results are provided in Section 6.4.

[6] An exception to this change was the child first protocol – see Section 2.1 of this report.

8. QUALITY CONTROL

RTI's quality control procedures were in place throughout the study. Some of them, such as CATI testing and interviewer training, were used before data collection began as preventive quality controls. Others, such as supplemental interviewer training, monitoring, and problem sheet review were used during data collection to respond to issues with interviewers or to adjust the questionnaires. Interviewer training is described in Chapter 4. Each of the other quality control method is briefly described below.

8.1 Computer-Assisted Telephone Interview Testing

Quality control of the survey questionnaires began with development of specifications for CATI programming. RTI's management system for CATI specifications tracked question text, sequencing, response categories, and the appropriate use of "fills" within questions based upon previously recorded information, and range and logic checks. The CATI specification document, provided the guide for project staff and programmers as to what the CATI instrument should include. The system tracked each change to the specifications and the reason for that change, whether it originated from UCLA or RTI project staff. At some points during the design period, changes were programmed directly into CATI, and the specification database was updated later to reflect what was administered.

Once programming commenced, quality control continued with testing to make sure that the CATI instrument was working according to the specifications. The questions and skip patterns were tested as soon as the questionnaires were programmed, as was the database used to store the captured responses. This testing included review by RTI project staff (including programmers, ROC staff, data collection staff, and data analysts), UCLA, and PHI.

After the pilot test and then again during the first months of the statewide field period, the data preparation and programming staffs reviewed frequency counts from each instrument to make sure that the CATI program was performing correctly and all responses and administrative data were being stored in the appropriate variable fields.

8.2 Real-time Range and Logic Checking

Another method of quality control involved the use of simulated data produced by the CATI system. The data was then subjected to a series of range checks to catch unlikely or impossible responses and to catch errors that might result from typographical errors by interviewers. Each check had defined

ranges with minimum and maximum values. For example, there were checks to ensure that a child's reported height and weight were within appropriate ranges for the units (metric or English/avoirdupois) the interviewer had specified. Some of these edits were added during the field period.

The edits included both soft and hard ranges. "Hard-range" checks do not allow the interviewer to continue without entering an answer within the range programmed, while "soft-range" checks merely require an interviewer to confirm an unlikely entry. In the rare situations where a respondent insisted on an answer that violated a hard-range check, the interviewer entered "Don't know" for the response to the item and wrote a comment describing the situation that was later reviewed by data preparation staff.

Other edits checked logic between responses. For example, if a respondent 65 years of age or older reported not being covered by Medicare, a verification question appeared on the CATI screen.

8.3 Interviewer Memoranda

As discussed in Chapter 4, interviewer memoranda were given to the staff to clarify and reinforce issues, as well as to inform staff of procedural changes. A total of 13 memoranda were distributed to interviewers.

8.4 Interviewer Monitoring

RTI monitored telephone interviewer performance throughout the field period, including live monitoring and monitoring of recorded interviews. Any interviewers who were identified as in need of additional monitoring were monitored more heavily in the following week. Team leaders also performed additional monitoring if there was concern about an interviewer's performance.

RTI's capacity to monitor telephone interviewers is based on an investment in highly sophisticated equipment and electronic linkages. Team leaders and monitors intercepted calls and silently listened to both the interviewer and the respondent, either from the ROC or remote locations. At the same time, the team leader could see what appeared on the interviewer's computer screen and the responses that the interviewer entered. Team leaders simultaneously checked on interviewing technique and the interviewer's ability to correctly capture data.

Team leaders performed extra monitoring if there was a concern about an interviewer's performance. An interview monitoring report form was completed each time an interviewer was monitored. Interviewers who continued to have significant problems after receiving feedback or remedial training were released from the study.

During the first weeks following completion of training, the results of monitoring were discussed with each interviewer immediately following the monitoring session. This discussion provided feedback to the interviewer and suggestions to improve his or her techniques to gain cooperation, ask questions, or record responses. Subsequent reports were only reviewed with an interviewer if there was a specific problem, in which case the report was discussed immediately. Team leaders reviewed the monitoring reports throughout the survey period to identify any common problems that might have revealed the need for additional interviewer-wide training.

8.5 Case Triage

Interviewing during all hours of ROC operation is supported by specially trained team leaders. Team leaders were called whenever a problem interfered with the ability to conduct CATI interviewing. When the team leader received a problem report, he or she diagnosed the problem and called the appropriate personnel. Hardware, software, and project-specific support were always available via home or cell telephones. The appropriate support personnel responded to problems within minutes of a problem report, regardless of the time of day.

8.6 Using Comments and Problem Sheets to Find Problems

Interviewers made comments within the CATI questionnaire whenever a response did not fit a category and/or when they perceived a problem with a question. With input from UCLA and PHI, some of these comments were used to update data. Data updates and other data preparation issues are discussed in detail in *CHIS 2015-2016 Methodology Series: Report 3 — Data Processing Procedures*.

Comments were also used as indicators of difficulties with the questionnaire. If there were many comments about a specific item, it potentially indicated that a question needed to be changed or reinforced with an interviewer memorandum or a meeting.

Problem sheets were also used for quality control. When interviewers or team leaders encountered a problem in conducting or monitoring an interview, they completed a CATI problem sheet. These sheets were reviewed by a triage team leader and forwarded to the appropriate staff member for resolution. Any problems that suggested a change to the questionnaire were discussed with the UCLA project director.

9. REFERENCES

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Appendix A – CHIS 2015-2016 Mid-Administration Changes to Extended Interviews

Exhibit A-1. CHIS 2015-2016 Mid-Administration Changes—Adult Extended Interview

Variable	Question/Note Text and Change Description
Section C	
AC32	*"Now think about the past 12 months. Over that time, did you have any kind of alcoholic drink?"* Deleted question on 1/11/2016
AC34	*"In the past 12 months, about how many times did you have 5 or more alcoholic drinks in a single day?"* Deleted question on 1/11/2016
AC35	*"In the past 12 months, about how many times did you have 4 or more alcoholic drinks in a single day?"* Deleted question on 1/11/2016
AC46	*During the past month, how often did you drink sweetened fruit drinks, sports, or energy drinks?* Deleted question on 1/11/2016
AC47	*"Count one cup or 8 ounces as one glass."* Added interviewer note defining what counts as a glass of water on 5/18/2015
AC47	*"Yesterday, how many glasses of water did you drink at work, home, and everywhere else? Count one cup as one glass and count one bottle of water as two glasses. Count only a few sips, like from a water fountain, as less than one glass. Your best guess is fine."* Deleted question on 1/11/2016
AC48	*"Yesterday, how many glasses of nonfat or low-fat milk did you drink? Do not include 2% milk or whole milk."* Deleted question on 10/19/2015
AC53	*"How long has it been since you smoked on a daily basis?"* Added question on 1/11/2016
AC54	*"{On days when you smoke, how/How} soon after you awake do you usually smoke your first cigarette?"* Added question on 1/11/2016
AC58	*"Do you usually smoke menthol or non-menthol cigarettes?"* Added question on 1/11/2016
AC59	*"During the past 12 months, how many times have you tried to quit smoking for one day or longer?"* Added question on 1/11/2016
AC60	*"There are many products called Nicotine Replacement Therapy or NRT that replace nicotine to help people quit smoking. {The last time you tried to quit / In the past 12 months}, did you use a nicotine patch?"* Added question on 1/11/2016
AC68	*"{The last time you tried to quit, did you try / In the past 12 months, have you done} any of the following to help you quit smoking? Did you…"* Added question on 1/11/2016
AC69	*"[{The last time you tried to quit / In the past 12 months}] did you Quit completely on your own or "cold turkey"?"* Added question on 1/11/2016
AC72	*"[{The last time you tried to quit / In the past 12 months}] did you exercise more to help you quit smoking?"* Added question on 1/11/2016
AC75	*"[{The last time you tried to quit / In the past 12 months}] did you call a telephone quitting helpline?"* Added question on 1/11/2016
AC77	*"In the past 12 months, did a doctor or other health professional advise you to quit smoking?."* Added question on 1/11/2016
AC78	*In the past 12 months, did a doctor or other health professional refer you to, or give you information about, a smoking cessation program?"* Added question on 1/11/2016
AC79	*"Have you ever smoked a Hookah pipe?"* Added question on 1/11/2016
AC81	*"Have you ever smoked electronic cigarettes, also known as e-cigarettes or vaporizer cigarettes?"* Deleted on 1/11/2016
AC81B	*"Have you ever used any type of e-cigarette, vape pen or e-hookah, such as Blu, NJOY, or Vuse, or any larger devices for vaping, sometimes called vapes, tanks or mods?"* Added question on 1/11/2016

AC82	*"During the past 30 days, how many days did you use electronic cigarettes?"* Deleted on 1/11/2016
AC82B	*"During the past 30 days, on how many days did you use electronic cigarettes?"* Added question on 1/11/2016
AC83	*"What are your reasons for using electronic cigarettes?"* Deleted on 1/11/2016
AC83B	*"What best describes your reasons for using e-cigarettes?"* Added question on 1/11/2016
AC84B	*"What are the current rules or restrictions about smoking inside your home? Would you say…"* Added question on 1/11/2016
AC92	*"How much additional tax on a pack of cigarettes would you be willing to support if all the money raised was used to fund programs aimed at preventing smoking among children, and other health care programs? Would you support a tax increase of…"* Added question on 1/11/2016
AC101	*"Did you quit smoking within the last 2 years?"* Added question on 1/11/2016
AC102	*"How many months ago did you quit?"* Added question on 1/11/2016
AC103	*"Do you plan to quit in the next month?"* Added question on 1/11/2016
AC104	*"{The last time you tried to quit / In the past 12 months}, did you use nicotine gum, nicotine lozenges, or a nicotine inhaler?"* Added question on 1/11/2016
AC105	*"There are prescription medications to help people quit smoking cigarettes. {The last time you tried to quit / In the past 12 months}, did you use Zyban, Wellbutrin, Bupropion, Prozac, Chantix or Varenicline?"* Added question on 1/11/2016
AC106	*"[{The last time you tried to quit attempt/ In the past 12 months}] did you use technology such as an app, texting or quitting website?"* Added question on 1/11/2016
AC107	*"[{The last time you tried to quit attempt/ In the past 12 months}] did you Use social media such as Facebook, Instagram, Twitter, or WhatsApp?"* Added question on 1/11/2016
AC108	*"During the past 30 days how many days did you use a hookah?"* Added question on 1/11/2016
AC109	*"How long ago did you start using e-cigarettes regularly?"* Added question on 1/11/2016
AC110	*"Where do you usually buy your e-cigarettes or e-liquid?"* Added question on 1/11/2016
AC111	*"During the day you last used an electronic nicotine product, how many puffs did you take?"* Added question on 1/11/2016
AC112	*"What concentration or strength of nicotine is in the liquid or cartridge you typically use with your e-cigarette? For example, is it zero nicotine, 3, 6, 12, or 24 milligrams per milliliter, or some other concentration?"* Added question on 1/11/2016
AC113	*"What are the current rules or restrictions about using E-CIGARETTES (vaping) inside your home? Would you say…"* Added question on 1/11/2016
AC114	*"Do you agree or not with the following statement: The use of e-cigarettes should not be allowed in the places where cigarette smoking is not allowed?"* Added question on 1/11/2016
AD32	*"IF R SAYS, A "PACK", CODE AS 20 CIGARETTES"* Added TI note clarifying that a pack equals 20 cigarettes on 5/18/2015
Section G	
AG21	*"In what languages are the TV shows, radio stations, or newspapers that you usually watch, listen or read?"* Deleted question on 1/11/2016
AH43A	*"IF R MENTIONS IN-LAWS, CODE AS YES"* Added interviewer note about in-laws on 7/28/2015
Section H	
AH49	*"Is your MediCARE coverage provided through an HMO?"* Deleted question on 6/25/2015
AH50	*"What is the name of your MediCARE HMO plan?"* Deleted question on 6/25/2015

AH123	*"Is this a MediCARE Advantage Plan?"* Added question on 6/25/2015
AH126	*"For the {MediCARE Advantage plan/MediCARE Supplement plan}, did you sign up directly, or did you get this insurance through a current employer, a former employer, a union, a family business, AARP, or some other way?"* Added question on 6/25/2015
Section J	
AJ78	*"During the past 12 months, did you phone or e-mail the doctor's office with a medical question?"* Deleted question on 10/19/2015
AJ79	*"How often did you get an answer as soon as you needed it? Would you say…"* Deleted question on 10/19/2015
AJ80	*"Is there anyone at your doctor's office or clinic who helps coordinate your care with other doctors or services such as tests or treatments?"* Deleted question on 10/19/2015
AJ81	*"Was this prescription for your asthma?"* Deleted question on 10/19/2015
AJ82	*"Was this prescription for your diabetes?"* Deleted question on 10/19/2015
AJ83	*"Was this prescription for your heart disease?"* Deleted question on 10/19/2015
AJ84	*"Was this medical care for your asthma?"* Deleted question on 10/19/2015
AJ85	*"Was this medical care for your diabetes?"* Deleted question on 10/19/2015
AJ86	*"Was this medical care for your heart disease?"* Deleted question on 10/19/2015
AJ110	*"How confident are you that you can fill out an application on-line on your own? Would you say you are…"* Deleted question on 10/19/2015
AJ111	*"If you wanted to fill out an application on-line, is there someone who could help you with it?"* Deleted question on 10/19/2015
Section K	
AK7M	*"IF LESS THAN 1 MONTH BUT MORE THAN 0 DAYS, ENTER 1 MONTH"* Added interviewer note on how to code cases less than one month on 6/30/2015

Exhibit A-2. CHIS 2015-2016 Mid-Administration Changes—Child Extended Interview

Variable	Question Text and Description
Section A	
CA52	"*During the past 12 months, has (CHILD) had to visit a hospital emergency room because of {his/her} (INSERT CONDITION(S) 4-91 FROM QC15_A26)?"* Deleted question on 1/11/2016
CA53	*"Did you take (CHILD) to a hospital emergency room for {his/her} (INSERT CONDITION(S) 4-91 FROM QC15_A26) because you were unable to see {his/her} doctor?"* Deleted question on 1/11/2016
CA54	*"During the past 12 months, was {he/she} admitted to the hospital overnight or longer for {his/her} (INSERT CONDITION(S) 4-91 FROM QC15_A26)?"* Deleted question on 1/11/2016
Section C	
CC10	*"Now I'm going to ask you about the foods your child ate yesterday, including meals and snacks. Yesterday, how many glasses or boxes of 100% fruit juice, such as orange or apple juice did (CHILD) drink?"* Deleted question on 1/11/2016
CC47	*"Does (CHILD)'s school usually serve students fast food made by restaurants like McDonald's, Burger King, Taco Bell, or Pizza Hut?"* Deleted question on 1/11/2016
CC48	*"{During a typical week, how many times does/During the past week, how many times did} (CHILD) eat the lunch served in the school cafeteria?"* Deleted question on 1/11/2016
Section D	
CD34	*"During the past 12 months, did you phone or e-mail the doctor's office with a medical question about (CHILD)?"* Deleted question on 1/11/2016
CD35	"*How often did you get an answer as soon as you needed it? Would you say..."* Deleted question on 1/11/2016
CD36	*"Is there anyone at (CHILD's) doctor's office or clinic who helps coordinate {his/her} care with other doctors or services such as tests or treatments?"* Deleted question on 1/11/2016
CD37	*"Was this prescription for {his/her} asthma?"* Deleted question on 1/11/2016
CD38	*"Was this prescription for {his/her} (INSERT CONDITION(S) FROM QC15_A26)?"* Deleted question on 1/11/2016
CD39	*"Was this medical care for {his/her} asthma?"* Deleted question on 1/11/2016
CD40	*"Was this medical care for {his/her} (INSERT CONDITION(S) FROM QC15_A26)?"* Deleted question on 1/11/2016
Section H	
CH3	Added TI note clarifying how to code "Native American" on 5/18/2015
Section K	
KAH49	Deleted question on 6/25/2015
KAH50	Deleted question on 6/25/2015
KAH52	Deleted question on 6/25/2015
KAH61	Deleted question on 6/25/2015

Exhibit A-3. CHIS 2015-2016 Mid-Administration Changes—Adolescent Extended Interview

Variable	Question Text and Description
Section C	
TC55	"Y*esterday, how many glasses of nonfat or low-fat milk did you drink? Do not include 2% milk or whole milk."* Deleted question on 1/11/2016
TC56	*"Yesterday, how many cups of coffee or tea with sugar or honey added did you drink? Do not include drinks with things like Splenda or Equal. Include pre-sweetened tea and coffee drinks such as Arizona Iced Tea and Frappuccino."* Deleted question on 1/11/2016
TC58	*"Yesterday, how many glasses of 100% fruit juice, such as orange or apple juice, did you drink?"* Deleted question on 1/11/2016
Section D	
TE57	*"{During the school year, do you take/Are you currently taking} PE at school?"* Deleted question on 1/11/2016
Section H	
TI15	*"During the past 12 months, did you or a parent phone or e-mail the doctor's office with a medical question?"* Deleted question on 1/11/2016
TI16	*"How often did you get an answer as soon as you needed it? Would you say…"* Deleted question on 1/11/2016
TI17	*"Is there anyone at your doctor's office or clinic who helps coordinate your care with other doctors or services, such as tests or treatments?"* Deleted question on 1/11/2016
TI19	*"Was this prescription for your asthma?"* Deleted question on 1/11/2016
TI20	*"Was this medical care for your asthma?"* Deleted question on 1/11/2016
Section J	
TI2	*"{You said you are Latino or Hispanic. Also,} Please tell me which one or more of the following you would use to describe yourself: Would you describe yourself as Native Hawaiian, Other Pacific Islander, American Indian, Alaska Native, Asian, Black, African American, or White?"* Added TI note on how to code "Native American" on 5/18/2015

Appendix B – CHIS 2015-2016 Advance Letter in English

Dear California Resident,

UCLA is conducting a study called the California Health Survey. This important telephone survey collects information on the health of people in California and about issues they have getting health care. The results may help people and families in your community.

Your household has been selected for this year's California Health Survey. Your household is part of a scientific sample representing many other households like yours. Since 2001, more than 400,000 Californians have talked to us about many different health topics.

RTI International is the nonprofit organization selected to help UCLA conduct this study. An interviewer from RTI will be calling sometime in the next two weeks and one adult in your household will be selected for the interview. The interviewer will first ask a few general questions and then may ask you or another adult in your household to complete the rest of the interview. If you have a teenager (ages 12-17), we may ask to interview one teen after receiving permission from a parent. Participation is voluntary and strictly confidential. Your answers will be combined with other participants and used only for statistical reporting.

Please share this information with others in your household. We are not selling anything or asking for money. To thank you in advance, we are enclosing a $2 bill. This small gift is for you to keep whether or not you decide to participate (this money is not from State or local taxes).

If you have questions about the California Health Survey, you can call toll-free **1-877-475-7016** or visit our website at **www.californiahealthsurvey.org**.

Your help is very important to this study's success. Thank you for your cooperation.

Sincerely,

Dr. Ninez Ponce
Principal Investigator, California Health Survey

Major funders of this survey include the California Department of Health Care Services (DHCS), DHCS Mental Health Services Division, California Department of Public Health, California Health Benefit Exchange, First 5 California, The California Endowment, California HealthCare Foundation, and Kaiser Permanente.

Relevant to Privacy Act Information, the legislative authority for this survey is 42 USC 285.