california health interview survey

Report Two

CHIS 2005 Methodology Series

Data Collection Methods

CALIFORNIA HEALTH INTERVIEW SURVEY

CHIS 2005 METHODOLOGY SERIES

REPORT 2

DATA COLLECTION METHODS

APRIL 2007

This report was prepared for the California Health Interview Survey by Sherman Edwards, Susan Fraser, John Rauch, Dave Martin, and Norm Brautigam of Westat.

www.chis.ucla.edu

This report describes how data were collected for CHIS 2005. It was a telephone survey using a random digit dialing (RDD) sample, as well as list samples from different sources to augment the yield for certain racial and ethnic groups. All data were collected using a computer-assisted telephone interviewing (CATI) system. Activities included under "data collection" for purposes of this report include Westat involvement in developing and programming the survey instruments, recruiting and training interviewers to administer the survey in five 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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PREFACE

Data Collection Methods is the second in a series of methodological reports describing the 2005 California Health Interview Survey (CHIS 2005). The other reports are listed below. A similar set of reports is available for CHIS 2001 and CHIS 2003.

CHIS is a collaborative project of the University of California, Los Angeles (UCLA) Center for Health Policy Research, the California Department of Health Services, and the Public Health Institute. Westat was responsible for the data collection and the preparation of five methodological reports from the 2001 survey. The survey examines public health and health care access issues in California. The CHIS telephone survey is the largest state health survey ever undertaken in the United States. The plan is to monitor the health of Californians and examine changes over time by conducting periodic surveys in the future.

Methodological Reports

The first five methodological reports for CHIS 2003 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.

This report describes how data were collected for CHIS 2005. It was a telephone survey using a random digit dialing (RDD) sample, as well as list samples from different sources to augment the

yield for certain racial and ethnic groups, and a computer-assisted telephone interviewing (CATI) system. The purposes of this report are:

- To serve as a reference for researchers using CHIS 2005 data;
- To document data collection procedures so that future iterations of CHIS, or other similar surveys, can replicate those procedures if desired;
- To describe lessons learned from the data collection experience and make recommendations for improving future surveys; and
- To evaluate the level of effort required for the various kinds of data collection undertaken.

Activities included under "data collection" for purposes of this report include Westat's involvement in developing and programming the survey instruments, recruiting and training interviewers to administer the survey in five 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. Special analyses using administrative data from the CATI system inform the purposes above at the RDD stratum and individual supplemental sample levels.

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1 CHIS 2005 DESIGN AND METHODOLOGY SUMMARY

1.1 Overview

The California Health Interview Survey (CHIS) is a population-based random-digit dial telephone survey of California's population conducted every other year since 2001. CHIS is the largest health survey conducted in any state and one of the largest health surveys in the nation. CHIS is based at the UCLA Center for Health Policy Research and is conducted in collaboration with the California Department of Health Services and the Public Health Institute. 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 to meet and optimize two goals:

i) provide estimates for large- and medium-sized counties in the state, and for groups of the smallest counties (based on population size), and

ii) provide statewide estimates for California's overall population, its major racial and ethnic groups, as well as several ethnic subgroups.

The CHIS sample is representative of California's non-institutionalized population living in households.

This series of reports describes the methods used in collecting data for CHIS 2005, the third CHIS data collection cycle, which was conducted between July 2005 and April 2006. The previous CHIS cycles (2001 and 2003) are described in similar series, available at http://www.chis.ucla.edu/methods_main.html.

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. The data are widely 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.

1.2 Sample Design Objectives

To achieve the sample design objectives stated above, CHIS employed a multi-stage sample design. First, the state was divided into 44 geographic sampling strata, including 41 single-county strata and three multi-county strata comprised of the 17 remaining counties. Second, within each geographic stratum, residential telephone numbers were selected through random-digit dial (RDD) sampling, 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 were randomly selected; the adolescent was interviewed directly, and the adult most knowledgeable about the child's health completed the child interview.

Table 1-1 shows the 44 sampling strata for CHIS 2005. A sufficient number of adult interviews were allocated to each stratum to support the first sample design objective. The geographic stratification of the state was revised from the design used in previous CHIS cycles, increasing the number of individual counties from 33 to 41.

Table 1-1. California county and county group strata used in the CHIS 2005 sample design

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

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

The samples in Marin, Humboldt, and Solano Counties were enhanced with additional funding. Additional samples were also selected statewide and in San Diego County to increase the number of child interviews; telephone numbers selected in these two additional samples were screened to identify households with children ages 0 to 11. All supplemental samples were implemented with and incorporated into the original statewide RDD sample.

The main RDD CHIS sample size is sufficient to accomplish the second objective. To increase the precision of estimates for Koreans and Vietnamese, areas with relatively high concentrations of these groups were sampled at higher rates. These geographically targeted oversamples were supplemented by telephone numbers associated with group-specific surnames drawn from listed telephone directories to further increase the sample size for Koreans and Vietnamese.

1.3 Data Collection

To capture the rich diversity of the California population, interviews were conducted in five languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, and Korean. These languages were chosen based on analysis of 2000 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.

Westat, a private firm that specializes in statistical research and large-scale sample surveys, conducted the CHIS 2005 data collection under contract with the UCLA Center for Health Policy Research. Westat staff interviewed one randomly selected adult in each sampled household, and sampled one adolescent and one child if present in the household and the sampled adult was the parent or legal guardian. Up to three interviews could have been completed in each sampled household. In households with children where the sampled adult was not the screener respondent, 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 new for CHIS 2005 and substantially increased the yield of child interviews. While numerous subsequent attempts were made to complete the adult interview, there were completed child and/or 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 2005 by the type of sample (RDD or supplemental sample).

Table 1-2. Number of completed CHIS 2005 interviews by type of sample and instrument

Type of sample	Adult	Child	Adolescent
Total RDD + supplemental cases	43,020	11,358	4,029
RDD			
Base plus county supplements	41,074	9,605	3,739
Statewide child supplement	525	511	84
San Diego child supplement	1,143	1,160	186
Supplemental samples:			
Korean	199	60	14
Vietnamese	79	22	6

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

Interviews in all languages were administered using Westat's computer-assisted telephone interviewing (CATI) system. The average adult interview took 35 minutes to complete. The average child and adolescent interviews took 15 minutes and 20 minutes, respectively. For "child-first" interviews, additional household information asked as part of the child interview averaged almost 8 minutes. Interviews in non-English languages generally took longer to complete. Just over 10 percent of the adult interviews were completed in a language other than English, as were 18 percent of all child (parent proxy) interviews and 7 percent of all adolescent interviews.

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

1.4 Response Rates

The overall response rate for CHIS 2005 is a composite of the screener completion rate (i.e., success in introducing the survey to a household and randomly selecting an adult to be interviewed) and the extended interview completion rate (i.e., success in getting one or more selected persons to complete the extended interview). To maximize the response rate, especially at the screener stage, an advance letter in five languages was mailed to all sampled telephone numbers for which an address could be obtained from reverse directory services. An advance letter was mailed for approximately 67 percent of the sampled telephone numbers. In CHIS 2005, for the first time a $2 bill was included with the advance letter to promote cooperation. CHIS 2005 also included methodological experiments to test the effects on response of the incentive and different advance letter treatments.

Table 1-3. CHIS 2005 survey topic areas by instrument

Health status	**Adult**	**Teen**	**Child**
General health status, height and weight	✓	✓	✓
Days missed from school due to health problems	✓	✓	✓
Health conditions	**Adult**	**Teen**	**Child**
Asthma	✓	✓	✓
Diabetes	✓	✓	
Heart disease, high blood pressure, epilepsy	✓		
Physical disability/need for special equipment	✓		
Parental concerns with child development, attention deficit disorder (ADD)			✓
Mental health	**Adult**	**Teen**	**Child**
Mental health status	✓		✓
Perceived need, use of mental health services	✓		✓
Emotional functioning		✓	
Health behaviors	**Adult**	**Teen**	**Child**
Dietary intake	✓	✓	✓
Physical activity and exercise	✓	✓	✓
Walking for transportation and leisure	✓		
Sedentary time		✓	✓
Body image		✓	
Flu Shot	✓		
Alcohol and tobacco use	✓	✓	
Drug use		✓	
Sexual behavior, STD testing, birth control practices	✓	✓	
Women's health	**Adult**	**Teen**	**Child**
Pap test screening, mammography screening, hormone replacement therapy	✓		
Emergency contraception		✓	
Pregnancy status	✓	✓	
Cancer history and prevention	**Adult**	**Teen**	**Child**
Cancer history of respondent and family history	✓		
Colon cancer screening, prostrate cancer (PSA) test	✓		
Dental health	**Adult**	**Teen**	**Child**
Last dental visit			✓
Dental insurance coverage		✓	✓
Injury	**Adult**	**Teen**	**Child**
Serious injuries (frequency, cause)		✓	✓
Injury prevention behaviors (bike helmets, seatbelts)		✓	

Table 1-3. CHIS 2005 survey topic areas by instrument (Continued)

Food insecurity/hunger	**Adult**	**Teen**	**Child**
Availability of food in household over past 12 months	✓		

Food environment	**Adult**	**Teen**	**Child**
Quality of food stores in area, where does teen/child eat lunch and breakfast		✓	✓
School has vending machines		✓	

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, tests, treatment)	✓	✓	✓
Racial/ethnic discrimination in health care, MD discussed diet and exercise	✓		
Communication problems with doctor	✓	✓	✓
Ability and parental knowledge of teen contacting a doctor		✓	

Health insurance	**Adult**	**Teen**	**Child**
Current insurance coverage, spouse's coverage, who pays for coverage	✓	✓	✓
Health plan enrollment, characteristics of plan	✓	✓	✓
Whether employer offers coverage, respondent/spouse eligibility	✓		
Coverage over past 12 months	✓	✓	✓
Reasons for lack of insurance	✓	✓	✓

Public program eligibility	**Adult**	**Teen**	**Child**
Household poverty level	✓		
Program participation (TANF, CalWorks, Public Housing, Food Stamps, SSI, SSDI, WIC)	✓	✓	✓
Assets, alimony/child support/social security/pension	✓		
Eligible for Medi-Cal and healthy families	✓	✓	✓
Reason for Medi-Cal nonparticipation among potential eligibles	✓	✓	✓

Neighborhood and housing	**Adult**	**Teen**	**Child**
Neighborhood safety	✓	✓	
Home ownership, number of rooms, amount of mortgage/rent	✓		

Parental involvement/adult supervision	**Adult**	**Teen**	**Child**
Parental presence after school, parental knowledge of teen's activities		✓	
Child's activities with family			✓

Table 1-3. CHIS 2005 survey topic areas by instrument (Continued)

Child care and school attendance	Adult	Teen	Child
Current child care arrangements			✓
Paid child care	✓		
First 5 California: receipt of parent kit and attitudes towards preschool			✓
Preschool/school attendance, public/private school		✓	✓

Employment	Adult	Teen	Child
Employment status, spouse's employment status	✓		
Work in last week, industry and occupation	✓		
Hours worked at all jobs	✓	✓	

Income	Adult	Teen	Child
Respondent's and spouse's earnings last month before taxes	✓		
Household income (annual before taxes)	✓		
Number of persons supported by household income	✓		

Respondent characteristics	Adult	Teen	Child
Age, gender, height, weight, education	✓	✓	✓
Race and ethnicity	✓	✓	✓
Marital status	✓		
Sexual orientation	✓	✓	
Citizenship, immigration status, country of birth, length of time in U.S., languages spoken at home, English language proficiency	✓	✓	✓

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

The CHIS 2005 screener completion rate was 49.8 percent and was higher for households that were sent the advance letter. The extended interview completion rate varied across the adult, child and adolescent interviews. Multiplying the screener and extended rates gives an overall response rate for each type of interview. At the household level, the percentage of households completing one or more of the extended interviews (adult, child, and/or adolescent) is a useful summary of the overall success of the study. For CHIS 2005, the household response rate was 29.5 percent (the product of the screener response rate and the completion rate at the household level of 59.3 percent). The 2005 survey is the first time that a household response rate has been reported because in earlier cycles the adult interview had to be completed before the child or the adolescent interview (i.e., the household rate equaled the adult rate). The adult extended completion rate for 2005 was 54.0 percent, resulting in an overall adult response rate of 26.9 percent for adults. All of the household and person level response rates vary by sampling stratum.

For more information about the CHIS 2005 response rates, please see *CHIS 2005 Methodology Series: Report 4 – Response Rates*.

The CHIS response rate is comparable to response rates of other scientific telephone surveys in California, such as the 2005 California Behavioral Risk Factor Surveillance System (BRFSS) Survey with an overall response rate of 29.2 percent. California as a whole and the state's urban areas in particular, are among the most difficult parts of the nation in which to conduct telephone interviews. Survey response rates tend to be lower in California than nationally, and over the past decade response rates have been declining both nationally and in California.

One way to judge the representativeness of a population survey is to "benchmark" its results against those of other reliable data sources. The CHIS 2001 and 2003 samples yielded unweighted and weighted population distributions and rates that are comparable to those obtained from other sources. The demographic characteristics of the CHIS 2001 sample (such as race, ethnicity, and income) were very similar to those obtained from 2000 Census data. CHIS 2001 respondents also had health characteristics and behaviors that were very similar to those found in other extensively used surveys, such as the California BRFSS. The UCLA Center for Health Policy Research is conducting an extensive benchmarking project for CHIS data.

Adults who completed at least approximately 80 percent of the questionnaire (i.e., through Section J on Health Care Utilization and Access), after all follow-up attempts were exhausted to complete the full questionnaire, were counted as "complete." At least some items in the employment and income series or public program eligibility and food insecurity series are missing from those cases that did not complete the entire interview.

Proxy interviews were allowed for frail and ill persons over the age of 65 who were unable to complete the extended adult interview in order to avoid biases for health estimates of elderly persons that might otherwise result. Eligible selected persons were recontacted and offered a proxy option. For 139 elderly adults, a proxy interview was completed by either a spouse/partner or adult child. A reduced questionnaire, with questions identified as appropriate for a proxy respondent, was administered. (Note: questions not administered in proxy interviews are given a value of "-2" in the data files.)

1.5 Weighting the Sample

To produce population estimates from the CHIS data, weights are applied to the sample data to compensate for the probability of selection and a variety of other factors, some directly resulting from the design and administration of the survey. The sample is weighted to represent the non-institutionalized population for each sampling stratum and statewide. The weighting procedure used for CHIS 2005 accomplishes the following objectives:

- Compensate for differential probabilities of selection for households and persons;
- 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; and
- Reduce the variance of the estimates by using auxiliary information.

As part of the weighting process, a household weight was created for all households that completed the screener interview. This household weight is the product of the "base weight" (the inverse of the probability of selection of the telephone number) and a variety of adjustment factors. The household weight is used to compute a person-level weight, which includes adjustments for the within-household sampling of persons and nonresponse. The final step is to adjust the person-level weight using a raking method so that the CHIS estimates are consistent with population control totals. Raking is an iterative procedure that forces the CHIS weights to sum to known totals from an independent data source. The procedure requires iteration to make sure all the control totals, or raking dimensions, are simultaneously satisfied within a specified tolerance.

Population control totals of the number of persons by age, race, and sex at the stratum level for CHIS 2005 were created primarily from the California Department of Finance's 2004 Population Estimates and 2005 Provisional Population Estimates. The raking procedure used 11 raking 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), household composition (presence of children and adolescents in the household), and socio-economic variables (home ownership and education). The socio-economic variables are included to reduce biases associated with excluding households without landline telephones from the sample frame. One limitation

of using Department of Finance 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). These persons were excluded from the CHIS sample and as a result, the number of persons living in group quarters was estimated and removed from the Department of Finance control totals prior to raking.

1.6 Imputation Methods

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

Two different imputation procedures were used by Westat to fill in missing responses for items essential for weighting the data. The first imputation technique was a completely random selection from the observed distribution of respondents. This method was used only for a few variables when the percentage of the items missing was very small. The second technique was hot deck imputation without replacement. The hot deck approach is probably the most commonly used method for assigning values for missing responses. With a hot deck, a value reported by a respondent for a particular item is assigned or donated to a "similar" person who did not respond to that item. The characteristics defining "similar" vary for different variables. To carry out hot deck imputation, the respondents to an item form a pool of donors, while the nonrespondents are a group of recipients. A recipient is matched to the subset pool of donors based on household and individual characteristics. A value for the recipient is then randomly imputed from one of the donors in the pool. Once a donor is used, it is removed from the pool of donors for that variable. Hot deck imputation was used to impute the same items in CHIS 2003 and CHIS 2005 (i.e., race, ethnicity, home ownership, and education).

The UCLA Center for Health Policy Research imputed missing values for nearly every variable in the data files other than those handled by Westat and some sensitive variables in which nonresponse had its own meaning. Overall, item nonresponse rates in CHIS 2005 were modest, with most variables missing valid responses for less than 2% of the sample. However, there were a few exceptions where item nonresponse rate was greater than 20%, such as household income.

The imputation process conducted by UCLA 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, hierarchical sequential hot-deck imputation with donor replacement was used. This method replaces a missing value for one respondent using a valid response from another respondent with similar characteristics as defined by a set of control variables. The control variables were ranked in order from the most to the least important. This procedure allowed control variables to be dropped if certain conditions (such as the minimum number of donors) were not met. The control variables were dropped sequentially, starting from the variable ranked least important. Once a responding case was used as a donor, it was dropped from the donor pool preventing using one donor multiple times.

Control variables always included the following: gender, age group, race/ethnicity, poverty level (based on household income), educational attainment, and region. Other control variables were also used depending on the nature of the imputed variables. Among the control variables, gender, age, race/ethnicity and regions were imputed by Westat. Household income and educational attainment were imputed first in order to impute other variables. Household income, for example, was imputed using the hot-deck method within ranges from a set of auxiliary variables such as income range and/or poverty level.

The imputation order of the other variables followed the questionnaire. After all imputation was done, logical checks and edits were performed once again to ensure consistency between the imputed and nonimputed values on a case-by-case basis.

1.7 Methodology Report Series

A series of five methodology reports is available with more detail about the methods used in CHIS 2005:

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 www.CHIS.ucla.edu or contact CHIS at CHIS@ucla.edu.

2 SCREENING INTERVIEW AND CATI INSTRUMENT STRUCTURE

CHIS 2005 interviews could include, for a given household, up to three substantive questionnaire sections: the adult, child, and adolescent extended questionnaires. In addition to the substantive survey content, the 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. All of these functions were programmed into the CATI instrument and are described in this chapter.

2.1 Basic Initial Screening Interview

The CHIS 2005 sample was composed of telephone numbers selected as described in *CHIS 2005 Methodology Series: Report 1 – Sample Design*. On first contact with a sampled telephone number, interviewers needed to:

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

These basic elements were scripted into the initial screening interview for each sample (RDD and list). As in CHIS 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)[1] was based on the number of adults reported as follows:

- If one adult, that adult was selected;
- If two adults, either the screener respondent or the other adult was randomly selected, with probability equal to 0.5; or

[1] Rizzo, L, Brick, J.M., & Park, I. (2004). A Minimally Intrusive Method for Sampling Persons in Random Digit Dialing Surveys. *Public Opinion Quarterly, 68*, 267-274.

- If three or more adults, the screener respondent was randomly selected with probability equal to one over the number of adults, or else the other adult with the most recent birthday was selected.

If the screener respondent did not know the birthdays of other adults, the interviewer then enumerated the other adults, and one was randomly selected.

In previous CHIS cycles, the screening interview did not include an enumeration of adolescents and children. For CHIS 2005, once an adult was sampled, the screening interview could include enumeration and sampling of children and adolescents under the following circumstances:

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

This change was implemented to increase the number of completed child interviews. If these conditions were not met, children and adolescents were enumerated as part of the adult extended interview as in previous CHIS cycles. The "child-first" protocol is described further in the next section

The following elements were included in the initial screener to assist in developing survey weights:

- The number of children under 12 years of age living in the household;
- The number of adolescents between 12 and 17 years of age living in the household; and
- The number and use (home, business) of telephone numbers ringing into the household.

2.2 Initial Screening Interview for Supplemental Samples

As described in *CHIS 2005 Methodology Series: Report 1 – Sample Design*, CHIS 2005 included ethnic supplemental list samples of Koreans and Vietnamese. For telephone numbers selected in these samples, the initial screening interview included an additional question to determine whether a household included one or more individuals of the target ethnic group:

Do any of these adults who live in your household consider themselves to be (ETHNICITY) or of (ETHNICITY) descent?

Also, a part of the statewide RDD sample and a larger part of the San Diego County RDD sample were designated to enhance the achieved sample of children. The screening question for this portion of the sample was the number of children under age 12 in the household.

2.3 Overall Structure of CHIS 2005 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 respondents, including:

- The screener respondent;
- A sampled adult;
- An adult who could give permission for the adolescent interview, who except in rare instances was the sampled adult or the screener respondent;
- A sampled adolescent; and
- A "most knowledgeable adult" (MKA) for the child extended interview.

In practice, one adult usually filled multiple roles in households with adolescents and/or children. However, the possibilities of multiple respondents required rules for the order of instruments and of the various administrative activities (e.g., selecting sample persons, identifying and contacting respondents), and CATI tools for navigating through the administrative and questionnaire screens. The default sequence of questionnaire and navigation sections is presented in Figure 2-1. A basic principle of the interview flow is that once the sampled adult is on the telephone, the interviewer should attempt to complete as many different parts of the interview as possible with that person. Once that has happened, the system goes to the HHSELECT screen. If there are remaining parts of the interview, the interviewer selects another individual (e.g., the MKA for the Child Questionnaire), and so on.

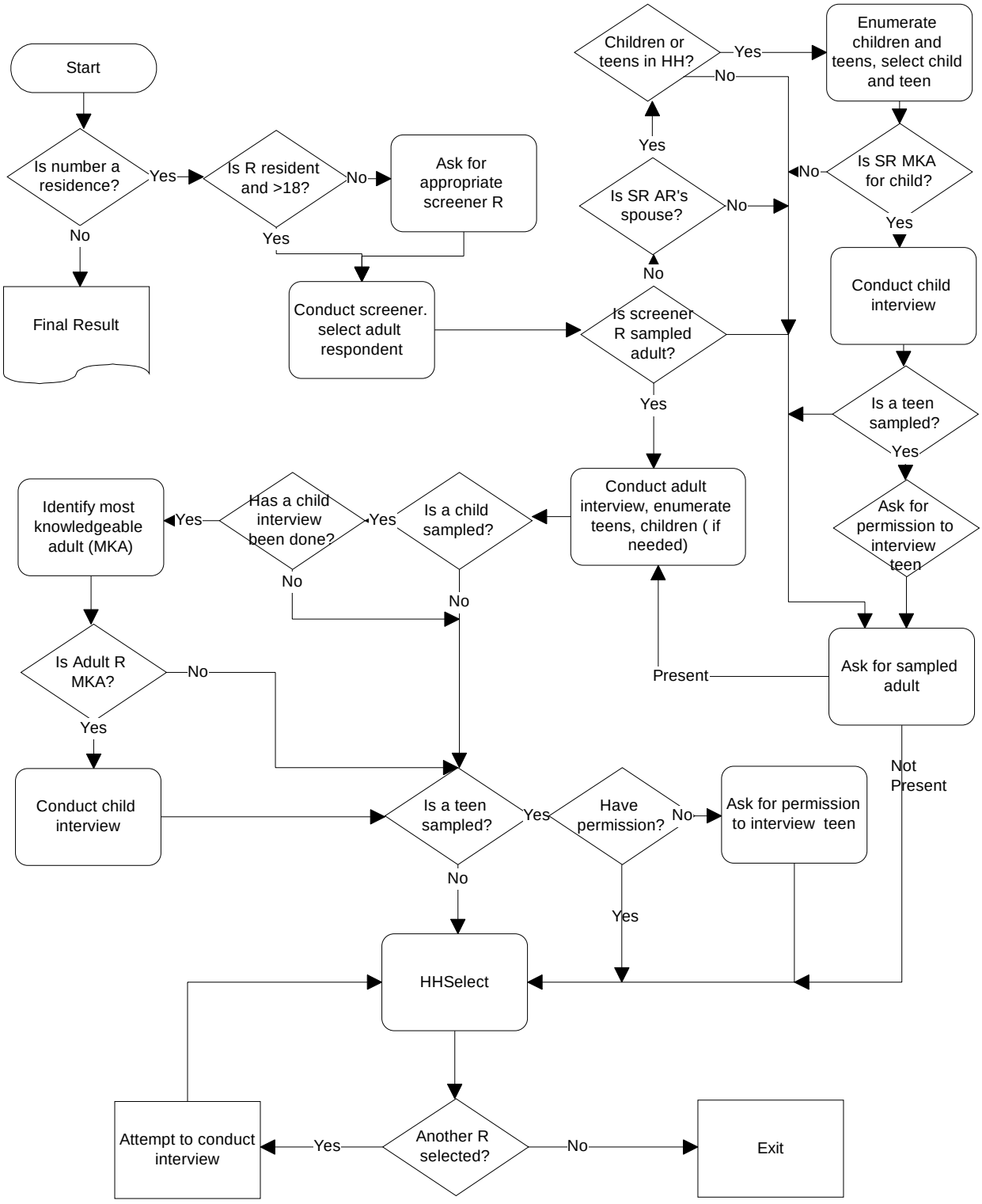

Figure 2-1. CHIS 2005 Interview Flow

As described in Section 2.1, CHIS 2005 allows sampling of children and adolescents as part of the screening interview under prescribed circumstances. If the screener respondent who is the sampled adult's spouse is determined to be the MKA, the child interview may be completed immediately or at another time before the adult questionnaire. These cases will be referred to as "child-first" cases. The adolescent interview may also be completed before the adult interview in child-first cases.

For cases other than those meeting the child-first criteria, the screening interview resumes 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 is used by the CATI program to select one adolescent and one child among those for whom the sampled adult is 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 procedure replicates the one used for CHIS 2003.

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

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

After the adult interview is completed for non-child-first cases, if an adolescent and/or child was selected the sampled adult is asked:

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

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

Exhibit 2-1. CHIS 2005 HHSELECT CATI screen

```
0.0020  HHSELECT              900009990201 – (301) 215-1500 – 08:26

     [ASK FOR PEOPLE WITH RESULT THAT IS NOT FINAL. ENTER NUMBER FOR CHOSEN
     PERSON. ENTER 0 TO LEAVE THIS CASE.]

                                       (  )
                                                AT
                                                THIS            APPOINTMENT
#      RESPONDENT      TYPE    SUBJECT          PHONE   RSLT    DATE/TIME
1      MARY/30/F       ADLT                       Y     CA

2-SR   ALFRED/32/M     CHLD    WILL/8/M           Y
```

3 EXTENDED INTERVIEWS

CHIS 2005 includes three separate extended interviews: adult, child, and adolescent. This chapter describes Westat's involvement in the development of these questionnaires, the content of each, pretesting of the questionnaires, translation of the questionnaires from English into four other languages, changes in the questionnaires during data collection, and how proxy interviews were conducted.

3.1 Questionnaire Development Process

The CHIS questionnaire design was driven by the research needs of UCLA, sponsoring agencies, and a variety of governmental, academic, and other partners, as well as by concerns about respondent burden, response rates, and costs. The target was an adult questionnaire that would not normally exceed 30 minutes in administration time, and child and adolescent questionnaires that would not exceed 15 and 20 minutes, respectively.

Early in 2005, UCLA began collaboration with Westat staff for drafts of the adult, adolescent, and child questionnaires. These drafts were developed by UCLA and its partners to cover a wide variety of health-related research topics. Westat reviewed the drafts and provided comments on the selection of question items, wording and sequence, and on the estimated length of the draft instruments. There were many iterations of draft instruments before complete instruments of reasonable length were ready for pretesting.

The surveys included many items from previous CHIS cycles as well as new items. Some of the items carried over were re-worded or re-ordered. The questionnaires posted on the CHIS website (http://www.chis.ucla.edu/topics.html) include both: (1) a *question* name describing the questionnaire type (adult, adolescent, child) and year, the section within the questionnaire, and a (largely sequential) number within the section; and (2) a *variable* name (largely based on previous CHIS cycles). To reduce the programming required and to 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 their section. Variable names for 2001 or 2003 items not included in the 2005 survey were not re-used. The question name incorporates a separate, sequential numbering system to facilitate manual use of the questionnaire documentation.

3.2 Questionnaire Content

The adult extended questionnaire is divided into 14 sections[2]:

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

B. **Health Conditions** – Asthma, diabetes, high blood pressures, cholesterol, heart disease, stroke, arthritis, epilepsy, and flu shot.

C. **Health Behaviors** – Walking for transportation and leisure, physical activity, dietary intake, use of nonsteroidal anti-inflammatory drugs, tobacco and alcohol use.

D. **General Health, Disability, and Sexual Health** – General physical and mental health, limitation of activity and impairments, height and weight, sexual orientation, sexual activity, sexually transmitted disease testing.

E. **Women's Health** – Fertility history, breast and cervical cancer screening, hormone replacement.

F. **Cancer History and Prevention** – Self and family history of cancer, colon and prostate cancer screening.

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

H. **Health Care and Health Insurance –** Usual source of care, current coverage by public or private plans, source of coverage, spouse's coverage, managed care plan characteristics, duration of coverage, and whether any uncovered period in past year.

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, duration of coverage, and whether any uncovered period in past year.

J. **Health Care Utilization and Access and Mental Health** – Doctor visits in past year, communication with doctor, emergency room visits, mental health status and use of services, discussion of nutrition and exercise with doctor.

K. **Employment, Income, Poverty Status** – Employment status, occupation and industry, earnings for self and spouse, household annual income, housing type, length of current residence, neighborhood safety.

[2] Note that the CHIS 2005 Adult Questionnaire does not include a Section M.

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

N. **Food Insecurity and Hunger** – Availability of food in household and hunger.

O. **Final Demographics** – County of residence, address, willingness to participate in follow-up study, and re-contact information.

The child extended questionnaire comprises seven sections:

A. **Demographics and Health Status** – Age, height, and weight, breastfeeding, school attendance, activity limitations, asthma, and health conditions.

B. **Dental Health, Nutrition, and Food Environment** – Most recent visit to a dentist, dental insurance, dietary intake, food environment, name of school.

C. **Physical Activity and Sedentary Time –T**ransportation to school, sedentary time on weekdays and sedentary time on weekends.

D. **Access to and Use of Health Care Services** – Usual source of care, most recent physician visit, communication with doctor, emergency room visits, delays in care, well child visit, and flu shot.

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

F. **Childhood Development and Child Care –** Parental involvement with child, physical functioning, mental health and development, First 5 Parent Kit and Media Campaign, and use of child care.

G. **Demographics, Part II** – Race and ethnicity, citizenship/immigration status of child and parents, respondent's English proficiency, and level of education of respondent and primary caretaker of child.

For child-first cases, some completed child interviews do not have completed adult interviews in the same household. The following topics from the adult questionnaire were administered to the MKA as part of the child questionnaire for child-first cases so that these children would have essential household-level and insurance information for analysis and weighting:

- Adult respondent's (AR's) employment status and age;
- Health insurance coverage for AR, spouse, the sampled child, and the sampled adolescent (if there is one);
- Household income;

- Own/rent home, smoking allowed in home; and
- Address information.

Finally, the adolescent extended questionnaire comprises eleven sections:

A. **Demographics** – Age, gender, school attendance, and employment.

B. **Health Status, Dieting, and Health Conditions** – Self-reported health status, height and weight, body image, dieting behavior, missed school days, asthma, diabetes, and flu shot.

C. **Injury and Injury Prevention** – Injuries in past 12 months, bicycle helmet and seat belt use.

D. **Diet, Nutrition, and Food Environment** – Dietary Intake, fast food intake, vending machines in schools, food environment and sources of meals.

E. **Physical Activity and Sedentary Time –** Exercise, transportation to school, sports team participation, physical education in school, sedentary time on weekdays and weekends.

F. **Tobacco, Alcohol, and Drug Use –** Smoking habits, drinking, use of recreational drugs.

G. **Emotional Functioning** – Mental health over past week.

H. **Sexual Behaviors** – Age at menarche, sexual orientation, sexual activity, contraception use, emergency contraception, pregnancy, and sexually transmitted diseases.

I. **Health Care Utilization and Access** – Usual source of care, emergency room use, recall of provider advice, emotional or psychological counseling, delays in care, and ability to access care on own.

J. **Adult Supervision** – Marital status of parents, parental knowledge of activities.

K. **Demographics, Part II** – Race and ethnicity, country of birth, citizenship and immigration status, languages spoken at home, and follow-up information.

3.3 Translation of Questionnaires

Translation of the CHIS 2005 questionnaires began with a thorough review of the 2003 instruments to identify items that would be administered again in 2005. This review was performed by Westat staff that compared printed versions of the two instruments side by side. In addition, electronic comparisons were made using text files of the 2003 and the 2005 "screen libraries" generated by the CATI system. To expedite the translation process and to begin conducting non-English interviews as quickly as possible, it was decided that unchanged items would not require a new translation and that they would be administered as they were in CHIS 2003.

The electronic comparison of the two survey versions was literally a character-by-character comparison so that any difference, no matter how trivial or insignificant (e.g., an extra space or line) would be identified as a change or as a new item for CHIS 2005. The results of the electronic comparison showed the need to fully translate or to update the existing translation for about 700 screens in the CATI system. This electronic comparison of the 2003 and 2005 instruments was made using the June 27, 2005, English version of the CHIS instrument. A few changes were made to the English instrument after June 27 and the non-English versions were subsequently updated.

3.3.1 Letter Translations

UCLA translated and provided to Westat the initial versions of the advance letter and the initial (screener level) and extended interview refusal conversion letters in all non-English languages (Spanish, Korean, Vietnamese, and Chinese). Much of the text from the CHIS 2005 advance and refusal conversion letters was left intact from those used for CHIS 2003. Staff from Westat's translation unit and contracted translators reviewed the documents and returned them to UCLA including some suggested changes. UCLA updated the advance letters based on the Westat review and sent finalized text to Westat. The multilanguage advance letter was printed in the same layout as in CHIS 2003—an 11x17 folded document with English on the front, Spanish on the back, and with Chinese, Korean, and Vietnamese printed from left-to-right on the inside two pages. The refusal letters were printed in four formats; one that combined English and Spanish (front and back of the document), and three others that combined English with the Asian languages.

3.3.2 Spanish Questionnaire Translation

The survey items identified as new or needing revision based on the electronic comparison were translated by Westat's translation unit and contracted translators in early June 2005. A formatted text file of the English CATI screens for these items was used for translation work. There were 686 new or updated items in CHIS 2005 that required Spanish translation. In addition, the entire library of more than 1,100 CATI screens was reviewed and checked for consistency in wording across screens.

Following a Westat internal evaluation of the initial translation, UCLA reviewed the translation and in that process found a number of survey items requiring further attention. On August 8, 2005, UCLA's language experts and Westat held a conference call to review, discuss, and finalize the translation. Further changes were made to the instrument to coincide with updates to the English survey and as a result of comments collected from Westat's bilingual interviewing staff.

3.3.3 Asian-language Questionnaire Translations

The translation approach used for the Spanish-language interview was adopted for the Asian language interviews in that only the new or revised survey items were translated. The same list of 686 new or revised items identified as needing Spanish translation was used for the Asian language translations. Existing electronic documents from CHIS 2003 were used to construct the initial CHIS 2005 Asian-language screen library for the unchanged items. The screen names and survey item numbers from the CATI system were used as the primary "key" when referring to specific items and in identifying items that had been or needed to be translated (e.g., item number "AD56").

Chinese Questionnaire Translation. The new and revised items were translated into Chinese by Westat and contracted translators in mid-July 2005. Translated sections of the survey were forwarded to UCLA as they became available. The process for review and approval of the Chinese translation was identical to the process used for the Spanish translation. UCLA's review showed a number of items needing further review. Westat translators and UCLA staff conducted a conference call on September 15, 2005 to discuss and finalize these items.

Korean Questionnaire Translation. The first set of text files of the new and updated English CATI screens were sent to Westat contracted translators in mid-July 2005, and the final translated section was returned to Westat by mid-August. Westat's in-house Korean expert reviewed each translated

section and made modifications or revisions as needed before sending it to UCLA for review and approval. Westat's internal review of the translated sections was completed in late August. UCLA's review showed a number of items needing further review. Westat translators and UCLA staff conducted conference calls on September 7 and 8, 2005 to discuss and finalize these items.

Vietnamese Questionnaire Translation. Using the same translation and review process used for the other Asian languages, the updated and revised items were translated during June and July, 2005. Extensive effort was made to correctly accent Vietnamese text. Westat's internal review of the initial translation was completed shortly thereafter and two conference calls with UCLA staff and their language experts were held in September.

Westat also provided translated versions of the "Frequently Asked Questions" pages used to help interviewers answer respondents' questions about the survey and respond to objections that respondents may have had.

3.4 Pretest and Pilot Test

Westat conducted a small paper-and-pencil pretest of portions of the CHIS 2005 adult, child, and adolescent interviews January 18-20, 2005. The purpose of this test was to estimate the time to administer proposed new items and to assess the interview flow and wording of these items. Respondents were recruited by a market research firm at the direction of UCLA. Westat interviewers in the Citrus Heights, California, Telephone Research Center (TRC) conducted 9 adult interviews, 9 adolescent interviews, and 9 child interviews. All pretest interviews were conducted by experienced interviewers and monitored by Westat, UCLA, and/or Public Health Institute (PHI) staff. Results from the pretest informed subsequent decisions about dropping or revising questions.

The formal pilot test was held in the Citrus Heights TRC, from June 23 through June 26, 2005. Twelve experienced interviewers were trained and conducted interviews; 7 had interviewed for CHIS 2003, and the remaining 5 had experience on another large RDD survey. 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. The pilot test sample used an RDD approach, using telephone exchanges expected to have a high yield of adolescents and children. Table 1 presents the results of the pilot test, and compares cooperation rates from the 2003 pilot test. Note that the 2005 screener and adult cooperation rates were lower than those in

2003. The cooperation rates for the child and adolescent interviews were higher in 2005, although based on a relatively small sample size.

Table 3-1. Number of completed interviews and refusals and cooperation rates in the CHIS 2005 pilot test, and CHIS 2003 pilot cooperation rates

Instrument	Completed Interviews	Refusals	Cooperation Rate	2003 Cooperation Rate
Screener	210	325	39.3%	43.0%
Adult interview	82	36	69.5%	78.9%
Child interview	58	3	95.1%	96.2%
Adolescent permission	25	11	69.4%	Not available
Adolescent interview	12	1	92.3%	77.8%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

The adult extended interview averaged just over 39 minutes to administer, considerably longer than the target of 30 minutes. The child interview averaged just under 15 minutes, and the adolescent interview about 17.5 minutes. The screening interview averaged 2.5 minutes, and getting permission to interview adolescents about 2 minutes. These times were all close to or under the targets. Tables 3-2a through 3-2c present the interview length by section for the adult, child, and adolescent questionnaires, respectively.

Staff from UCLA, the California Department of Health Services, the PHI, and Westat 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.

Table 3-2a. Mean, standard deviation, minimum, maximum, and median lengths of CHIS 2005 pilot adult extended interview, by section

Section	N	Mean	Std Dev	Minimum	Maximum	Median
Total	82	39.19	8.81	24.57	60.73	38.22
A	82	2.54	1.21	1.33	7.5	2.05
B	82	1.89	0.99	0.9	7.3	1.58
C	82	8.06	2.35	4.9	16.6	7.52
D	82	3.14	0.85	2.05	7.27	2.98
E	47	2.47	0.87	0.93	4.57	2.3
F	82	3.65	1.95	0.53	8.93	3.72
G (before screener)	82	1.12	0.65	0.58	5.42	0.95
G (screener)	66	1.07	0.64	0.08	2.9	1.15
G (after screener)	82	2.03	1.61	0.65	14.08	1.62
H (adult respondent)	82	1.96	0.83	0.8	5.33	1.74
H (spouse)	64	0.51	0.33	0.23	1.78	0.39
H (plan details)	82	0.92	0.44	0.37	3.1	0.84
I (child)	40	0.47	0.7	0.18	3.53	0.25
I (adolescent)	31	1.37	1.91	0.33	10.55	0.75
J	82	3.39	0.93	2.18	8.27	3.25
K	82	3.13	1.34	0.53	7.08	3.13
L	30	1.35	0.46	0.68	2.55	1.32
M	82	0.99	0.48	0.5	4.43	0.9
N	15	1.23	0.25	0.93	1.98	1.18
O	82	2.23	0.76	1.25	5.42	2.05

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Table 3-2b. Mean, standard deviation, minimum, maximum, and median lengths of CHIS 2005 pilot child extended interview, by section

Section	N	Mean	Std Dev	Minimum	Maximum	Median
Total	58	14.91	4.2	7.32	25.43	13.87
A	58	3.31	1.44	1.63	10.35	2.9
B	58	3.01	1.55	0.1	8.7	2.96
C	52	1.4	0.68	0.4	3.67	1.29
D	58	1.52	0.36	0.92	2.87	1.45
E	58	0.42	0.7	0.12	5.12	0.26
F	58	1.61	0.99	0.45	4.47	1.33
G	58	14.91	4.2	7.32	25.43	13.87

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Table 3-2c. Mean, standard deviation, minimum, maximum, and median lengths of CHIS 2005 pilot adolescent extended interview, by section

Section	N	Mean	Std Dev	Minimum	Maximum	Median
Total	12	17.57	2.15	13.63	21.05	17.27
A	12	2.48	0.3	2.12	3.12	2.36
B	12	2.14	0.5	1.48	2.77	2.18
C	12	0.58	0.12	0.45	0.83	0.53
D	12	2.52	0.44	1.95	3.43	2.39
E	12	3.02	0.79	2.17	4.78	2.65
F	12	0.5	0.28	0.32	1.08	0.37
G	12	1.22	0.38	0.72	1.77	1.22
H	12	0.76	0.68	0.35	2.75	0.47
I	12	2.26	0.59	1.18	3.38	2.17

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

3.5 Changes in the Questionnaire during Data Collection

As Westat, UCLA, and PHI staff monitored interviews during the data collection period, as interviewer debriefing sessions were conducted, and as Westat data preparation staff reviewed marginal comments entered by interviewers, 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. Exhibit 3-2 presents all of the changes to the CATI instruments after data collection started. Note that on August 12, 2005, a set of questions was added in Section O of the adult questionnaire that were asked only of respondents reporting that they lived in Marin County. The questions focused largely on breast cancer.

Exhibit 3-2. Changes in CHIS 2005 questionnaire after start of data collection

Date	Changes
7/15/2005	AO6 "Is there another number … to reach you…" is now split into AO6 as a Yes/No item, and AO6OV which collects the phone number if AO6 is Yes
7/18/2005	Skip TE54 if TE53 is okmiss, and skip TE56 if TE55 is okmiss
7/19/2005	Reinstate screen SC22C without the second sentence, and with square brackets around the first sentence, to help PGA transition.
7/22/2005	Response category "9. HEALTHY KIDS" added to insurance items AI19,AI47,AI49,CF9,IA9, plus their K* counterparts.
8/1/2005	Removed text "Include fruit mixed with other food, such as cereal or yogurt" from screen AE2
8/8/2005	"HEALTHY KIDS" response option added to items: AH55, AH56, AI30, AI33, AI51, AI53, CF23, CF9, CF26, IA9, IA23, IA26 KAH55, KAH56, KAI30, KAI33, KAI51, KAI53, KCF9, KCF23, KCF26, KIA9, KIA23, KIA26
8/9/2005	Added 4 new child-first questions: AR and spouse type of employment and hours worked per week
8/11/2005	Skip changes to AD11 / AD10 and AD26 / AD25. Add condition "if AD4 = 2 | AD5 = 0 | AD6 > 2" to ask AD11, etc.
8/12/2005	Marin County additional questions now active
8/15/2005	AR29 is changed to an open-ended 3-line item; AR35 is dropped
8/17/2005	Child supplemental ineligible conditions finalized; SC10A no longer asked; SC10AX remains being asked only if SR ^= AR.
8/22/2005	AI22D Month field screen bug fix; KAA3 was dropped
9/8/2005	New response options added to items AE22, AOAL11, AD12A
9/20/2005	Adjustment for the SURNAME = 'KV' Korean or Vietnamese ethnicity eligibility extended result IN
9/22/2005	LISTFLAG is now not used in the skip for confirming/collecting address at AO1; all ADVANLET = 1 except PO BOX confirmed
9/26/2005	Screen change only: AH50 / KAH50 - add "/ SECURE HORIZONS" to response category 3. PACIFICARE
10/4/2005	Order of CHLDSUPL=1 cases screener items is now SC5A SC7 SC8 so that IK cases can skip adult selection
11/9/2005	New fencepost with timing for just the Family Cancer History portion of section F
11/14/2005	New Vietnamese screen library only; some minor changes to some of a list of 21 screens
11/18/2005	Highlight "you" for proxy at AD37 and AC20
12/8/2005	New Korean screen section only; question text on screens AP7 and AP9 were reversed

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

4 INTERVIEWER RECRUITING AND TRAINING

4.1 Organization of the Telephone Research Centers

Westat conducted CHIS 2005 at all seven of its Telephone Research Centers (TRCs), in Rockville and Frederick, Maryland; Citrus Heights and Merced, California; Chambersburg, Pennsylvania; Sarasota, Florida; and Greeley, Colorado. More than half of all interviewer hours for CHIS 2005 were in the two California TRCs. Overall direction of telephone survey operations was from the TRC central office at the Rockville headquarters.

Westat's computing systems and telephony capabilities enable the networked combination of geographically diverse TRC locations to operate as a single "virtual" TRC managed from the home office location at Rockville. All interviewing and supervisory stations at all locations are interconnected on a high-speed data communications network that provides a single integrated database and a single call scheduling and reporting capability. Integrated voice and data monitoring is available for supervisors at each center and at a central facility at the Rockville home office. Each center has an administrative director and a group of supervisors who schedule and supervise the center's interviewing staff.

The Citrus Heights TRC was the pilot test and pretest site. The Operations Manager was in the Rockville office. All centers conducted RDD interviewing in English, as well as interviewing of the county supplemental samples and the screening of the Korean and Vietnamese surname samples. Spanish bilingual interviewers were present at all sites. The Asian bilingual extended interviews were conducted in the Citrus Heights TRC and the Rockville office. Frail elderly proxy interviews were conducted in the Frederick and Greeley centers.

4.2 Pretest and Pilot Test Recruiting and Training

Westat selected experienced interviewers from the Citrus Heights TRC for the pretest and the pilot. For the pretest, interviewers were trained informally on paper-and-pencil versions of the CHIS 2005 draft questionnaire. Training was conducted by members of the CHIS team. Since the pretest respondents were recruited by a California market research firm, there was no need to train the pretest interviewers on contacting and callback procedures.

The pilot test was also conducted out of the Citrus Heights TRC. Westat utilized 12 experienced interviewers, several of whom had interviewed for the CHIS 2003 study. The training

program was developed and implemented by the TRC Operations Manager, and anticipated the training for the main study. CATI was used for administration of the pilot interviews.

4.3 Recruiting and Training for English-Language Random-Digit-Dial Sample Interviewing

The field period for CHIS 2005 began in mid-July of 2005, ran for 9 months and ended the first week of April 2006. Westat's data collection plan was to recruit and train a large number of interviewers at the beginning of the field period so that peak production would be reached within the first two weeks of the study. Training sessions were planned for late September and October to incorporate bilingual Asian interviewers and supplement the English interviewing staff. Bilingual Spanish-speaking interviewers were to be trained along with English-only interviewers to conduct interviews in English for a few weeks. Once familiar with the survey, they would be trained in and use the Spanish-language instrument. Asian bilingual interviewers were to be added in the fall.

4.3.1 Recruiting Telephone Interviewers

The CHIS 2005 interviewing force was a combination of Westat-experienced and newly-hired interviewers. In all centers some experienced interviewers were available at the beginning of the field period. After all training sessions had been held, 562 interviewers of the 665 invited to training successfully completed all sessions. Of those who completed training, 204 had previous interviewing experience at Westat and 358 were new hires.

Generally, Westat recruits new interviewers by placing advertisements in local newspapers. Applicants call a toll-free number that rings in the Rockville office, and they undergo a screening interview over the telephone. Those considered potentially good candidates with clear speaking voices are invited to open houses at the local TRC, where they are presented with the details of the job. Finally, they are interviewed in person at the local TRC, and a hiring decision is made. Successful applicants are invited to the next available training in general interviewing techniques (see Section 4.3.5). Applicants must complete this general training, training in Westat's CATI system, and project-specific training before they actually become Westat employees.

4.3.2 Overview of Training Plan

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.

Training sessions were also organized according to standardized Westat procedures. Training teams were organized with staff who had distinct responsibilities (e.g., a lead trainer who delivered the training script, a group leader who evaluated trainees, runners who helped trainees during interactives and role plays, etc.) so that training sessions flowed smoothly. The TRC Operations Manager led development of the training materials, served as one of the lead trainers, and trained the other lead trainers directly.

Initial training was provided to all interviewers in general interviewing techniques and the use of the computer system. The interviewers then received a project-specific training that focused on the CHIS 2005 screener and extended interviews.

The initial four hours of the project-specific training involved interviewers completing a home study protocol. Home study materials included a CD-ROM containing a CHIS 2005 screener, adult interview, permission interview and an adolescent interview. Other materials on paper included a home study guide overview, instructions for completion, trouble shooting suggestions, the CHIS 2005 advance letter, background information on the study, questions and answers to common respondent concerns, website information from http://www.californiahealthsurvey.org, refusal avoidance lines, and an answer sheet for summary questions asked at the end of the CD-ROM. The packets were distributed to trainees after their general interviewing training and use of the computer system were completed. Approximately 10% of the new interviewers did not have computer systems at home to accommodate the CD-ROM. All of the TRC's were equipped with stations with CD-ROM capability for new interviewer's scheduled use.

The first few trainings for the main survey were conducted simultaneously in Citrus Heights, Merced, Chambersburg, and Rockville beginning July 9, 2005. Training in Greeley and Sarasota followed starting on July 10, 2005. Additional trainings were conducted as needed throughout the data collection period. Trainings were held at six centers: Rockville, Maryland; Citrus Heights and Merced, California; Greeley, Colorado; Sarasota, Florida; and Chambersburg, Pennsylvania. Frederick, Maryland interviewers traveled to Rockville for inclusion in their training sessions.

After all interviewers started production, they received supplemental training on specific questionnaire issues that arose after training. They also received more training in gaining respondent cooperation. Monitoring of interviewers continued throughout data collection as a method of quality control.

Interviewers who demonstrated relevant skills were selected to also receive training in how to handle special cases. These included interviews with proxy respondents and interviews with persons who had refused to participate during an earlier call to the household. Another type of specially handled cases involved calling back households with completed screeners for which interviewers were told that the selected adult was a person unknown to them. A few handpicked Rockville interviewers called these households in an attempt to gain more specific information. These various types of cases were all placed in special work classes so that they would only be delivered by the scheduler to the select group of interviewers.

4.3.3 Development of Training Materials

Prior to training, key members of the study area staff, the TRC operations manager, and senior TRC staff developed training materials. Guided by an outline of all the concepts relevant to the study, a complete set of training materials that complemented one another was produced. These materials included the following items.

A Training Program Agenda. The agenda identified the format of the sessions (lecture, interactive, dyad role play, etc.), the topics to be covered (overview of questionnaire, particular questionnaire sections, etc.), and the length of time the session was scheduled to take (see Exhibit 4-1). This document was used during training by the lead trainer and others assisting in training to see what materials were used by the lead trainer as well as the interviewer during each session.

Interviewer Help Text. In order to provide easy access to additional information about interview questions, Westat included in the CATI program online help text accessed for a related question by pressing the F1 key. Having the specifications for each question available in this format precluded the need for a formal hardcopy manual.

Lead Trainer's Manual. This manual contained all material presented by the lead trainer. It included interactive scripts and exercises that were designed to develop and fully test the level of an interviewer's comprehension of survey materials and procedures.

Home Study Packet. This packet was provided to interviewers 4-7 days prior to their scheduled project-specific classroom training. It included a home study guide overview, instructions for completion, a CD-ROM with an adult and adolescent interview, the CHIS 2005 advance letter, background information on the study,

questions and answers to common respondent concerns, website information from http://www.californiahealthsurvey.org, refusal avoidance lines taken from support materials, summary questions and an answer sheet.

Dyad Role-Play Scripts. Role plays were produced that focused on contact procedures and provided practice on the administration of the extended interview.

Support Classroom Materials Folder. Each interviewer was provided with a folder that stored for reference the following documents.

- Key Concepts Sheet
- Pronunciation Guide
- 800#/Web site Reference Card
- Coding of Recordings/Messages Guide
- Protocol for Referring Distressed Adolescent Respondents
- Additional Website information
- Refusal Avoidance statements from experienced interviewers

Exhibit 4-1. Agenda for English-language interviewer training, CHIS 2005

Session	Length	Topic	Interviewer/Trainee Materials
Home Study	4 hours	Home Study Packet Completion	Home Study Packet w/CD-ROM, advance letter, background info, refusal avoidance info, website Q & A's, CHIS Q & A's
Classroom 1	8 hrs 10 minutes	Introduction	Background and review of some previous CHIS results
2	50 minutes	Screener Interactives	Personal Computer, Key Concepts Sheet
3	90 minutes	Adult/Child Interactives (includes a 15-minute break)	Personal computer, Pronunciation Guide
4	45 minutes	Contact Procedures	Personal Computer, Recording NR/NW Sheet
5	5 minutes	Review Problem Sheet	Problem Sheet
6	10 minutes	Sensitivity Concerns	Presentation/Discussion
7	15 minutes	Exercise on Probing and Collecting Valid Answers	Exercise Handout
8	15 minutes	Interviewer Questions and Answers, Summary Review	
9	90 minutes	Strategies for Gaining Respondent Cooperation	Q & A Sheet, Practice Scenario Cards, Refusal Avoidance Lines (2)
12	2 hours, 30 minutes	Role Plays (includes 15 minute break)	Personal Computer

4.3.4 Training Teams

The training team for each group consisted of a lead trainer, a data display operator, a group leader, and two runners. The roles and responsibilities of the team members follow.

Lead Trainer. Lead trainers were responsible for the overall presentation and the pace of training. All lead trainers for CHIS 2005 had several years of training experience and were well-versed in training techniques and group control. It was the role of the lead trainers to concentrate on delivery of the material, while trainee evaluation was the responsibility of the group leader.

Data Display Operator. The data display operator was responsible for following the lead trainer script and making entries in the master terminal that displayed the CATI interview on large screens in the front of the training room. The data display operator was familiar with the CATI program and entered responses given by the lead trainer.

Group Leader. The group leader was responsible for taking attendance, troubleshooting, and making certain that all materials were available when needed. That person was responsible for pairing trainees for role plays and for making sure that each trainee was sufficiently monitored in role-play situations to evaluate performance. Most importantly, the group leader was responsible for coordinating an evaluation of each trainee. Information from each member of the training team was compiled and used to determine if a trainee was ready for live interviewing. If not, a remedial training program was implemented or the person was released. Remedial training typically involved more role play. If the additional role play did not result in sufficient performance improvement, the person was released. Once interviewing began, the group leader was responsible for assuring that each of the trainees was adequately monitored and provided feedback. The role of group leader was filled by shift supervisors with many years of experience working with interviewers.

Runners. As the name implies, runners moved around the training room making sure each trainee kept up with the script and assisted trainees who made entry errors that put them in an inappropriate place in the interview. Two runners were assigned to each group. Runners were supervisors and senior interviewers who had direct experience working with interviewers in a one-to-one setting.

Prior to interviewer training, data display operators, group leaders, and runners attended a meeting during which roles and responsibilities of each position were discussed. The work of the training teams was coordinated and closely supervised by the operations manager, as well as by the project director and the director of the TRC.

4.3.5 Stages of Interviewer Training

Interviewers were trained in four stages. The first two stages are standard for all CATI interviewers, and the last two stages are specific to the project. The stages are General Interviewing Techniques (GIT), Teltrain (CATI training), Home Study, and project-specific classroom training.

4.3.5.1 General Interviewing Techniques

Every new interviewer participated in a 4-hour GIT session; this training was supported by Westat and was not charged to the project. In GIT training, interviewers were introduced to Westat and to survey research, shown samples of types of survey questions and recording conventions, and taught basic ways to obtain accurate data through listening and probing. They learned confidentiality procedures and methods for gaining respondent cooperation. The format was interspersed with exercises, interactive lectures, role plays, a question-and-answer period, and practice exercises. Each interviewer received a manual (the Westat General Interviewer Training Interviewer's Manual) that documented the material presented in the session. This session also allows staff to identify those interviewers whose reading and speaking skills were inappropriate for the study.

4.3.5.2 CATI Training with Teltrain

Before specific project training, each trainee participated in a 4-hour training session on the use of the CATI system. This session used an interactive, computer-assisted tutorial training program that was supervised, but self-administered, and took each participant through the procedures for conducting interviews using CATI. The session instructed interviewers on the use of the computers, all Westat CATI recording functions, and special CATI commands. The script included practice with logging on to the computer and using the keyboard (particularly the keys that control the flow of the CATI interview). This training also served as an opportunity to identify trainees with weak keyboard skills. Those who did not demonstrate sufficient keyboard facility were released from the CHIS 2005 training program.

Included in the Teltrain session was a tutorial lesson on the coding of contact procedures. Contact results covered included ring no answers, non-working numbers, fax machine tones, answering machines, and busy signals. Through headphones, trainees experienced exact replications of common contact situations and learned the proper coding techniques through presentation and practice. A follow-up test was administered to evaluate mastery of the contacts. After scoring 100 percent on this test, an interviewer was eligible for the specific project training.

4.3.5.3 CHIS Project Training – Home Study

After interviewers were trained in GIT and the use of the CATI system, they participated in two training sessions devoted to the specific procedures and the administration of the CHIS CATI questionnaire.

At the end of the GIT session, interviewers were given a home study packet and a CD-ROM which included self-guided practice interviews of the CHIS 2005 screener, adult interview, permission interview and adolescent interview. The CD-ROM utilized a program simulating the computer assisted telephone interviewing conducted in CHIS 2005 production. Respondent answers to interview questions appeared on each screen. Interviewers were required to enter the answers provided in order to progress through the instrument, simulating an actual interview. At the end of the CD-ROM were summary quiz questions based upon the interviews and requiring review of the hardcopy papers provided in the packet. This ensured that all trainees completed the interviews on the CD-ROM and read the material provided. Answers to the quiz were required to be turned in prior to the classroom training.

4.3.5.4 CHIS Project Training – Classroom Session

Because of the multiple skills interviewers need, training focused on the techniques designed to cultivate these skills. This involved the active participation of all trainees by simulating the actual conditions of the interview. This approach required trainees to use the same procedures and data collection instruments they used to conduct the survey. This approach is summarized below.

Interactive Lectures. Interactive lectures were used to familiarize interviewers with the questionnaire. They were conducted as mock interviews in which the trainer acted as the respondent and the interviewers asked the questions using the computer to read the question text. In addition, the trainer took time to explain or define concepts pertinent to the CHIS interviews, or to ask the interviewer to read a definition or procedure from available Help Text.

The scripts used for interactive training were prepared using the Cheshire Automated Training Scripts (CATS) system. CATS is a series of macros created in MS Word for Windows for TRC staff to develop scripted training materials. With this program, CHIS training staff created training scripts. Standards of style have been developed so that each training script looks uniform regardless of the author, and all training groups hear the same information, regardless of which trainer presented the material.

Dyad Role Plays. In dyad role plays, one trainee took the role of interviewer using the computer while the other acted as the respondent, both using a prepared script that was produced using the CATS system. Interviewers reversed roles after the end of each role play. Each interviewer participated in several dyads. Group leaders and other training team members monitored the role plays.

Reinforcing Exercises. In addition, written exercises were given to the interviewers during training to reinforce what was learned during the interactive interviewing sessions. These exercises dealt with proper probing techniques, the entering of additional comments to clarify a response, and gaining respondent cooperation.

For the extended interview, trainers instructed interviews on how to access on line additional information for questions by pressing the F1 key to display Help Text. These question-by-question (QxQ) specifications for some questions were reviewed as part of the interactives. These QxQs were used to provide interviewers with more in depth information on questions such as those on health care coverage, employment and earnings, family income, program participation, and industry and occupation. The question by question specifications were also provided to interviewers as a hardcopy handout. An exercise on the industry and occupation engaged in was included to reinforce collecting codeable answers. The lead trainer used an answer key so that all interviewers heard consistent answers across training groups.

Practice Answering Commonly-Asked Questions. Commonly-asked questions and answers were discussed and reviewed throughout training as part of the interactive presentations. In CHIS training, card stock copies were given to each interviewer during the training and made available on the interviewing floor. The questions dealt with both general interviewing issues and CHIS project-specific issues. Translation of this document was done in Spanish, Chinese, Korean and Vietnamese for use with non-English language speaking respondents.

4.3.6 Schedule and Number of Interviewers Trained

Table 4-1 shows the timing of project-specific interviewer training sessions for CHIS 2005. The first trainings beginning July 9th, 2005, were held simultaneously in Citrus Heights and Merced, California, Chambersburg, Pennsylvania and Rockville, Maryland. On July 10th training began in Greeley, Colorado and Sarasota, Florida. Later in July Frederick, Maryland added interviewers to the CHIS project.

Table 4-1. CHIS 2005 interviewer training dates, sites, and number of interviewers trained

Training Dates	Site	Interviewers Invited to Training	Interviewers Completing Training
2005			
7/9	Chambersburg	27	21
	Citrus Heights	43	29
	Merced	34	33
	Rockville	34	28
7/10	Greeley	21	17
	Rockville	47	36
	Sarasota	55	47
	Chambersburg	31	25
7/17	Rockville	31	27
7/24	Frederick	2	2
	Rockville	30	23
	Merced	32	25
7/31	Citrus Heights	27	24
9/18	Merced	23	21
	Greeley	24	17
	Rockville	20	18
	Frederick	9	8
	Sarasota	14	13
9/24-9/26	Rockville	4	4
	Citrus Heights	2	2
10/9-10/10	Rockville	14	13
10/22	Rockville	29	29
10/30	Citrus Heights	1	1
	Frederick	17	14
11/5	Chambersburg	18	14
11/19	Sacramento	21	17
11/21-11/22	Sarasota	15	15
2006			
1/7-1/8	Citrus Heights	12	12
	Rockville	10	10
1/29	Greeley	11	10
3/11-3/12	Rockville	7	7
Total Interviewers completing English training		665	562

4.3.7 Refusal Avoidance and Conversion

Within two weeks of the CHIS training, Westat scheduled abbreviated small group training sessions. The objective was to improve interview skills in answering respondent questions and objections with immediate and informative responses. This was also done as part of the main study training but once interviewers had some production experience, the application of these skills became that much more salient. Role playing with typical scenarios was practiced. The purpose of this training included an attempt to improve the screener cooperation rate. A subset of these interviewers who were particularly adept with gaining cooperation were subsequently trained and assigned to work as converters for screener and extended level refusals.

During the regular project training, all interviewers received instruction in refusal avoidance methods. Further strategies were reviewed at all sites in special refusal avoidance meetings. Included in the effort to improve respondent cooperation were special coaching sessions by supervisors assigned to small groups of interviewers. In these meetings, the emphasis was on the review of good interviewing techniques by direct observation and intervention. In addition, supervisors selected experienced interviewers with average or above average cooperation rates in either the screener, the extended interview, or both for refusal conversion activities.

Refusal conversion focuses on attempts to persuade respondents who have previously refused to participate or to complete an interview. Interviewers received special training in re-contacting and encouraging participation by those respondents who had originally declined. 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 2005, and the importance of addressing respondent concerns with appropriate responses.

4.3.8 Interviewer Performance

Interviewer performance was evaluated through examination of cooperation rate reports and monitoring of live interviewing for the skills needed for effective interviewing. Ten percent of interviewing time was monitored throughout the data collection period. Supervisors monitored interviewers for a minimum of ten minutes at a time. The monitoring was followed by a one-on-one coaching session to review techniques that were or were not working in an effort to either reinforce exemplified skills or provide feedback for improving interviewing style. Interviewers were monitored by TRC 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. Interviewers 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 Operations Manager sent a weekly priority list to shift coordinators. It included lists of interviewers 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 interviewer's ability to answer respondent questions/concerns quickly and accurately, and read all screens (in particular the screener introduction) at the appropriate pace and tempo for the respondent; read screens verbatim; and probe neutrally and appropriately. For refusal interviewers, the emphasis was on the ability to engage respondents and use appropriate techniques.

- Supervisors provided feedback to interviewers on an individual basis after monitoring sheets had been completed. This included feedback on positive aspects of the interview and suggestions for improving performance.

- Shift coordinators sent reports regarding interviewer performance to the operations manager. Reports identified strengths and weaknesses as reported in monitoring sheets. They also provided input on interviewers recommended for special tasks.

- Shift coordinator reports were used in combination with cooperation rates to identify interviewers for refusal conversion and other specialized tasks.

4.4 Training for Random-Digit-Dial Spanish-language Interviewing

All Spanish bilingual interviewers were trained according to the protocol described in Section 4.3.5, in sessions that included both English-only and bilingual interviewers. Spanish interviewing was conducted at all seven TRC's. After completing the English-language CHIS-specific training, Spanish bilingual interviewers initially worked in English. Once the Spanish-language instrument was ready, bilingual interviewers were given practice using it before proceeding to live interviewing in Spanish. The training was monitored by Spanish-speaking supervisors in each site. Since the English and Spanish instruments were so similar, there were few substantive or operational issues to work through during training.

Once the interviewers began interviewing at the TRC's in Spanish, they were monitored closely by Spanish-speaking supervisors. The first priority in CATI for Spanish bilingual interviewers were cases from the work class identified as speaking Spanish. Bilingual Spanish interviewers worked primarily in the Spanish work class for the rest of the field period but also made the initial follow-up calls to households that English speaking interviewers categorized as OTHER LANGUAGE (not Spanish, Chinese, Korean, Vietnamese or other Asian language). The expectation was that some of these would turn out to be Spanish speaking households not identified by a non-bilingual interviewer. If the household was not Spanish speaking and the Spanish interviewer was unable to ascertain the language being spoken, these cases were next called by interviewers fluent in both Mandarin and Cantonese to determine if the household spoke an Asian language eligible for a foreign language interview.

4.5 Training for Random-Digit-Dial Asian-language Interviewing

Bilingual and multilingual staff was utilized to assist the CHIS interviews in Vietnamese, Mandarin, Cantonese and Korean. The training for Asian-language interviewers was conducted in multiple stages. Interviewers 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, so in order to make their interviewing time efficient, interviewers 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 on CATI in the Asian languages. Interviewer instructions and help text remained in English. Asian interviewers attended the following training sessions:

- GIT;
- Teltrain;
- CHIS Home study in English;
- CHIS classroom training in English;
- CHIS training in specific Asian languages;
- Dyad role plays – both in the Asian languages and one in English; and
- Live interviewing.

GIT, Teltrain, and CHIS Training in English. Following the standard training protocol established for CHIS, the Asian-language interviewers completed GIT, Teltrain, and parts of the English language CHIS project training. Each of these training steps was conducted in English, but open exclusively to the interviewers hired to conduct interviews in Vietnamese, Mandarin, Cantonese and Korean. Because the Asian-language interviewers had English as a second language, trainers spent additional time defining terms, explaining concepts, and providing instruction on telephone interviewing and the CHIS instruments.

Vietnamese, Mandarin, Cantonese, and Korean Training Assistance. Vietnamese, Mandarin, Cantonese and Korean speaking staff were drawn from various areas of the Westat organization to assist in the creation of training materials. Experienced Vietnamese, Cantonese, Mandarin and Korean staff assisted in the translation of Asian dyads. The operations manager worked with each of the assistants to gain the skills necessary to conduct effective interviewer training. Together the operations manager and the Vietnamese, Mandarin, Cantonese, or Korean training assistants worked with the groups of interviewers. As in the English language interactive sessions, the trainer called on trainees to read portions of the questionnaire aloud. The trainer pointed out questions that were difficult to administer and worked with the trainees to help them become comfortable with the questionnaire. While the multilingual training assistants focused on helping the trainees to become familiar with the instrument, the operations manager instructed the interviewers on the technical and data entry aspects of using CATI.

Table 4-2 shows the dates of Asian-language questionnaire training and the groups trained.

Table 4-2. CHIS 2005 Asian-language interviewer training dates

Dates – 2005-2006	Location	Asian Language Group
September 24-26	Rockville/Citrus Heights	Korean
October 9, 10	Rockville	Cantonese/Mandarin
October 22	Rockville	Vietnamese/Korean
October 30	Citrus Heights	Vietnamese
January 7-8	Rockville/Citrus Heights	Vietnamese/Korean

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 interviewer 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 use the scripted role play book to respond to the interviewer's questions. The role play book responses were scripted in the various Asian languages.

An adolescent role play interview to be conducted in English was included in the set in an attempt to simulate a common real life scenario and provided additional English practice.

At any point in the interviewing process, interviewers had the capability to change the displayed text on a screen from English to an Asian language or vice versa. Additionally, interviewers 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 interviewer speaking another language. Practice on this capability was included in the language specific trainings.

Live Interviewing. After training and practice, the interviewers began interviewing in Vietnamese, Mandarin, Cantonese and Korean. Having a CATI instrument with Mandarin, Cantonese, Korean, and Vietnamese 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 interviewers trained in interviewing in that Asian language.

Bilingual Assistant/Peer Monitoring. Asian speaking Westat supervisors, assistants and peer monitoring were used to teach interviewing techniques, to measure interviewing quality, and to provide feedback to individual interviewers. As data collection began in each of the Asian languages, multilingual interviewers and Asian speaking staff were taught to monitor. Specific monitoring forms and guidelines describing what to look and listen for were provided to help in peer monitoring sessions. After an interviewer had completed a monitoring session, the TRC supervisor would join the interviewer in a review of the monitoring sheets completed. The supervisor would discuss with the interviewer what he had monitored and would initiate a dialogue about the appropriate and inappropriate techniques that had been observed. With the peer monitoring, the monitor would then return to interviewing, having learned or reinforced good interviewing techniques. The monitoring information would further be used to follow-up with the interviewer who had been monitored and review strengths and weaknesses exhibited. Supervisors fluent in Vietnamese, Korean, Mandarin and Cantonese working at the Citrus Heights TRC monitored interviewers at both the California and Rockville TRC's. Monitoring follow-up calls were made to speak directly with interviewers when monitoring Rockville interviewers from the Citrus Heights location.

4.6 Training for Interviewing Supplemental Sample Interviewing

Several different kinds of supplemental samples were added to CHIS 2005 during the data collection period. These samples, grouped by type and how they were handled administratively, included:

- Statewide child supplement;
- San Diego supplement; and
- Samples of telephone numbers associated with Korean and Vietnamese surnames;

The statewide child supplemental sample and the San Diego supplemental sample did not differ in presentation to the interviewers so did not require any additional training.

The hit rate for the Korean and Vietnamese surname sample was projected to be low. This allowed for the screening of these cases to be done primarily by English speaking interviewers who had the capability of moving cases into a specific language group, if necessary. This approach allowed the Asian interviewers to concentrate more fully on cases already identified as specific to their language. Refusal cases from the surname sample were called for an initial conversion attempt by Korean speaking interviewers who had the capability to move the cases to another language if needed.

4.7 Training for Proxy Interviewing

For cases where a sampled adult was 65 or older and unable to be interviewed for physical or mental health reasons, the interviewer 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 as described in Chapter 2 to accommodate proxy interviews.

A group of selected interviewers were trained to conduct the 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. Cases identified as eligible for proxy interviews were grouped in a separate work class and delivered by the CATI system only to interviewers trained for proxy interviewing.

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, purging the sample of nonworking and business numbers, mailing advance letters, and handling inbound calls to Westat's CHIS 1-800 number. Data collection began July 11, 2005, and ended April 3, 2006.

5.1 Description of Samples and Timing of Field Period

5.1.1 Random-Digit-Dial Sample

A total of 550,274 telephone numbers was selected for the RDD sample (see *CHIS 2005 Methodology Series: Report 1 – Sample Design*). Of these, about 45 percent were removed before loading into CATI. Almost 10 percent (52,235) were eliminated because they were listed only in the Yellow Pages, and 36 percent (196,136) were eliminated by procedures to identify nonworking numbers. These numbers compare with about 12 percent business and 28 percent nonworking in the 2003 sample (before subsampling nonmailable numbers). The increase in the proportion of nonworking numbers reflects in part improved procedures by the sample vendor. (See Section 5.3, Table 5-3, for more detailed information on the exclusion of telephone numbers.)

The remaining 301,813 telephone numbers were sent to reverse directory services to attempt to match the selected telephone number to a mailing address. From this service, addresses were obtained for 66 percent (200,144), a slightly higher proportion than in 2003, again reflecting the sample vendor's improved procedures for identifying nonworking numbers.

The RDD sample for CHIS 2005 was selected and released to CATI in much the same way as in CHIS 2003. As in 2003 the target sample size increased during the field period as additional funding became available, and there were good estimates of the yield by stratum from the previous surveys. *CHIS 2005 Methodology Series: Report 1 – Sample Design* describes the selection process in detail; it is summarized here to demonstrate how the sample was fielded.

The initial CHIS 2005 RDD sample fielded (released to CATI) included 189,220 numbers, covering all strata. Throughout the field period, additional numbers were fielded, including three county supplements (Marin, Humboldt, Solano), two supplements to increase the yield of children (statewide and San Diego), a supplement to several of the largest strata, and reserve sample in selected strata to meet targets for completed adult interviews. These supplements accounted for another 112,247 telephone numbers released to CATI. Sixty percent of telephone numbers from the initial release and most other sample releases were designated as "conversion" cases; that is, if a respondent refused to complete the screening interview, another interviewer would call back to attempt to complete it unless the refusal was abusive or particularly hostile. The remaining 40 percent were designated as "no conversion" and were not called back after the initial screener refusal.

5.1.2 Surname Supplemental Samples

Supplemental samples were fielded for CHIS 2005 to increase the yield of adult Korean and Vietnamese interview. The samples were based on surname lists and published telephone numbers. A total of 4,191 numbers were fielded from these lists. These numbers were associated with likely Korean or Vietnamese surnames (the surname lists overlapped, so a selected number could have been likely Korean, likely Vietnamese, or likely either.) These numbers were fielded in late October 2005; more than 90 percent had addresses and all were designated as "conversion."

5.2 Sample Preparation

Before releasing sampled telephone numbers for interviewing, Westat arranged for purging out-of-scope telephone numbers. Table 5-1 shows the number and proportion of sampled telephone numbers excluded because they were identified as nonworking or business numbers by RDD stratum, and for the surname supplemental sample. See *CHIS 2005 Methodology Series: Report 1 – Sample Design* for more details on these procedures. Overall, just under 10 percent of sampled numbers were purged as businesses. The proportion of RDD numbers purged as business ranged from a low of 6.7 percent in Yuba County and the North Balance stratum to a high of 11.1 percent in Placer County. Another 36 percent of RDD numbers were identified as nonworking by automated dialing and detection of a tritone sound. The low was 24.8 percent in Nevada County and the high 50.2 percent in the North Balance stratum.

An advance letter signed by the CHIS Principal Investigator was sent for all sampled telephone numbers to which an address was available from reverse directory services. The advance letter (Appendix 1) used for the RDD samples was printed in English, Spanish, Chinese, Korean, and Vietnamese. For the Korean and Vietnamese supplemental samples, the letter was printed in English and the appropriate language. CHIS 2005 included an experiment with survey sponsorship. Most letterhead included logos from both UCLA and the National Cancer Institute, while some had only the UCLA logo. In selected counties, another experiment tested the inclusion of a county-specific insert urging participation. See Section 6.9 for a description of the experiment and its results.

A different letter, also sent 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 English and one other language, which was Spanish for all cases except those in the surname supplemental samples or which had been identified as speaking one of the CHIS Asian languages.

Table 5-1 also shows the proportion of nonpurged numbers (those eligible to be called by Westat interviewers) for which addresses were obtained in reverse directory matches. Overall, about 66 percent of numbers yielded addresses in the matches performed with multiple vendors. There was not much variability by RDD stratum—Lake County had the highest address rate at 76.5 percent, and the North Balance stratum the lowest at 61.0 percent.

Table 5-1. Number and percentage of telephone numbers removed from sample before calling by reason, and number and proportion of numbers available to be called for which addresses were obtained

Stratum	Description	Sampled	Removed—Business		Removed—Nonworking		Sample Available to Call			
			Number	Percentage	Number	Percentage	Total	Address	No address	% w/ Addr.
1	Los Angeles	120,296	12,040	10.0%	40,135	33.4%	68,121	45,394	22,727	66.6%
2	San Diego	91,062	9,159	10.1%	32,481	35.7%	49,422	31,883	17,539	64.5%
3	Orange	38,067	4,062	10.7%	14,360	37.7%	19,645	12,214	7,431	62.2%
4	Santa Clara	20,965	1,778	8.5%	8,377	40.0%	10,810	6,994	3,816	64.7%
5	San Bernardino	14,196	1,390	9.8%	4,185	29.5%	8,621	5,621	3,000	65.2%
6	Riverside	13,633	1,175	8.6%	3,801	27.9%	8,657	5,661	2,996	65.4%
7	Alameda	16,751	1,439	8.6%	6,781	40.5%	8,531	5,625	2,906	65.9%
8	Sacramento	12,657	1,141	9.0%	4,650	36.7%	6,866	4,463	2,403	65.0%
9	Contra Costa	9,409	781	8.3%	3,662	38.9%	4,966	3,459	1,507	69.7%
10	Fresno	6,424	516	8.0%	2,507	39.0%	3,401	2,301	1,100	67.7%
11	San Francisco	13,148	1,185	9.0%	5,765	43.8%	6,198	3,835	2,363	61.9%
12	Ventura	8,176	903	11.0%	2,650	32.4%	4,623	2,920	1,703	63.2%
13	San Mateo	10,184	842	8.3%	4,363	42.8%	4,979	3,251	1,728	65.3%
14	Kern	6,882	567	8.2%	2,563	37.2%	3,752	2,616	1,136	69.7%
15	San Joaquin	4,195	396	9.4%	1,150	27.4%	2,649	1,836	813	69.3%
16	Sonoma	4,205	445	10.6%	1,273	30.3%	2,487	1,833	654	73.7%
17	Stanislaus	3,750	336	9.0%	1,121	29.9%	2,293	1,686	607	73.5%
18	Santa Barbara	6,334	677	10.7%	2,456	38.8%	3,201	2,045	1,156	63.9%
19	Solano	11,879	954	8.0%	3,754	31.6%	7,171	5,290	1,881	73.8%
20	Tulare	4,946	358	7.2%	2,110	42.7%	2,478	1,747	731	70.5%
21	Santa Cruz	4,862	424	8.7%	1,770	36.4%	2,668	1,822	846	68.3%
22	Marin	38,003	3,540	9.3%	15,411	40.6%	19,052	12,505	6,547	65.6%
23	San Luis Obispo	4,492	468	10.4%	1,343	29.9%	2,681	1,810	871	67.5%
24	Placer	4,817	534	11.1%	1,378	28.6%	2,905	1,802	1,103	62.0%
25	Merced	3,885	351	9.0%	1,219	31.4%	2,315	1,721	594	74.3%
26	Butte	3,014	288	9.6%	792	26.3%	1,934	1,415	519	73.2%
27	Shasta	3,387	368	10.9%	985	29.1%	2,034	1,385	649	68.1%
28	Yolo	4,071	418	10.3%	1,289	31.7%	2,364	1,625	739	68.7%
29	El Dorado	4,221	382	9.0%	1,274	30.2%	2,565	1,767	798	68.9%
30	Imperial	4,690	444	9.5%	1,627	34.7%	2,619	1,849	770	70.6%

Table 5-1. Number and percentage of telephone numbers removed from sample before calling by reason, and number and proportion of numbers called for which addresses were obtained (continued)

Stratum	Description	Sampled	Removed—Business		Removed—Nonworking		Sample Available to Call			
			Number	Percentage	Number	Percentage	Total	Address	No address	% w/ Addr.
31	Napa	5,293	565	10.7%	1,680	31.7%	3,048	2,088	960	68.5%
32	Kings	3,747	310	8.3%	1,160	31.0%	2,277	1,647	630	72.3%
33	Madera	3,960	346	8.7%	1,371	34.6%	2,243	1,393	850	62.1%
34	Monterey	7,681	684	8.9%	3,287	42.8%	3,710	2,425	1,285	65.4%
35	Humboldt	6,283	500	8.0%	2,594	41.3%	3,189	2,290	899	71.8%
36	Nevada	2,937	287	9.8%	728	24.8%	1,922	1,258	664	65.5%
37	Mendocino	3,261	290	8.9%	1,104	33.9%	1,867	1,382	485	74.0%
38	Sutter	3,477	314	9.0%	1,085	31.2%	2,078	1,442	636	69.4%
39	Yuba	3,090	206	6.7%	1,172	37.9%	1,712	1,240	472	72.4%
40	Lake	3,107	254	8.2%	1,051	33.8%	1,802	1,378	424	76.5%
41	San Benito	3,823	342	8.9%	1,212	31.7%	2,269	1,541	728	67.9%
42	Tehama, Glen, Colusa	2,976	288	9.7%	964	32.4%	1,724	1,240	484	71.9%
43	North Balance	4,120	276	6.7%	2,068	50.2%	1,776	1,084	692	61.0%
44	Sierra Balance	3,918	302	7.7%	1,428	36.4%	2,188	1,361	827	62.2%
	Total RDD	550,274	52,325	9.5%	196,136	35.6%	301,813	200,144	101,669	66.3%
	Surname Samples	4,878	10	0.2%	677	13.9%	4,191	3,854	337	92.0%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

5.3 Sample Management

All of the RDD cases were classified by whether they were designated for refusal conversion at the screener stage or not and whether an address was obtained from directory services. Cases designated for conversion were fielded before those that were not. Cases with addresses were divided into "release groups," or random subsets of the overall samples. They 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 given the same priority within the CATI scheduler.

Within the CATI system, active and completed cases were allocated into work classes, which are divisions of the sample that are to be worked by interviewers with special training or skills. Westat's CATI scheduler treats each work class as an independent sample. Work classes were given priority order for delivery of work to qualified interviewers. For example, a refusal converter would always be delivered a refusal work class case if one was available before being given a case from the default work class. The CHIS 2005 work classes were defined as follows:

- **Default—**All RDD cases on initial release, and continuing RDD and county supplemental 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;

- **Hearing/Speech—**Any RDD or county supplemental sample case in which a respondent was determined to have difficulty communicating because of hearing or speech impairment;

- **Language (Spanish)—**Any case determined or suspected to require a Spanish bilingual interviewer to re-contact; available only to the appropriate bilingual interviewers;

- **Language (Mandarin, Cantonese, Vietnamese, and Korean)—**All RDD cases determined or suspected to require a Mandarin, Cantonese, Vietnamese, or Korean bilingual interviewer to re-contact; available only to the appropriate bilingual interviewers;

- **Language (Other)—**Any RDD or county supplemental sample case determined or suspected to require contact in a language other than Spanish, Mandarin, Cantonese,

Korean, or Vietnamese; available to bilingual interviewers for verification of language spoken by the respondent;

- **Surname Supplemental Sample (Vietnamese and Korean)—**This supplemental sample was loaded in the default work class for screening by all interviewers, and assigned to the Vietnamese or Korean work class if appropriate after contact; and

- **Proxy Interviews—**For sampled adults 65 or older who could not complete the interview because of poor health or physical limitations, selected interviewers attempted to complete an interview with a proxy respondent in the household.

Toward the end of the field period, Westat 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. This 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 2005 Methodology Series: Report 1 – Sample Design* for a discussion of meeting the target numbers of completed adult and child interviews by stratum.

5.4 Inbound Toll-Free Calls

Westat maintained a toll-free number for respondents to call with questions about the survey. The toll-free line was staffed weekdays from 9 a.m. to midnight Eastern Time, Saturdays from 10 a.m. – 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 July 2005 and the end in March 2006 1,582 calls were made to the toll-free number[3]. Forty-one of these were calling to refuse participation, three reported that the sampled adult was too ill to participate, and one reported that the sampled adult was deceased. The vast majority of the other calls were made 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. Westat 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 Westat in response to these calls. Westat followed up on any calls complaining about an interviewer's behavior by identifying the interviewer and reviewing the case with her or him.

[3] Three additional calls were received on a separate number from respondents reached by the predictive dialing vendor (see Section 6.3).

6 DATA COLLECTION RESULTS

This chapter describes the results of the CHIS 2005 data collection, first presenting detailed tables of outcomes at each interview level, and then discussing procedures to increase response once various interim outcomes were encountered. The chapter discusses separate strategies for answering machines, "ring no answers," callbacks, language problems, and refusals. It also presents the results of methodological experiments conducted as part of CHIS 2005.

6.1 Detailed Results by Outcome

Interviewers assign a result code to each attempt to reach a sampled telephone number. The codes are divided into interim (numeric) and final (alpha) codes. During data collection, each case is tracked according to its most recent result code. Cases with interim codes are typically managed automatically by the scheduler according to preset parameters, such as how to work through "time slices" (see Section 6.3) and how long to wait before re-contacting an initial refusal. Problem cases (result codes beginning with "8") require manual intervention before they are re-fielded.

Cases assigned certain final result codes are often re-fielded, but these actions require specific decisions and return of cases to the active scheduler. For example, cases with no contact after seven calls were given a final status of "NA"; if the only contact over seven calls was an answering matching, the code "NM" was assigned. Groups of NA and NM cases were periodically re-fielded for an additional set of seven calls each[4]. Once a case resulted in some human contact, it was no longer eligible for a final NA or NM code.

Initial refusals (interim codes beginning with "2") were moved to the refusal work class and generally not called again for 2 weeks. An exception for screener refusals was that telephone numbers designated as "no conversion" were considered final – "R1" – after the initial refusal. Initial refusals that were considered hostile or abusive received a final result code of "RB." If a case received a second refusal, it was also coded as RB. Some RBs were re-fielded for a third attempt. If a third refusal was encountered, the case was coded "R3."

[4] Most NA/NM cases refielded after 7 calls were sent to a vendor for predictive dialing attempted contact (see Section 6.3).

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 codes beginning with "M" (maximum calls), with the actual designation depending on what else had happened during their call history.

Tables 6-1, 6-3, 6-5, and 6-6 present the complete final result code dispositions, by sample, for the screener, adult, child, and adolescent interviews, respectively. The following sections discuss these results by instrument.

6.1.1 Screening Interview

As shown in Table 6-1a, well over half of the sampled RDD telephone numbers were determined to be out of scope, either because they were nonresidential or nonworking. More than 78 percent of the out-of-scope cases were identified before the sample was fielded (NB and NT results, see Table 5-1) and the remainder through interviewer calls (NR, NW, and OD results). The state child supplemental sample had a slightly higher proportion of out-of-scope cases than the main RDD or San Diego child supplemental samples.

Eligibility criteria for the main RDD sample were quite limited; only 5 cases were determined to be ineligible during the screener because more than nine unrelated adults lived in the household, and 44 where there were no adults in the household. For the two child supplemental samples, households without children under age 12 were considered ineligible. The eligibility rates (completed screeners with households including children divided by all completed screeners) for the state child supplement and San Diego supplement were about 28 percent and 24 percent, respectively.

The completion rate, or sample yield, is simply the ratio of completed screeners for eligible households to the total sample. Since the denominator includes out-of-scope and ineligible cases, the completion rate is considerably lower than the response rate (see *CHIS 2005 Methodology Series: Report 4 — Response Rates*), but is useful because it shows what sample size is needed to achieve a particular number of completed cases. The completion rate (top right-hand corner of each sample's columns) is 15 percent for the main RDD sample. This rate is down considerably from 2003, in part because "nonmailable" numbers were not subsampled, and in part because of lower response rates. The

cooperation rate, shown at the bottom of Table 6-1a, is 10 points lower than that in CHIS 2003. However, the cooperation rates for the child supplemental samples are above 60 percent. Historically, surveys where a substantial portion of households are screened out obtain substantially better cooperation than those where most screen in, even if the screening interviews are virtually identical as they are between the CHIS 2005 main RDD and child supplemental samples.

Table 6-1b presents the screener results for the surname samples, divided by surnames identified as Korean, as Vietnamese, and as either Korean or Vietnamese. Unlike previous CHIS cycles where the Korean surname samples were screened for Koreans and the Vietnamese sample for Vietnamese, all surname sample cases were screened for either Korean or Vietnamese ethnicity. The surname samples had considerably lower rates of out-of-scope cases, at about 27 percent. However, these rates are up from CHIS 2003, which had 21 percent out-of-scope for the Korean list sample and 16 percent for the Vietnamese list sample.

For the surname samples, households were eligible if one or more adults were of the target ethnicities. The eligibility rates (completed screeners with eligible households divided by completed screeners with both eligible and ineligible households) were 21 percent for the Korean-only surname sample, 51 percent for the Vietnamese-only, and 50 percent for the combined Korean-Vietnamese list. Despite the change in screening procedures, the eligibility rates are down from 2003, when the rate for the Korean sample was 45 percent and for the Vietnamese 54 percent.

The cooperation rate for the Vietnamese-only surname sample, at 47 percent, was 5 to 6 points lower than for the other two surname samples. Overall, the cooperation rate for the surname samples was comparable to that for the main RDD. In CHIS 2003, with no refusal conversion, the cooperation rates were 43 percent for the Korean sample and 49 percent for the Vietnamese sample. Thus, the Korean sample was about as cooperative in 2005 as 2003 after taking refusal conversion into account, while the Vietnamese sample was noticeably less cooperative.

Table 6-1a. Detailed results of CHIS 2005 data collection, screening interview, RDD sample

	MAIN RDD			STATE CHILD SUPPL.			SAN DIEGO CHILD SUPPL.		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
CS – COMPLETED SCREENER (C)	69,648		14.88%	1,142		4.80%	2,410		4.13%
NEVER CALLED	346		0.07%	0		0.00%	0		0.00%
Ineligible(I)									
IF – INELIGIBLE SCREENER; >9 UNRELATED ADULTS	5	10.20%		0	0.00%		0	0.00%	
IK -- INELIGIBLE SCREENER; CHILD SUPPL. NO KIDS	0	0.00%		2,987	99.83%		7,483	99.85%	
IS -- INELIGIBLE SCREENER; NO ELIGIBLE ADULTS	0	0.00%		0	0.00%		0	0.00%	
IZ -- INELIGIBLE SCREENER; NO ADULTS IN HH	44	89.80%		5	0.17%		11	0.15%	
Total Ineligible	49	100.00%	0.01%	2,992		12.58%	7,494		12.85%
Out of Scope									
NB – NON-RESIDENTIAL, BUSINESS PURGE	44,207	16.41%		2,210	15.65%		5,908	17.75%	
NR – NON-RESIDENTIAL PHONE NUMBER	20,776	7.71%		1,010	7.15%		2,374	7.13%	
NT – NON-WORKING, TRITONE MATCH	166,249	61.70%		8,625	61.08%		21,262	63.88%	
NW – NON-WORKING PHONE NUMBER	38,185	14.17%		2,276	16.12%		3,737	11.23%	
OD – DUPLICATE TELEPHONE NUMBER	11	0.00%		0	0.00%		2	0.01%	
Total Out of Scope	269,428		57.55%	14,121		59.36%	33,283		57.05%
Noncontact									
NA – NO CONTACT MADE AFTER TIME SLICES FILLED	33,663	72.00%		1,760	72.31%		5,033	70.34%	
NM – NO CONTACT – REACHED ANSWERING MACHINE	13,091	28.00%		674	27.69%		2,122	29.66%	
Total Noncontact	46,754		9.99%	2,434		10.23%	7,155		12.26%
Refusal (R)									
R1: NO SCREENER REFUSAL CONVERSION	46,500	67.43%		0	0.00%		0	0.00%	
R3 – FINAL REFUSAL – RECEIVED 3 OR MORE 2S	14,878	21.57%		1,617	70.58%		3,094	51.26%	
RB – FINAL REFUSAL	2,661	3.86%		212	9.25%		417	6.91%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	2,153	3.12%		257	11.22%		594	9.84%	
RX – RE-RELEASED RB REACHED MAX CALL LIMIT	2,770	4.02%		205	8.95%		1,931	31.99%	
Total Refusal	68,962		14.73%	2,291		9.63%	6,036		10.35%
Other Nonresponse									
LH – FINAL SCRNRSLT HEARING AND SPEECH PROBLEM	144	1.11%		9	1.11%		12	0.61%	
LM – SCRNRSLT PROBLEM REACHED MAX CALLS	4,469	34.49%		339	41.90%		693	35.34%	
LP – FINAL SCRNRSLT PROBLEM	1,319	10.18%		93	11.50%		128	6.53%	
MC – MAXIMUM CALLS	6,799	52.47%		355	43.88%		1,094	55.79%	
ML – MAXIMUM CALLS – SCRNRSLT PROB IN HH	4	0.03%		0	0.00%		1	0.05%	
NO – OTHER NON-RESPONSE	224	1.73%		13	1.61%		33	1.68%	
Total Other Nonresponse	12,959		2.77%	809		3.40%	1,961		3.36%
TOTAL	468,146		100.00%	23,789		100.00%	58,339		100.00%
ELIGIBILITY RATE (C / (C+I))			99.93%			27.62%			24.33%
COOPERATION RATE ((C+I) / (C+I+R))			50.27%			64.34%			62.13%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Table 6-1b. Detailed results of CHIS 2005 data collection, screening interview, surname samples

	KOREAN LIST			VIETNAMESE LIST			KOREAN/VIETNAMESE LIST		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
CS – COMPLETED SCREENER (C)	161		8.79%	205		14.26%	248		15.42%
NEVER CALLED	0		0.00%	0		0.00%	0		0.00%
Ineligible(I)	0			0			0		
IF – INELIGIBLE SCREENER; >9 UNRELATED ADULTS	0	0.00%		0	0.00%		0	0.00%	
IK -- INELIGIBLE SCREENER; CHILD SUPPL. NO KIDS	0	0.00%		0	0.00%		0	0.00%	
IS -- INELIGIBLE SCREENER; NO ELIGIBLE ADULTS	390	99.74%		196	50.13%		244	62.40%	
IZ -- INELIGIBLE SCREENER; NO ADULTS IN HH	1	0.26%		0	0.00%		2	0.51%	
Total Ineligible	391	100.00%	21.34%	196	50.13%	13.63%	246	62.92%	15.30%
Out of Scope				0			0		
NB – NON-RESIDENTIAL, BUSINESS PURGE	3	16.41%		2	16.41%		5	16.41%	
NR – NON-RESIDENTIAL PHONE NUMBER	55	7.71%		31	7.71%		35	7.71%	
NT – NON-WORKING, TRITONE MATCH	260	61.70%		192	61.70%		225	61.70%	
NW – NON-WORKING PHONE NUMBER	175	14.17%		166	14.17%		173	14.17%	
OD – DUPLICATE TELEPHONE NUMBER	0	0.00%		0	0.00%		0	0.00%	
Total Out of Scope	493		26.91%	391		27.19%	438		27.24%
Noncontact				0			0		
NA – NO CONTACT MADE AFTER TIME SLICES FILLED	60	40.00%		34	36.56%		40	40.40%	
NM – NO CONTACT – REACHED ANSWERING MACHINE	90	60.00%		59	63.44%		59	59.60%	
Total Noncontact	150		8.19%	93		6.47%	99		6.16%
Refusal (R)				0			0		
R1: NO SCREENER REFUSAL CONVERSION	0	0.00%		0	0.00%		0	0.00%	
R3 – FINAL REFUSAL – RECEIVED 3 OR MORE 2S	55	11.29%		120	26.32%		72	15.55%	
RB – FINAL REFUSAL	284	58.32%		295	64.69%		347	74.95%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	48	9.86%		28	6.14%		43	9.29%	
RX – RE-RELEASED RB REACHED MAX CALL LIMIT	100	20.53%		13	2.85%		1	0.22%	
Total Refusal	487		26.58%	456		31.71%	463		28.79%
Other Nonresponse				0			0		
LH – FINAL SCRNRSLT HEARING AND SPEECH PROBLEM	0	0.00%		0	0.00%		0	0.00%	
LM – SCRNRSLT PROBLEM REACHED MAX CALLS	70	46.67%		30	30.93%		40	35.09%	
LP – FINAL SCRNRSLT PROBLEM	40	26.67%		26	26.80%		28	24.56%	
MC – MAXIMUM CALLS	39	26.00%		40	41.24%		44	38.60%	
ML – MAXIMUM CALLS – SCRNRSLT PROB IN HH	0	0.00%		0	0.00%		0	0.00%	
NO – OTHER NON-RESPONSE	1	0.67%		1	1.03%		2	1.75%	
Total Other Nonresponse	150		8.19%	97		6.75%	114		7.09%
TOTAL	1,832		100.00%	1,438		100.00%	1,608		100.00%
ELIGIBILITY RATE (C / (C+I))			29.17%			51.12%			50.20%
COOPERATION RATE ((C+I) / (C+I+R))			53.13%			46.79%			51.62%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Table 6-2a presents a comparison of CHIS 2001, 2003, and 2005 screener data collection results. The proportion of out-of-scope cases has continued to increase over time, in part because of changes in the sample design. The proportion of out-of-scope cases identified by the sample vendor (NB/NT) as compared with the proportion identified by interviewers (NR/NW) has grown larger over time as the vendor has improved its procedures for identifying business and nonworking numbers. The proportion of noncontact and other nonresponse cases has remained fairly stable, and the proportion of refusals was up only slightly between 2003 and 2005. Table 6-2b presents the same comparisons without the out-of-scope cases. Here we see the proportion of noncontact cases increasing between 2003 and 2005, at least in part because of the change in the sample design, and a substantial increase in the proportion of refusals from 2003 to 2005.

Table 6-2a. Comparison of RDD screener outcomes between CHIS 2005, CHIS 2003, and CHIS 2001

	CHIS 2005		CHIS 2003		CHIS 2001	
	Number	Rate	Number	Rate	Number	Rate
Completed Screeners	69,648	14.88%	66,243	21.00%	82,009	27.80%
Ineligible	49	0.01%	741	0.20%	2	0.00%
Out of Scope	269,428	57.55%	161,982	51.40%	140,675	47.60%
NB/NT	210,456	44.96%	112,200	35.60%	71,759	24.30%
NR/NW	58,972	12.60%	49,765	15.80%	68,912	23.30%
Noncontact	46,754	9.99%	30,232	9.60%	30,548	10.30%
Refusal	68,962	14.73%	44,079	14.00%	32,295	10.90%
Other Nonresponse	12,959	2.77%	12,157	3.90%	9,785	3.30%
Total	468,146		315,434		295,314	

Table 6-2b. CHIS RDD screener outcomes excluding out-of-scope cases

	CHIS 2005		CHIS 2003		CHIS 2001	
	Number	Rate	Number	Rate	Number	Rate
Completed Screeners	69,648	35.1%	66,243	43.2%	82,009	53.0%
Ineligible	49	0.0%	741	0.5%	2	0.0%
Noncontact	46,754	23.6%	30,232	19.7%	30,548	19.8%
Refusal	68,962	34.8%	44,079	28.7%	32,295	20.9%
Other Nonresponse	12,959	6.5%	12,157	7.9%	9,785	6.3%
Total	198,372		153,452		154,639	

Note: This table excludes noncalled numbers and a concomitant proportion of purged (NB/NT) numbers for CHIS 2003. CHIS 2005 numbers are for the main RDD sample only.

Source: UCLA Center for Health Policy Research, 2001, 2003, and 2005 California Health Interview Survey

6.1.2 Adult Extended Interview

The number of completed screeners becomes the total number of cases available for the adult extended interview. The results of data collection efforts for the adult extended interview in the RDD samples are shown in Table 6-3a, for the surname samples in Table 6-3b. In Table 6-3b, the overlapping portion of the surname sample (both Korean and Vietnamese) is included under the Korean sample.

Adult extended interviews were completed for 59 percent of RDD sample adults, down 4 points from 2003. The CHIS team decided that it would use data from partially completed adult interviews, so long as the interview went at least through Section J. Less than 1 percent of all adult interviews counted as complete were only partially done (CP). The proportion of refusals in the 2005 RDD adult sample (22 percent) was up 5 points from 2003, accounting for the reduction in completed interviews. The proportion of other nonresponse (17 percent) was down one point.

Completion rates for the child supplemental samples (46 percent statewide and 47 percent in San Diego County) were lower than for the main RDD samples, in part because of ineligible adults (discovered to have no children in household). The primary reason for the lower completion rate was "other nonresponse," accounting for 25 (statewide) and 24 (San Diego) percent of the child samples as compared with 17 percent for the main RDD. Nonresponse is typically higher in households with children, as they are more likely to have more than one adult, and hence to have an adult besides the screener respondent selected. See Section 6.1.3 for a discussion of results in child-first households, all of which had a sampled adult different from the screener respondent. Cooperation rates for the child samples (63 and 64 percent) were also substantially lower than for the main RDD; while refusals accounted for about the same proportion of cases overall across the samples, the denominator for the cooperation rate (number of completed interviews) was relatively smaller for the child supplemental samples.

Completion rates were lower for the Korean (49 percent) and Vietnamese (39 percent) surname samples than for the RDD. The Korean rate was down only slightly (4 points) from 2003, but the Vietnamese rate was down substantially (18 points). The eligibility rates had only small changes from 2003: the eligibility rate for the Korean sample rose from 92 to 95 percent, and for the Vietnamese sample fell from 91 to 90 percent. Both samples experienced more nonresponse in 2005 than in 2003; the cooperation rates dropped 18 to 20 percent. For the Korean sample, the decline was due to an increase in refusals, while for the Vietnamese sample both refusals and other nonresponse increased. The increase in

refusals may be related to differences in treatment of refusals at the screener level: in CHIS 2003, there was no screener refusal conversion for the surname samples, while conversion was attempted for all non-hostile screener refusals in 2005. Converted screener refusals may have been more likely to refuse the adult interview.

Table 6-3a. Detailed results of CHIS 2005 data collection, adult extended interview, RDD samples

	MAIN RDD			STATE CHILD SUPPL.			SAN DIEGO CHILD SUPPL.		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews									
CA – COMPLETED ADULT EXTENDED	40,727	99.16%		520	99.05%		1127	98.60%	
CP – ADULT PARTIAL COMPLETE – FINISHED	347	0.84%		5	0.95%		16	1.40%	
Total Completed Interviews	41,074		58.97%	525		45.97%	1,143		47.43%
Ineligible									
IA – INELIGIBLE AGE FOR ADULT EXTENDED	37	100.00%		0	0.00%		3	4.35%	
IN – INELIGIBLE ADULT RACE FOR SURNAME SAMPLE	0	0.00%		0	0.00%		0	0.00%	
	0	0.00%		45	100.00%		66	95.65%	
Total Ineligible	37		0.05%	45		3.94%	69		2.86%
Out of Scope									
OE – OUT OF SCOPE ENUMERATION ERROR	1,110	95.03%		20	95.24%		37	97.37%	
OO – OTHER OUT OF SCOPE	58	4.97%		1	4.76%		1	2.63%	
Total Out of Scope	1,168		1.68%	21		1.84%	38		1.58%
Refusal									
R3 – FINAL REFUSAL RECEIVED 3 OR MORE 2S	26	0.17%		0	0.00%		1	0.17%	
RB – FINAL REFUSAL	13,509	86.56%		202	77.39%		476	81.51%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	2,071	13.27%		59	22.61%		107	18.32%	
Total Refusal	15,606		22.41%	261		22.85%	584		24.23%
Other Nonresponse									
LH – FINAL SCRNRSLT HEARING AND SPEECH PROBLEM	196	1.67%		2	0.69%		2	0.35%	
LM – SCRNRSLT PROBLEM REACHED MAX CALLS	583	4.96%		26	8.97%		52	9.03%	
LP – FINAL SCRNRSLT PROBLEM	232	1.97%		7	2.41%		7	1.22%	
MC – MAXIMUM CALLS	3,765	32.01%		48	16.55%		116	20.14%	
ML – MAXIMUM CALLS – SCRNRSLT PROB IN HH	3,175	26.99%		119	41.03%		209	36.28%	
MR – MAXIMUM CALLS – REFUSAL IN HH	993	8.44%		34	11.72%		79	13.72%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	68	0.58%		1	0.34%		2	0.35%	
ND – RESPONDENT DECEASED	54	0.46%		0	0.00%		0	0.00%	
NF – RESPONDENT NOT FOUND AT CALL BACK	117	0.99%		4	1.38%		10	1.74%	
NO – OTHER NONRESPONSE	2,123	18.05%		45	15.52%		95	16.49%	
NR – NONRESIDENTIAL PHONE NUMBER	9	0.08%		1	0.34%		0	0.00%	
NS – SUBJECT SICK/INCAPACITATED	447	3.80%		3	1.03%		4	0.69%	
NW – NONWORKING PHONE NUMBER	1	0.01%		0	0.00%		0	0.00%	
Total Other Nonresponse	11,763		16.89%	290		25.39%	576		23.90%
TOTAL	69,648		100.00%	1,142		100.00%	2,410		100.00%
ELIGIBILITY RATE			99.91%			92.11%			94.31%
COOPERATION RATE			72.42%			63.18%			63.64%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Table 6-3b. Detailed results of CHIS 2005 data collection, adult extended interview, surname samples

	KOREAN SURNAME			VIETNAMESE SURNAME		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews						
CA – COMPLETED ADULT EXTENDED	197	98.99%		72	91.14%	
CP – ADULT PARTIAL COMPLETE – FINISHED	2	1.01%		7	8.86%	
Total Completed Interviews	199		48.66%	79		38.54%
Ineligible						
IA – INELIGIBLE AGE FOR ADULT EXTENDED	0	0.00%		1	11.11%	
IN – INELIGIBLE ADULT RACE FOR SURNAME SAMPLE	10	100.00%		8	88.89%	
	0	0.00%		0	0.00%	
Total Ineligible	10		2.44%	9		4.39%
Out of Scope						
OE – OUT OF SCOPE ENUMERATION ERROR	6	85.71%		3	100.00%	
OO – OTHER OUT OF SCOPE	1	14.29%		0	0.00%	
Total Out of Scope	7		1.71%	3		1.46%
Refusal						
R3 – FINAL REFUSAL RECEIVED 3 OR MORE 2S	0	0.00%		0	0.00%	
RB – FINAL REFUSAL	97	88.18%		41	87.23%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	13	11.82%		6	12.77%	
Total Refusal	110		26.89%	47		22.93%
Other Nonresponse						
LH – FINAL SCRNRSLT HEARING AND SPEECH PROBLEM	3	3.61%		1	1.49%	
LM – SCRNRSLT PROBLEM REACHED MAX CALLS	2	2.41%		1	1.49%	
LP – FINAL SCRNRSLT PROBLEM	0	0.00%		0	0.00%	
MC – MAXIMUM CALLS	9	10.84%		8	11.94%	
ML – MAXIMUM CALLS – SCRNRSLT PROB IN HH	40	48.19%		29	43.28%	
MR – MAXIMUM CALLS – REFUSAL IN HH	7	8.43%		8	11.94%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	0	0.00%		0	0.00%	
ND – RESPONDENT DECEASED	0	0.00%		1	1.49%	
NF – RESPONDENT NOT FOUND AT CALL BACK	2	2.41%		0	0.00%	
NO – OTHER NONRESPONSE	16	19.28%		13	19.40%	
NR – NONRESIDENTIAL PHONE NUMBER	0	0.00%		0	0.00%	
NS – SUBJECT SICK/INCAPACITATED	4	4.82%		6	8.96%	
NW – NONWORKING PHONE NUMBER	0	0.00%		0	0.00%	
Total Other Nonresponse	83		20.29%	67		32.68%
TOTAL	409		100.00%	205		100.00%
ELIGIBILITY RATE			95.22%			89.77%
COOPERATION RATE			62.38%			58.52%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

Thus far, the discussion has considered cooperation, eligibility, and completion rates for the screener and adult interviews separately. In fact, it is the combination of these rates that is most instructive in judging performance of the samples. Table 6-4 presents the combined eligibility completion, and cooperation rates[5] for each sample for CHIS 2005, 2003, and 2001. While the

[5] Screener cooperation rates are not strictly comparable across the years. Starting in 2003, refusals were subsampled for conversion in the RDD, which accounts in part for the drop in cooperation rate between 2001 and 2003. For the surname samples, there was no follow-up of refusals in 2003. Other differences in the sample design may account for some part of the observed differences across samples and across years.

progression is not smooth over the years in each category, the general trends are consistently downward, with the exception of the RDD eligibility rate, which has remained at virtually 100 percent.

The combined completion (yield) rate provides a basic statistic for sample performance: how many sampled telephone numbers does it take to yield one completed adult interview? Note that the completion rate is a function of the cooperation and eligibility rates, and also includes residency and other nonresponse components. The main RDD sample had a combined yield rate of about 9 percent, or about 11 sampled telephone numbers per adult completed interview. This rate has been cut in half since 2001. While a change in the 2005 sample design (not subsampling "nonmailable" numbers) affected this rate, the bulk of the decrease is due to other factors, notably an increase in nonresponse. The Korean surname sample has had a relatively smaller decrease in yield (7 percent in 2005 as compared with 9 percent in 2001), but the Vietnamese surname sample yield in 2005 was a third of that in 2001. Both eligibility and cooperation rates have dropped dramatically since 2001 for the two surname samples.

The decline in completion or yield rates generally means that the data collection has become less efficient, that is, more resources are required to complete a single interview than in previous years. Two factors somewhat offsetting this trend are the increased efficiency of the sample vendor's procedures for identifying nonhousehold numbers as previously discussed, and the use of a separate vendor to work noncontact cases through predictive dialing (see Section 6.3). The overall trends in efficiency are discussed in Section 6.8.

Table 6-4. CHIS 2005, 2003, and 2001 eligibility, completion, and cooperation rates combined across screening and adult interviews

	Eligibility rate			Completion (yield) rate			Cooperation rate		
	Screener	Adult extended	Combined	Screener	Adult extended	Combined	Screener	Adult extended	Combined
RDD 2005	99.93%	99.91%	99.84%	14.88%	58.97%	8.77%	50.27%	72.42%	36.41%
RDD 2003	98.89%	99.90%	98.79%	18.86%	63.13%	11.91%	60.31%	78.48%	47.33%
RDD 2001	100.00%	99.90%	99.90%	27.80%	66.00%	18.30%	71.70%	78.60%	56.36%
Korean 2005	29.17%	95.22%	27.78%	14.26%	48.66%	6.94%	53.13%	62.38%	33.14%
Korean 2003	44.84%	91.80%	41.17%	9.87%	52.58%	5.19%	42.87%	80.00%	34.30%
Korean 2001	39.30%	97.90%	38.50%	14.20%	63.20%	9.00%	74.20%	84.50%	62.70%
Vietnamese 2005	51.12%	89.77%	45.89%	15.42%	38.54%	5.94%	46.79%	58.52%	27.38%
Vietnamese 2003	54.03%	91.20%	49.28%	12.06%	56.72%	6.84%	49.47%	77.55%	38.36%
Vietnamese 2001	91.90%	94.90%	87.20%	32.60%	55.50%	18.10%	69.50%	78.60%	54.63%

Source: UCLA Center for Health Policy Research, 2005, 2003, and 2001 California Health Interview Survey

6.1.3 Child Extended Interview

The completion rate for the child interview (Table 6-5a) in the main RDD sample was about 78 percent, down about 8 points from CHIS 2003, with increases in both refusal and other nonresponse rates. Completion rates for the child supplemental samples were slightly lower (3 points lower for the state sample and 1 point lower for the San Diego sample). However, a change in the data collection protocol for 2005 that allowed children to be sampled and child interviews to be conducted before adult interviews under certain circumstances increased the relative yield of child interviews (described in Sections 2.1 and 2.3). In the CHIS 2003 RDD sample, the ratio of children sampled to adults sampled was 14.9 percent, and of child interviews to adult interviews was 20.5 percent; in the CHIS 2005 main RDD sample, these ratios were 17.7 percent and 23.6 percent.

As shown in Table 6-5b, the completion rates were lower for the surname samples than for the RDD. The completion rate for the Korean surname sample (72 percent) was actually 3 points higher than in CHIS 2003, but the rate for the Vietnamese surname sample (58 percent) was about 18 points lower than that in CHIS 2003. As with the adult interview with this sample, there was a substantial increase in both refusals and other nonresponse.

A reasonable question is whether the child-first procedure affected the completion rates as well as increasing the overall yield of child extended interviews. Almost half of the children sampled in CHIS 2005 were in child-first households. The completion rate for children sampled in these households

was 74.1 percent, as compared with 80.6 percent in non-child-first households. Thus, the overall child completion rate was affected negatively by the child-first procedure. But, some of the children sampled with this procedure were in households where no adult interview was conducted. In previous CHIS cycles, these children would not have been sampled. The completion rate among children sampled in households where no adult interview was ultimately completed was 60.6 percent, 2,597 out of 4,286. In all households where children were sampled and an adult interview was completed, the completion rate was 84.6 percent, just 1.3 points less than the 2003 RDD rate; in child-first households where the adult interview was completed, the completion rate was 96.8 percent. Thus, there is no evidence in the available data that the child first procedure had a negative effect on the rate at which child interviews were completed in households where children would have been sampled had the procedure not been in place.

Table 6-5a. Detailed results of CHIS 2005 data collection, child extended interview, RDD samples

	MAIN RDD			STATE CHILD SUPPL.			SAN DIEGO CHILD SUPPL.		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews									
CC – COMPLETED CHILD EXTENDED	9,605		77.87%	511		74.93%	1,160		77.28%
Ineligible									
IC – INELIGIBLE AGE FOR CHILD EXTENDED	69		0.56%	4		0.59%	4		0.27%
Out of Scope									
OE – OUT OF SCOPE ENUMERATION ERROR	56			5			6		
OO – OTHER OUT OF SCOPE	1			0			0		
Total Out of Scope	57		0.46%	5		0.73%	6		0.40%
Refusal									
R3 – FINAL REFUSAL, RECEIVED 3 OR MORE 2S	4	0.34%		0	0.00%		0	0.00%	
RB – FINAL REFUSAL	963	81.33%		54	80.60%		127	77.44%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	217	18.33%		13	19.40%		37	22.56%	
Total Refusal	1,184		9.60%	67		9.82%	164		10.93%
Other Nonresponse									
LH – HEARING AND SPEECH PROBLEM	2	0.14%		0	0.00%		0	0.00%	
LM – LANGUAGE PROBLEM REACHED MAX CALLS	24	1.69%		1	1.05%		7	4.19%	
LP – FINAL LANGUAGE PROBLEM	5	0.35%		1	1.05%		0	0.00%	
MC – MAXIMUM CALLS	336	23.66%		11	11.58%		29	17.37%	
ML – MAXIMUM CALLS – LANGUAGE PROB IN HH	603	42.46%		39	41.05%		59	35.33%	
MR – MAXIMUM CALLS – REFUSAL IN HH	226	15.92%		26	27.37%		55	32.93%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	24	1.69%		4	4.21%		2	1.20%	
NF – RESPONDENT NOT FOUND AT CALL BACK	4	0.28%		1	1.05%		1	0.60%	
NL – NOT LOCATABLE THROUGH TRACING	194	13.66%		11	11.58%		14	8.38%	
NO – OTHER NON-RESPONSE	1	0.07%		1	1.05%		0	0.00%	
NW – NON-WORKING PHONE NUMBER	1	0.07%		0	0.00%		0	0.00%	
Total Other Nonresponse	1,420		11.51%	95		13.93%	167		11.13%
TOTAL	12,335		100.00%	682		100.00%	1,501		100.00%
COOPERATION RATE			89.03%			88.41%			87.61%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

Table 6-5b. Detailed results of CHIS 2005 data collection, child extended interview, surname samples

	KOREAN SURNAME			VIETNAMESE SURNAME		
		Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews						
CC – COMPLETED CHILD EXTENDED	60		72.29%	22		57.89%
Ineligible						
IC – INELIGIBLE AGE FOR CHILD EXTENDED	2		2.41%	1		2.63%
Out of Scope						
OE – OUT OF SCOPE ENUMERATION ERROR	0			0		
OO – OTHER OUT OF SCOPE	0			0		
Total Out of Scope	0		0.00%	0		0.00%
Refusal						
R3 – FINAL REFUSAL, RECEIVED 3 OR MORE 2S	0	0.00%		0	0.00%	
RB – FINAL REFUSAL	11	84.62%		6	100.00%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	2	15.38%		0	0.00%	
Total Refusal	13		15.66%	6		15.79%
Other Nonresponse						
LH – HEARING AND SPEECH PROBLEM	0	0.00%		0	0.00%	
LM – LANGUAGE PROBLEM REACHED MAX CALLS	0	0.00%		0	0.00%	
LP – FINAL LANGUAGE PROBLEM	0	0.00%		0	0.00%	
MC – MAXIMUM CALLS	1	12.50%		0	0.00%	
ML – MAXIMUM CALLS – LANGUAGE PROB IN HH	6	75.00%		5	55.56%	
MR – MAXIMUM CALLS – REFUSAL IN HH	1	12.50%		1	11.11%	
MT – MAXIMUM NUMBER OF CALL ATTEMPTS	0	0.00%		0	0.00%	
NF – RESPONDENT NOT FOUND AT CALL BACK	0	0.00%		0	0.00%	
NL – NOT LOCATABLE THROUGH TRACING	0	0.00%		3	33.33%	
NO – OTHER NON-RESPONSE	0	0.00%		0	0.00%	
NW – NON-WORKING PHONE NUMBER	0	0.00%		0	0.00%	
Total Other Nonresponse	8		9.64%	9		23.68%
TOTAL	83		100.00%	38		100.00%
COOPERATION RATE			82.19%			78.57%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey.

Whether the child-first procedure affected the completion rate for adult interviews is a separate question and cannot be answered definitively due to the absence of an experiment. Table 6-6 compares cooperation and completion rates for adult interviews between CHIS 2003 and CHIS 2005, by whether the sampled adult was also the screener respondent and whether children were reported in the screener. All of the child-first cases had a sampled adult who was not the screener respondent and reported children in the household. Cooperation and completion rates were lower in 2005 than 2003 for all groups, but the group including child-first cases saw a larger decline than the other three groups, about 2 percentage points more in completion rate and 4 points in cooperation rate. These results are consistent with a hypothesis that having the child interview done first would dissuade some adult respondents from cooperating. If we assume that the decline in cooperation and completion rates for this group would have been consistent with that for the other groups had the child-first procedure not been used, adding the child-first procedure seems to have led to about 200 fewer adult interviews, or about half of one percentage point on the overall completion rate.

Table 6-6. Cooperation and Completion rates, adult extended interview, by whether children 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	-5.0%	-4.0%	-9.4%	-5.8%	-5.2%
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	-5.3%	-3.8%	-7.3%	-4.7%	-4.8%

6.1.4 Adolescent Extended Interview

Table 6-7 presents data collection results for the adolescent interviews in the RDD samples. All of the numbers and percentages in the upper portion of the table refer to sampled adolescents for whom permission to interview was obtained from a responsible adult. The bottom three rows add the permission dimension.

The completion rate among adolescents for the RDD sample (78 percent) was 5 points lower than that for CHIS 2003, and the proportion of permission-giving adults (PGA's) refusing permission (33 percent) was up almost 6 points from 2003. The combined completion rate (completed adolescent interviews divided by all adolescents sampled, 52 percent) was thus down about 8 points from 2003. The

adolescent sample sizes in the child supplemental samples are relatively small, and the completion rates somewhat lower than those of the main RDD, because of lower rates of permission-giving. There were very few adolescents selected in the surname samples. In the Korean surname sample, 14 of 17 adolescents for whom permission was obtained completed the interview (82 percent), and all 6 Vietnamese sample adolescents with permission completed the interview. For both surname samples, however, the permission-giving rate was only 43 percent, about 24 percentage points lower than for the main RDD.

The child-first procedure also affected the adolescent yield, since adolescents could be sampled and interviewed in child-first households before the adult interviews, although not to the extent of the child yield. In the CHIS 2003 RDD sample, the ratio of adolescents sampled to adults sampled was 8.1 percent, and of adolescent interviews to adult interviews was 9.6 percent. In the CHIS 2005 main RDD sample, these ratios were 10.4 percent and 9.1 percent, respectively. Thus, while relatively more adolescents were sampled than in 2003, the relative yield was lower because of the drop in completion rate.

As with the child interview, the child-first procedure had a negative impact on adolescent completion rates, but the effect comes from the households where no adult interview was completed. Excluding child-first cases with no completed adult interview, the completion rates for the combined CHIS 2005 samples were 70 percent for permission (4 points higher than when including all cases), 79 percent for the adolescent interview (1 point higher), and 55 percent combined (2 points higher). In child-first households where the adult interview was completed, the completion rates were 81 percent, 90 percent, and 73 percent, respectively.

Table 6-7. Detailed results of CHIS 2005 data collection, adolescent extended interview, RDD samples

	MAIN RDD			STATE CHILD SUPPL.			SAN DIEGO CHILD SUPPL.		
		Percentage			Percentage			Percentage	
	Number	Within category	of Total	Number	Within category	of Total	Number	Within category	of Total
Completed Interviews									
CT – COMPLETED ADOLESCENT EXTENDED	3,739		77.81%	84		83.17%	186		76.54%
	9.1%								
Ineligible									
IT – INELIGIBLE AGE FOR ADOLESCENT EXTENDED	61		1.27%	2		1.98%	5		2.06%
Out of Scope									
OE – OUT OF SCOPE ENUMERATION ERROR	11	84.62%	0.23%	0		0.00%	0		0.00%
OO – OTHER OUT OF SCOPE	2	15.38%							
Total Out of Scope	13								
Refusal									
R3 – FINAL REFUSAL – RECEIVED 3 OR MORE 2S	1	0.18%		0	0.00%		0	0.00%	
RB – FINAL REFUSAL	489	88.11%		8	80.00%		18	81.82%	
RM – REFUSAL REACHED MAXIMUM CALL LIMIT	64	11.53%		2	20.00%		4	18.18%	
RT – ADOLESCENT REFUSED GENDER QUESTION	1	0.18%		0	0.00%		0	0.00%	
Total Refusal	555		11.55%	10		9.90%	22		9.05%
Other Nonresponse									
LH – FINAL SCRNRSLT HEARING AND SPEECH PROBLEM	3	0.69%		0	0.00%		0	0.00%	
LM – SCRNRSLT PROBLEM REACHED MAX CALLS	5	1.14%		0	0.00%		0	0.00%	
LP – FINAL SCRNRSLT PROBLEM	122	27.92%		0	0.00%		7	23.33%	
MC – MAXIMUM CALLS	168	38.44%		2	40.00%		17	56.67%	
ML – MAXIMUM CALLS – SCRNRSLT PROB IN HH	61	13.96%		2	40.00%		5	16.67%	
MR – MAXIMUM CALLS – REFUSAL IN HH	5	1.14%		0	0.00%		0	0.00%	
NF – NOT AVAILABLE IN FIELD PERIOD	6	1.37%		0	0.00%		0	0.00%	
NL – NOT LOCATABLE THROUGH TRACING	48	10.98%		1	20.00%		0	0.00%	
NO – OTHER NONRESPONSE	1	0.23%		0	0.00%		0	0.00%	
NS – SUBJECT SICK/INCAPACITATED	18	4.12%		0	0.00%		1	3.33%	
Total Other Nonresponse	437		9.09%	5		4.95%	30		12.35%
TOTAL	4,805		100.00%	101		100.00%	243		100.00%
COOPERATION RATE			87.07%			89.36%			89.42%
ADOLESCENTS SAMPLED	7,220			167			429		
PERMISSION NOT RECEIVED	2,415		33.45%	66		39.52%	186		43.36%
COMBINED COMPLETION RATE			51.79%			50.30%			43.36%

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

6.2 Answering Machines

Studies indicate that leaving a message on an answering machine seems to increase cooperation rates (e.g., Xu et al., 1993). Apparently the message acts as an advance letter in that it legitimizes the study, allows the respondent time to make an informed decision, and distinguishes the "survey telephone call" from telemarketing calls. Because of this finding in the literature, the message below was left the first time an answering machine was encountered at a dialed telephone number.

> "Hello, I'm calling for the University of California. We are doing a study about the health of the people of California and about health care. I am not asking for money—this is a scientific study called the California Health Survey.
>
> We will call you back in the next few days."

Table 6-8 shows the proportion of the sample with at least one answering machine contact at the screener and adult extended level for both CHIS 2005 and CHIS 2003, and the percentage point change from 2003 to 2005. Overall, more than one-third of all cases attempted at each level had at least one call reach an answering machine. Both the 2005 screener rate (43 percent) and the adult extended interview rate (39 percent) were up 3 points from 2003. At the low end of the RDD screening interview is Imperial County, with 31 percent of all cases having an answering machine contact; at the high end is Marin County, with about 50 percent. The North Balance stratum had the lowest rate for the extended interview, at 30 percent, and Marin County the highest, at 44 percent. Most counties showed an increase in the rate for the screening interview, headed by Lake County at a 6.5 point increase; among the counties with lower rates, San Mateo County declined the most, at just over 2 points. San Benito County showed the largest increase in answering machine contact at the extended interview level, at more than 9 points, while Shasta County had the largest decline at just under 2 points. The Korean and Vietnamese surname samples' answering machine rates were higher than the RDD sample overall for the screener and comparable to the RDD for the adult extended interview; both rates were substantially higher than those experienced in 2003.

Table 6-8. Proportion of numbers called at screener and adult extended level with at least one answering machine contact, CHIS 2005 and CHIS 2003

		Percentage of cases with at least one answering machine contact					
		Screener			Adult extended		
Stratum	Description	2005	2003	Diff.	2005	2003	Diff.
1	Los Angeles	41.66%	40.70%	0.96%	39.75%	37.10%	2.65%
2	San Diego	45.09%	43.10%	1.99%	41.95%	40.30%	1.65%
3	Orange	41.43%	39.50%	1.93%	40.55%	40.60%	-0.05%
4	Santa Clara	41.61%	43.20%	-1.59%	40.17%	39.30%	0.87%
5	San Bernardino	42.33%	44.10%	-1.77%	40.03%	39.20%	0.83%
6	Riverside	43.20%	42.70%	0.50%	39.65%	38.90%	0.75%
7	Alameda	42.90%	37.60%	5.30%	40.98%	35.80%	5.18%
8	Sacramento	43.45%	40.20%	3.25%	38.45%	38.30%	0.15%
9	Contra Costa	46.07%	45.70%	0.37%	41.41%	38.00%	3.41%
10	Fresno	35.55%	35.90%	-0.35%	32.20%	32.80%	-0.60%
11	San Francisco	40.96%	38.20%	2.76%	37.09%	36.40%	0.69%
12	Ventura	44.89%	44.40%	0.49%	43.29%	38.70%	4.59%
13	San Mateo	42.56%	44.70%	-2.14%	43.00%	41.00%	2.00%
14	Kern	37.21%	36.50%	0.71%	36.75%	29.20%	7.55%
15	San Joaquin	41.07%	38.70%	2.37%	36.86%	36.50%	0.36%
16	Sonoma	47.73%	43.60%	4.13%	37.12%	35.50%	1.62%
17	Stanislaus	40.17%	37.80%	2.37%	35.65%	34.00%	1.65%
18	Santa Barbara	43.05%	43.00%	0.05%	37.77%	33.90%	3.87%
19	Solano	45.95%	44.10%	1.85%	40.95%	39.70%	1.25%
20	Tulare	32.93%	32.30%	0.63%	33.87%	26.20%	7.67%
21	Santa Cruz	46.74%	42.30%	4.44%	42.14%	35.80%	6.34%
22	Marin	49.59%	45.50%	4.09%	43.64%	42.00%	1.64%
23	San Luis Obispo	39.35%	37.00%	2.35%	36.24%	36.10%	0.14%
24	Placer	45.61%	41.00%	4.61%	40.28%	36.80%	3.48%
25	Merced	39.14%	33.60%	5.54%	32.61%	32.90%	-0.29%
26	Butte	43.59%	39.00%	4.59%	37.64%	30.70%	6.94%
27	Shasta	41.59%	36.90%	4.69%	32.35%	34.00%	-1.65%
28	Yolo	40.40%	37.90%	2.50%	37.47%	32.40%	5.07%
29	El Dorado	44.02%	42.10%	1.92%	40.84%	37.50%	3.34%
30	Imperial	30.66%	28.20%	2.46%	31.75%	27.00%	4.75%
31	Napa	42.52%	39.60%	2.92%	38.88%	33.90%	4.98%
32	Kings	37.55%	34.90%	2.65%	31.37%	27.80%	3.57%
33	Madera	37.63%	33.70%	3.93%	34.33%	30.90%	3.43%
34	Monterey*	38.89%	37.80%	1.09%	37.01%	30.30%	6.71%
35	Humboldt*	42.27%	37.10%	5.17%	33.70%	30.40%	3.30%
36	Nevada *	47.19%	39.90%	7.29%	37.52%	37.20%	0.32%
37	Mendocino*	41.24%	37.50%	3.74%	33.06%	29.90%	3.16%
38	Sutter*	37.92%	37.40%	0.52%	36.59%	32.30%	4.29%
39	Yuba*	40.19%	37.40%	2.79%	31.85%	32.30%	-0.45%
40	Lake*	44.01%	37.50%	6.51%	35.22%	29.90%	5.32%
41	San Benito*	39.18%	37.80%	1.38%	39.52%	30.30%	9.22%
42	Tehama, Glen, Colusa	35.56%	35.10%	0.46%	31.14%	30.60%	0.54%
43	North Balance*	35.42%	36.60%	-1.18%	30.39%	26.60%	3.79%
44	Sierra Balance*	38.80%	37.50%	1.30%	36.95%	33.00%	3.95%
	RDD Total	42.71%	39.90%	2.81%	39.12%	36.20%	2.92%
	Korean List	48.97%	36.50%	12.47%	38.39%	29.60%	8.79%
	Vietnamese List	48.23%	35.00%	13.23%	42.44%	25.40%	17.04%

*These strata included other counties in 2003.

Source: UCLA Center for Health Policy Research, 2005 and 2003 California Health Interview Survey

6.3 Time Slice Strategy

If the initial call attempt resulted in "no answer," a busy signal, or an answering machine, the call scheduler would automatically place the telephone number into time slice queues so that additional calls would be made over several days at several different times of day. The goal is to find a time when someone would answer the telephone. The CHIS 2005 time slice strategy, as follows below, was revised only slightly from what was used in CHIS 2003.

The time slices were defined as: (1a) early weekdays, 9 a.m. to 2 p.m.; (1b) late weekdays, 2 p.m. to 6 p.m.; (2) early evening, 6 p.m. to 7:30 p.m.; (3) late evening, 7:30 p.m. to 9 p.m.; (4) Saturday, 10 a.m. to 6 p.m.; (5) Sunday, 2 p.m. to 9 p.m. The strategy consisted of a total of 14 calls if there was no contact with a person:

- four calls consisting of an early or late day, early evening, late evening, and weekend (either Saturday or Sunday), in any order;
- 1 week wait;
- three calls consisting of an early evening, late evening, and the weekend day not called in the preceding four calls, in any order;
- 1 week wait;
- four calls consisting of a an early or late day (whichever was not called in the first set), early evening, late evening, and weekend (either Saturday or Sunday), in any order;
- 1 week wait; and
- three calls consisting of an early evening, late evening, and the weekend day not called in the preceding 4 calls, in any order.

If, after these 14 calls, there was still no answer and there had been no answering machine contact, the telephone number was retired by coding it NA (all no answer or busy). Cases with at least one answering machine result received another four calls, following the pattern of the very first set of four. If none of these calls (a total of 18 altogether) resulted in a contact, the case is coded NM. The differences between this strategy and that employed in CHIS 2001 (also using a total of 14 calls) included more weekday evening and fewer weekday daytime calls and spacing the calls out over a longer period. Weekday evenings have the highest contact rates for households, and the extended overall field period

covers more situations where respondents may be away from home for some time. The only change from CHIS 2003 was separating the weekday calls into the early and late slices.

In CHIS 2005, most of the telephone numbers with no contact after the first 7 calls were sent to a vendor for further calling. This vendor used a predictive dialer, so that no operator (interviewer) was necessary for calls that were not answered by a live person. The vendor used the time slice strategy described above for the second set of 7 calls (and the third set of 4 for NM's), and the same set of result codes to record the outcome. If a call was answered by a live person, an operator would come on the line and ask whether the number was for business or household use. Numbers with answered calls were returned to Westat for further follow-up. The operator's script did not mention CHIS specifically.

The logic for sending the no-contact numbers out for predictive dialing is that numbers with no contact after 7 calls yield very little with further attempts. Table 6-9 demonstrates this logic, and provides information on the effects of sending the numbers out earlier in the process. The first column in Table 6-9 is the number of the call on which the first contact was made or, if no contact was made, the number of the last call attempted. The second column is the percentage of all ultimately completed screeners and ineligible determinations for cases with first contact on that call. (The completed screener or ineligibility determination may have happened on a later call.) The third column is the cumulative percentage of completed screeners and ineligibility determinations. By 7 calls, contact had been made with almost 96 percent of the cases that would ultimately be completed screeners or ineligible numbers. Another way of stating this is that all of the calls to no-contact cases after the first 7 yielded fewer than 4 percent of the total number of completed screeners and ineligible cases[6]. By 4 calls, contact had been made with about 89 percent of the cases ultimately completed.

[6] Note that not all of the cases with no contact after 7 calls received further follow-up, or the full follow-up. Some cases first fielded late in the study period ran out of time before receiving the full protocol.

Table 6-9. Completed screeners (including ineligibles) by number of call on which first contact was made

Number of calls to first contact	Completed cases	Percentage of all completes	
		This call number	Cumulative
1	46,259	55.24%	55.24%
2	16,329	19.50%	74.75%
3	7,451	8.90%	83.64%
4	4,388	5.24%	88.88%
5	2,696	3.22%	92.10%
6	1,789	2.14%	94.24%
7	1,247	1.49%	95.73%
8	963	1.15%	96.88%
9	594	0.71%	97.59%
10	476	0.57%	98.16%
11	344	0.41%	98.57%
12	382	0.46%	99.02%
13	219	0.26%	99.29%
14	189	0.23%	99.51%
15	140	0.17%	99.68%
16	122	0.15%	99.82%
17	92	0.11%	99.93%
18	50	0.06%	99.99%
19	1	0.00%	100.00%
21	2	0.00%	100.00%
23	2	0.00%	100.00%
Total	83,735		

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

At the end of the survey, there were 40,590 NA's across all samples, which is 7.3 percent of the sampled telephone numbers, and 13.4 percent of the numbers available to call after purging the nonworking and business numbers. The proportion of NA's among sampled numbers is about one percentage point higher than CHIS 2003, and the proportion among callable number is a bit more than two points. These ratios are not strictly comparable across CHIS cycles because of changes in the nonhousehold purging procedures and in the sample design. Notably, CHIS 2005 did not subsample nonmailable numbers, which yield a much higher proportion of NA's (29 percent of callable numbers in 2005) than do mailable numbers (6 percent of callable numbers).

About 2.9 percent (16,095) of the sampled telephone numbers and 5.3 percent of the callable numbers ended up as NM, also a bit higher than in CHIS 2003. This increase is consistent with the

increase in the proportion of numbers called ever reaching an answering machine shown in Table 6-8. There was little difference in the proportion of NM's between the mailable and nonmailable numbers.

6.4 Maximum Call Limits

When a person answered the telephone, the telephone number was removed from the time slice strategy described above. Once contact was made, all subsequent calls were based upon the respondent's assessment of the best time to call or it was left to the interviewer to suggest the best time. This was generally in terms of an exact appointment or a general "best time" to call (e.g., day, evening, or weekend). The maximum call counter for these cases for both the screener and the extended interview was set at 23 each. This limit was set to allow enough calls for two refusal conversion efforts and calls in Spanish or Asian languages. As a result, only about 2 percent of the sampled telephone numbers ended as "maximum calls" (MC or LM) at the screener level (Table 6-1). In some strata, work on screening interviews was stopped before the end of the field period as the stratum targets were reached. In other strata, sample was added late in the field period that may not have received the full complement of possible screener calls. In such instances, cases received maximum call codes without necessarily reaching the call limit.

At the adult extended level, about 11.5 percent of cases (Table 6-3) received one of the "maximum call" codes—MC, LM/ML (maximum calls where the number was coded a language problem at some point), MR (maximum calls where a refusal was encountered at some point), and MT (maximum calls where we were given a different telephone number to reach the adult respondent). About 10 percent of child interviews (Table 6-5) and 5 percent of adolescent interviews (Table 6-7) were in these categories. Maximum call codes were also applied to pending cases for which work was stopped because of the end of the field period.

6.5 Language Strategy

An important capability for CHIS 2005 was conducting interviews in a variety of languages, including English, Spanish, Mandarin, Cantonese, Korean, and Vietnamese. Section 3.3 describes the process by which the questionnaires were translated and prepared for use, and Sections 4.4 and 4.5 describe the recruitment and training of Spanish- and Asian-language bilingual interviewers, respectively.

This section describes how the non-English interviews were managed in the CATI system and the TRC's where they were conducted.

6.5.1 RDD Strategy

All sampled telephone numbers for the general RDD sample were loaded into the default CATI work class, which meant that they were available to any interviewer working the RDD sample. (See Section 5.2 for a complete description of the CHIS 2005 work classes.) Before the non-English questionnaires were in use, whenever an interviewer encountered a respondent who did not speak English in attempting to complete the screener or an extended interview, he or she would indicate that it was a "language problem," and what language the respondent was speaking, if it could be determined. The first sort was into Spanish, Cantonese, Mandarin, Korean, Vietnamese, undetermined Asian language, and other or not determined language.

Cases determined to require a Spanish bilingual interviewer were put into the Spanish-language work class, and became available to bilingual interviewers after the Spanish translations were finalized in CATI.

Cases where the respondent was thought to speak an undetermined Asian language were called by a group of Asian bilingual interviewers, who would either continue with the process if they spoke the appropriate language or move it to the appropriate language work class. Cases where the language was not determined at all were assigned first to Spanish bilingual interviewers, then to Chinese bilingual interviewers if the language was still undetermined. Often in the process respondents were able to tell interviewers what language they spoke, and the interviewers would immediately re-assign the case to the appropriate language work class. Cases requiring a language other than the five for which translations were available were finalized as language problem nonresponse.

6.5.2 Supplemental Sample Strategy

Initially, the Korean and Vietnamese surname samples were worked by all interviewers. Much of the screening work could be done in English. Once a language problem was encountered, the case was transferred to the appropriate language work class. About three-quarters of the adult extended

interviews completed from the surname samples were conducted in Korean or Vietnamese. (See Table 6-10 in the next section.)

6.5.3 Completed Interviews by Language

Table 6-10 shows the number of adult extended interviews completed in each of the five CHIS 2005 languages, by RDD stratum and supplemental sample.

Overall, some 3,141 adult interviews were conducted in Spanish, just over 7 percent of the total, which was about a point and a half lower than in 2003. The highest percentage of adult interviews completed in Spanish was in Imperial County (33 percent), almost twice that of any other RDD stratum.

In the RDD sample, there were 1,183 adult interviews conducted in an Asian language, or about 2.8 percent of the total, up a half point from 2003. The highest RDD proportions of Cantonese (10.4 percent) and Asian languages in total (13.7 percent) were in the San Francisco stratum, of Mandarin (3.0 percent) in Santa Clara County, and of Korean (2.4 percent) and Vietnamese (4.3 percent) in Orange County.

See Table 7.2 in *CHIS 2005 Methodology Series: Report 4—Response Rates* for more on numbers of interviews conducted by language.

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

Strata	Sampling stratum	Completes	English	Spanish	Cantonese	Mandarin	Korean	Vietnamese	Percentage Spanish	Percentage Asian
1	Los Angeles	8,607	7,197	927	110	148	176	49	10.8%	5.6%
2	San Diego	3,815	3,444	301	6	14	12	38	7.9%	1.8%
3	Orange	2,423	2,054	181	7	18	59	104	7.5%	7.8%
4	Santa Clara	1,410	1,217	68	16	42	9	58	4.8%	8.9%
5	San Bernardino	1,321	1,203	103	1	7	5	2	7.8%	1.1%
6	Riverside	1,313	1,205	100	1	4	1	2	7.6%	0.6%
7	Alameda	1,314	1,181	65	26	29	6	7	4.9%	5.2%
8	Sacramento	1,158	1,089	46	13	4	0	6	4.0%	2.0%
9	Contra Costa	839	796	32	2	4	5	0	3.8%	1.3%
10	Fresno	598	507	89	0	2	0	0	14.9%	0.3%
11	San Francisco	769	643	21	80	17	3	5	2.7%	13.7%
12	Ventura	628	569	50	1	2	4	2	8.0%	1.4%
13	San Mateo	658	620	24	7	5	1	1	3.6%	2.1%
14	Kern	605	524	80	0	0	1	0	13.2%	0.2%
15	San Joaquin	468	428	37	2	0	0	1	7.9%	0.6%
16	Sonoma	486	458	27	1	0	0	0	5.6%	0.2%
17	Stanislaus	466	419	46	0	0	0	1	9.9%	0.2%
18	Santa Barbara	472	417	55	0	0	0	0	11.7%	0.0%
19	Solano	1,216	1,144	65	1	3	1	2	5.3%	0.6%
20	Tulare	473	416	56	0	0	1	0	11.8%	0.2%
21	Santa Cruz	516	478	36	1	1	0	0	7.0%	0.4%
22	Marin	3,109	3,044	46	4	7	6	2	1.5%	0.6%
23	San Luis Obispo	491	473	16	0	0	2	0	3.3%	0.4%
24	Placer	473	464	9	0	0	0	0	1.9%	0.0%
25	Merced	490	429	59	0	0	2	0	12.0%	0.4%
26	Butte	467	457	9	0	0	1	0	1.9%	0.2%
27	Shasta	502	498	4	0	0	0	0	0.8%	0.0%
28	Yolo	478	452	22	1	0	2	1	4.6%	0.8%
29	El Dorado	459	446	13	0	0	0	0	2.8%	0.0%
30	Imperial	426	282	142	1	0	1	0	33.3%	0.5%
31	Napa	476	440	36	0	0	0	0	7.6%	0.0%
32	Kings	469	423	43	2	0	1	0	9.2%	0.6%
33	Madera	478	428	49	1	0	0	0	10.3%	0.2%

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

Strata	Sampling stratum	Completes	English	Spanish	Cantonese	Mandarin	Korean	Vietnamese	Percentage Spanish	Percentage Asian
34	Monterey*	538	435	96	0	0	3	4	17.8%	1.3%
35	Humboldt*	822	808	13	0	0	1	0	1.6%	0.1%
36	Nevada *	403	398	3	0	1	1	0	0.7%	0.5%
37	Mendocino*	417	400	17	0	0	0	0	4.1%	0.0%
38	Sutter*	384	349	34	0	0	0	1	8.9%	0.3%
39	Yuba*	378	356	22	0	0	0	0	5.8%	0.0%
40	Lake*	384	377	7	0	0	0	0	1.8%	0.0%
41	San Benito*	351	308	42	1	0	0	0	12.0%	0.3%
42	Tehama, Glen, Colusa	412	374	38	0	0	0	0	9.2%	0.0%
43	North Balance*	383	377	6	0	0	0	0	1.6%	0.0%
44	Sierra Balance*	397	391	6	0	0	0	0	1.5%	0.0%
	TOTAL RDD	42,742	38,418	3,141	285	308	304	286	7.3%	2.8%
	Korean	199	47	0	0	0	126	26	0.0%	76.4%
	Vietnamese	79	20	0	0	0	0	59	0.0%	74.7%
	TOTAL									

Source: UCLA Center for Health Policy Research, 2005 California Health Interview Survey

6.6 Refusal Conversion

At each stage of the interview process, Westat interviewers made extensive conversion efforts for refusals that were not judged to be hostile or abusive. These procedures and the results are described in *CHIS 2005 Methodology Series: Report 4 — Response Rates*. That report contains the initial and conversion cooperation rates by type of interview.

6.7 Proxy Interviews

As in previous CHIS cycles, UCLA decided to allow proxy reporting for sample persons over 65 who were unable to respond for themselves because of physical, mental, or emotional limitations. Proxy respondents had to be adult members of the household knowledgeable about the sampled adult's health. Some 264 candidates for proxy interviews were identified based upon interviewers' notes; of these, 139 interviews were completed with proxies, and another 13 were completed with the sampled adults themselves.

Interviewers who conducted the proxy interviews were trained to substitute the name of the sampled adult or an appropriate pronoun wherever "you" appeared in the question text; in cases where "you" referred specifically to the respondent (e.g., "You said earlier . . ."), the word "you" was highlighted for the proxy interviews.

6.8 Level of Effort

For a variety of reasons, CHIS 2005 represented a substantial increase in the level of effort for data collection as compared with CHIS 2003, despite the similar number of completed adult interviews between the two years. Table 6-11 presents the number of completed interviews by type and the level of effort in terms of interviewer hours worked for CHIS 2005 and CHIS 2003. Interviewer hours include time spent interviewing, contacting respondents, and gaining cooperation, as well as administrative activities. Hours per completed interview amortizes all interviewer time across the completed interviews of a given type, including time spent on nonresponse, ineligible, and out-of-scope cases.

As shown in Table 6-11, total interviewer time increased by more than 20 percent from CHIS 2003 to CHIS 2005, while the number of completed adult interviews rose only about 2 percent. Thus, the hours per completed adult rose about 18 percent. Several factors contribute to this increase, including lower completion rates at all levels, an increase in the amount of screening, an increase in the number of child interviews completed because of the supplemental samples and child-first interviewing, and about a 5-minute increase in the length of the adult interview.

The lower completion rate for the adult interview is reflected in the 10 percent larger number of screeners completed in 2005. There was also an almost tenfold increase in the number of households screened out, because of the addition of the statewide and San Diego child supplemental samples. Because of the large number of ineligibles, comparing hours per completed screener between 2003 and 2005 is somewhat problematic. Ignoring the ineligibles, the rate is 9 points higher than in 2003, while including them reduces the rate to three and a half points less than that in 2003. Screening generally required more effort in 2005 because of the lower completion rate, but at least some of that increase was offset by the increased efficiency of the sample vendor's purge techniques and the use of the predictive dialing vendor for no-contact cases

Table 6-11. Number of screeners and extended interviews, total interviewer hours and hours per interview

	CHIS 2005	CHIS 2003	Increase (Number)	Increase (Percent)
Completed screeners	73,814	66,657	7,157	10.7%
Ineligible at screener	11,368	1,174	10,194	868.3%
Completed extended interviews				
Adults	43,020	42,044	976	2.3%
Children	11,358	8,526	2,832	33.2%
Adolescents	4,029	4,010	19	0.5%
Interviewer hours	113,203	93,448	19,755	21.1%
Hours per screener				
Including ineligibles	1.33	1.38	-0.05	-3.5%
Without ineligibles	1.53	1.40	0.13	9.4%
Hours per completed adult	2.63	2.22	0.41	18.4%

Source: UCLA Center for Health Policy Research, 2005 and 2003 California Health Interview Survey

These overall numbers mask considerable variation in the level of effort per case for different samples and for different strata within the RDD sample. The primary reasons for these differences include:

- Large differences in interview administration time across languages;
- Differences across samples and strata in sample yield (proportion of telephone numbers resulting in completed adult interviews);
- Differences in the mean number of calls needed to complete a case, whether an interview, nonresponse, ineligible, or out of scope; and
- Differences across samples and strata in the proportion of households with sampled children and adolescents.

As described in Chapter 2, CHIS 2005 was conducted in five languages: English, Spanish, Vietnamese, Chinese (Cantonese and Mandarin dialects), and Korean. Table 6-12 presents mean administration times for the various questionnaires by language for both CHIS 2005 and CHIS 2003. The 2005 screener interview was slightly longer overall than the 2003 screener, probably because of the child-first interviews. In other languages the screener was 30 to 57 percent longer than in English. The largest increase in screener length from 2003 was in Spanish (more than half a minute); Spanish-speaking households also had the highest proportion of children.

The mean administration time for the English adult extended interview was about three-minutes longer in 2005 than 2003. The ratio to English administration time was lower in 2005 than 2003 for all languages other than Korean. Adult interviews conducted in Vietnamese, Cantonese, and Mandarin were actually shorter on average than in 2003.

The child interview, with an overall mean length of 15 minutes, was one minute longer in 2005 than in 2003. The ratio of other languages to English was comparable between 2005 and 2003, except for Korean, which was relatively longer in 2005. The child interview timings presented here do not include the adult interview questions administered when the child interview was done first. Those questions averaged 7.2 minutes to administer in English and from 8.5 to 11 minutes in other languages.

The adolescent interview was almost 2 minutes shorter on average than in 2003, and the ratio to English was slightly lower than in 2003 for every language except Korean. Very few adolescent interviews were conducted in the Asian languages.

Table 6-12. Mean administration times (in minutes), relative times, and sample sizes for CHIS 2005 and CHIS 2003 instruments by language of administration

	CHIS 2005			CHIS 2003		
	N	Mean	Ratio to English	N	Mean	Ratio to English
Screener						
All Languages	73,814	2.51		66,657	2.29	
English	64,469	2.37	1.00	57,731	2.19	1.00
Spanish	7,141	3.40	1.43	7,229	2.86	1.31
Vietnamese	641	3.31	1.40	482	3.40	1.55
Korean	736	3.60	1.52	513	3.20	1.46
Cantonese	419	3.09	1.30	347	3.45	1.58
Mandarin	408	3.73	1.57	355	3.77	1.72
Adult Interview						
All Languages	42,643	35.22		41,478	32.68	
English	38,242	34.08	1.00	36,766	31.01	1.00
Spanish	3,043	47.38	1.39	3,589	46.82	1.51
Vietnamese	341	38.65	1.13	309	42.60	1.37
Korean	427	43.35	1.27	314	37.38	1.21
Cantonese	284	37.62	1.10	261	42.64	1.38
Mandarin	306	40.22	1.18	239	46.63	1.50
Child Interview						
All Languages	11,358	14.98		8,526	13.98	
English	9,307	14.09	1.00	6,695	12.93	1.00
Spanish	1,717	19.13	1.36	1,595	18.12	1.40
Vietnamese	81	19.10	1.36	82	17.30	1.34
Korean	123	17.69	1.26	73	13.92	1.08
Cantonese	55	17.02	1.21	42	15.02	1.16
Mandarin	75	19.35	1.37	39	17.65	1.37
Adolescent Interview						
All Languages	4,029	19.64		4,010	21.50	
English	3,739	19.27	1.00	3,723	20.99	1.00
Spanish	258	24.52	1.27	261	28.23	1.34
Vietnamese	12	23.21	1.20	8	28.08	1.34
Korean	5	24.61	1.28	5	24.68	1.18
Cantonese	2	24.73	1.28	6	28.62	1.36
Mandarin	13	22.91	1.19	7	25.90	1.23

Source: UCLA Center for Health Policy Research, 2005 and 2003 California Health Interview Survey

6.9 Results of Incentive and Advance Letter Experiments

As noted earlier, CHIS 2005 included methodological experiments to test the effects of some changes to the data collection protocol. In previous iterations, the advance letters were on UCLA letterhead with a UCLA return address envelope. A principal funder of CHIS 2005, the National Cancer Institute (NCI), agreed to appear as co-sponsor. Also, four California counties provided statements of endorsement to be inserted in letters for their respective counties. CHIS 2005 also included, for the first time, a $2 prepaid incentive with the advance mailing.

To evaluate these changes, CHIS 2005 included several experiments. The default advance letter treatment is joint UCLA/NCI sponsorship with the incentive. Alternative treatments are UCLA-only sponsorship with the incentive and joint sponsorship without the incentive. Within the participating counties, the insert is an additional treatment crossed with these three. For refusal conversion, about half the sample received the same sponsorship treatment as in the advance mailing and the other half another treatment as shown in Table 6-13a. For some sampled telephone numbers, we were unable to obtain mailing addresses, and for others the advance letter was returned as undeliverable. Since the treatments should not have any effect on these cases, they were removed for most analyses. Table 6-13b shows the sample allocation for the remaining "Mail OK" cases.

Table 6-13a. Full sample size by advance letter/conversion letter sponsorship treatment groups

	Refusal Conversion Letter				
Advance Letter	None	UCLA only	UCLA/NCI	UCLA/NCI County Insert	Total
None	210,043	0	0	0	210,043
UCLA only	0	3,000	0	3,000	6,000
UCLA/NCI County Insert	0	0	4,072	2,715	6,787
UCLA/NCI	51,885	29,613	2,715	31,424	115,637
Total	261,928	32,613	6,787	37,139	338,467

Table 6-13b. Sample size by advance letter/conversion letter sponsorship treatment groups, mail=OK only

Advance Letter	Refusal Conversion Letter: None	UCLA only	UCLA/NCI	UCLA/NCI County Insert	Total
UCLA only	0	2,819	0	2,810	5,629
UCLA/NCI County Insert	0	0	3,851	2,569	6,420
UCLA/NCI	49,079	27,798	2,579	29,531	108,987
Total	49,079	30,617	6,430	34,910	121,036

To evaluate the experimental treatments, we examined several outcome measures for the screening interview: the response rate, initial cooperation rate, initial conversion rate, and second conversion rate. These rates are defined in Table 6-14. All were weighted using CHIS 2005 base weights. See *CHIS 2005 Methodology Series: Report 4 — Response Rates* for more detail on the calculation of the screener response rate and results, and *CHIS 2005 Methodology Series: Report 5 — Weighting and Variance Estimation* for a discussion of how the sampling weights were created.

Table 6-14. Methods experiments outcome measures

Screener Response Rate (RR):
AAPOR Response Rate 4
Calculated on full sample and "Mail=OK" sample; excludes non-conversion cases

Initial cooperation rate (COOP1):
[CS with no refusal (CS0)] / [CS0 + all final CS and NR with at least one refusal]
Calculated on sample with addresses, not nondeliverable ("Mail=OK")

Initial conversion rate (CONV1):
[CS with one refusal (CS1)] / [CS1 + all final CS and NR with at least two refusals]
Calculated on "Mail=OK" cases in refusal conversion sample

Second conversion rate (CONV2):
[CS with two refusals (CS2)] / [CS2 + all final CS and NR with at least three refusals]
Calculated on "Mail=OK" cases in refusal conversion sample

CS = Completed screeners
NR = Nonresponse
OS = Out-of-scope
UR = Unknown residential status

Table 6-15 shows the results of the advance letter sponsorship experiment. The only significant difference was that the UCLA-only letter yielded a higher initial cooperation rate than the letter with joint sponsorship. This difference was ameliorated through refusal conversion so that there was not a significant difference among the treatment response rates.

Table 6-15. Experiment outcomes by advance letter treatment

	RR	COOP1	CONV1	CONV2
UCLA only	55.1%	45.0%	28.9%	20.2%
UCLA/NCI County Insert	53.6%	41.0%	28.8%	20.5%
UCLA/NCI	54.4%	41.0%	30.8%	20.1%

Table 6-16 presents the county-insert results, which are mixed. The insert did not significantly improve the response rate in any county, and seems to have had a negative effect in Marin County.

Table 6-16. Screener response rate by advance letter treatment, counties with inserts

	San Diego	Orange	Solano	Marin
UCLA only	50.6%	53.6%	58.8%	59.5%
UCLA/NCI County Insert	53.9%	52.7%	56.9%	53.8%
UCLA/NCI	55.4%	49.9%	54.9%	58.0%

The results of changing treatments between the advance letter and the refusal letter are shown in Table 6-17. There is no consistent pattern in these results; changing the letter treatment did not improve response rates or conversion rates.

Table 6-17. Screener response and conversion rates by advance and conversion letter treatments

Advance / Conversion	RR	CONV1
UCLA / UCLA	54.2%	28.8%
UCLA / NCI	56.0%	29.0%
County / County	54.4%	29.6%
County / NCI	52.4%	27.7%
NCI / UCLA	54.6%	31.3%
NCI / County	53.2%	30.1%
NCI / NCI	54.2%	30.3%

7 QUALITY CONTROL

Westat'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 comment and problem sheet review were used during data collection to respond to issues with interviewers or to make adjustments to the questionnaires. Each quality control method is briefly described below.

7.1 Computer-Assisted Telephone Interview Testing

Quality control of the survey questionnaires began with development of specifications for CATI programming. Westat's automated management system for CATI specifications tracked question text, sequencing, response categories, the appropriate use of "fills" within questions based upon previously recorded information, and range and logic checks. The CATI specification document, published both in PDF and Microsoft Word format, 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, Westat project staff, or the programming team. At some points during the design period, changes were programmed directly into CATI, and the specification database was updated later to reflect what was actually 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 project staff, TRC staff (including interviewers), data preparation staff, the statistical staff and programmers, and by staff at UCLA and Public Health Institute.

After the pilot test and then again during the first few weeks 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.

7.2 Online Range and Logic Checking

Another method of quality control involved the use of edits in the CATI system. Specifically, online range checks were programmed for several sections of the questionnaire to catch unlikely or impossible responses and also 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.

7.3 Training

A good training program is another important quality control measure. Training was standardized across sessions so that all interviewers received the same information. Also, team leaders attended the same project-specific training sessions as the interviewers so that they would be well prepared to handle their duties. Team leaders were also prepared because of their previous experience. Many TRC supervisory staff occupy permanent positions at Westat, have worked on many RDD surveys, and are very familiar with the kinds of questions asked by interviewers and respondents and the common problems that occur in an RDD study.

7.4 Supplemental Training

In addition, about 2 weeks after each training session interviewers began attending sessions designed to maximize respondent cooperation. Following this training, interviewers were monitored further and feedback was provided about how well they were doing and what they might do to improve their performance.

7.5 Interviewer Memoranda

As discussed in Chapter 4, interviewer memorandums were given to the staff to clarify and reinforce issues, as well as to inform staff of procedural changes. A total of 11 memoranda were distributed to interviewers.

7.6 Interviewer Meetings

Interviewer meetings were also held as a quality control procedure. These were conducted as necessary with the interviewing and supervisory staff to reinforce procedures, review points of emphasis, provide updates on procedures, and inform staff of study progress. These were important to the interviewing process whenever minor changes were made during data collection.

7.7 Interviewer Monitoring

Westat monitored telephone interviewer performance throughout the field period. Monitoring forms for each interviewer were reviewed weekly, and 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.

Westat's capacity to monitor telephone interviewers is based on an investment in highly sophisticated equipment and electronic linkages. From a remote location, team leaders and monitors intercepted calls and silently listened to both the interviewer and the respondent. 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.

Westat team leaders and monitors selected 15-minute intervals of each interviewer's working time to monitor. 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.

7.8 Triage

Interviewing during all hours of TRC operation is supported by a specially trained "triage" team leader. The triage team leader was called whenever a problem interfered with the ability to conduct CATI interviewing. When the triage 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 telephones or beeper numbers. The appropriate support personnel were able to respond to problems within minutes of a problem report, regardless of the time.

7.9 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 2005 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 particular 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.

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