

THE CALIFORNIA HEALTH INTERVIEW SURVEY 2003 RESPONSE RATES

INTRODUCTION

Survey response rates describe the percentage of the population who respond to the survey interview request. As such, response rates provide valuable information about a survey and the data it produces. The response rates for California Health Interview Survey (CHIS) 2003 are described briefly here and in detail in the *CHIS 2003 Methods Report 4, Response Rates* at <http://www.chis.ucla.edu/methods.html>. This document provides information about the CHIS survey methods related to response rates, the extensive effort to maximize the CHIS response rates, and how the response rates are calculated. This summary is intended to provide a context for CHIS users to better understand the CHIS response rates.

CHIS SURVEY METHODS AND RESPONSE RATES

Several dimensions of the survey methods used in CHIS make achieving high response rates very challenging. First, CHIS is a telephone survey that uses random digit dialing (RDD). A telephone survey is the only cost-effective mode for achieving the CHIS sample objectives of providing local level (county) data throughout the State and providing estimates for the state's major racial and ethnic groups and a number of smaller ones as well. However, 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. Further, survey response rates have been declining both nationally and in California.¹ Similar surveys that are conducted in person, such as the National Health Interview Survey, have higher response rates but produce relatively small samples and are far more costly.

Second, as a population-based survey of households, virtually every household contacted by CHIS is eligible to participate in the survey. In other population-based surveys, such as the National Immunization Survey, only a small minority of contacted households is eligible to

¹ Centers for Disease Control and Prevention. *2000 BRFSS Summary Data Quality Report*.

participate. Because the relative number of eligible households is so small (denominator), they are able to report much higher response rates.

Third, to minimize bias and collect complete and accurate information, at least two—and as many as four—interviews are conducted in every household that participates in the survey. During the first interview, the “screener,” the survey is introduced to the household and, after the number of adults living in the household is determined, one adult is selected at random for the interview. The extended adult interview is then attempted with the selected adult respondent in every household that completes the screener interview. Two additional interviews (adolescent and child) may be attempted depending on the characteristics of the household. CHIS does not allow proxy interviews—where one informant provides information about other persons in the household—for the adult or adolescent interview.² Other surveys, including many conducted by the Census Bureau, rely on proxy interviews and are able to achieve higher response rates.

As many researchers have shown, response rates are not the only or even the best, measure of the quality of survey estimates. Other methods are needed to evaluate accuracy. Comparisons to other sources have shown that the CHIS 2001 estimates are generally very accurate. In addition, UCLA is undertaking a major collaborative project with the Agency for Healthcare Quality and Research (AHRQ) and the National Center for Health Statistics (NCHS) to “benchmark” or compare population, health, and health care estimates from CHIS to those obtained from the California samples of the Medical Expenditure Panel Survey (conducted by AHRQ) and the National Health Interview Survey (conducted by NCHS). While the CHIS data are collected through telephone self-reports, both the NHIS and MEPS data are collected in-person and have a higher response rate, providing a “gold standard” to compare with CHIS estimates.

CHIS EFFORTS TO MAXIMIZE RESPONSE RATES

A variety of activities were carried out to encourage all sampled households and persons in California to participate in CHIS 2003.

To emphasize the importance and legitimacy of the survey, advance letters (in all interview languages) were mailed to households whenever possible. The advance letters explain the purpose of the survey and its importance, emphasize the government sponsorship of the

² In a small number of cases, CHIS allows a proxy interview to be conducted when the selected adult respondent is age 65 or older and is unable to conduct the interview due to poor health; only adult members of the household are eligible to serve as proxy respondents and a reduced questionnaire is administered.

survey, and assure potential respondents that their participation in the survey is voluntary and that their confidentiality will be protected. The advance letters also include informational materials, a toll-free number that participants may call, and the address for a special CHIS web site designed to address respondent questions about the survey.

At the screener level, CHIS 2001 response rates proved to be higher among households that were sent an advance letter. Therefore, CHIS strengthened its efforts to match sampled telephone numbers to a mailing address. The match rate was increased from 2001 (66 percent) to 2003 (72 percent). Response rates were about 9 percent higher for households that were sent an advance letter in 2003. Households that did not initially agree to participate but did not firmly decline received a special follow-up letter stressing the importance and purpose of the survey and requesting their participation. The CHIS strategy for “refusal conversion” was used in CHIS 2001 and CHIS 2003 and helped convert one out of three reluctant households.

To maximize the likelihood of contacting individuals, households were contacted at different times over a range of time periods (days, evenings, weekends, etc.) with at least 17 attempts if needed. A toll-free number was also given so that respondents could call to schedule a convenient interview appointment time.

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. Specially trained bilingual/bicultural interviewers were employed to conduct non-English interviews. To obtain adequate representation among the elderly population, proxy interviews were allowed for frail and ill persons over the age of 65.

One key factor in gaining respondent cooperation is the performance of the interviewers. CHIS interviewers were specially trained at gaining cooperation. For CHIS 2003, interviewers were coached on how to introduce CHIS to potential participants and how to deal with seemingly reluctant respondents. Interviewers were monitored and coached throughout the training and administration period.

COMPARABILITY OF CHIS 2003 RESPONSE RATES

The CHIS response rates are comparable to response rates of other scientific telephone surveys in California, such as the California Behavioral Risk Factor Surveillance System (BRFSS) survey. Comparing survey response rates is, however, complicated and confusing as a result of the use of different definitions and varying methods of calculation. Professional groups such as the Council of American Survey Research Organizations (CASRO) and the American

Association for Public Opinion Research (AAPOR) have attempted to standardize the concepts and methods of calculating response rates. Despite this, there are numerous official methods for calculating response rates, with each equation potentially delivering a different answer.

CHIS uses a conservative method for computing its response rates: AAPOR's "Equation Number 4" called RR4. The Screener Response Rate is the proportion of eligible residential households in which a screener interview was completed. One problem in estimating response rates in RDD surveys is determining the eligibility of the sampled telephone numbers that are never answered or are only picked up by answering machines. In CHIS, telephone numbers with unknown eligibility are assigned to be either eligible or ineligible based on the "survival method."³ After the telephone numbers are assigned an eligibility status, the response rate is computed as the ratio of responding numbers to eligible numbers. Many surveys report only their cooperation rate, which ignores all the telephone numbers of unknown eligibility. Excluding telephone numbers with unknown eligibility for CHIS 2003 — as is done in other surveys could increase the CHIS response rate by as much as 5.5 percentage points.

Additionally, since CHIS intentionally over-samples rural areas and under-samples urban areas, the CHIS response rate has to be weighted to represent an overall California response rate. The weight accounts for the different sampling rates and other factors. Statewide rates are subsequently calculated by summing the weighted averages of the response rate for each stratum. Many stratified surveys report only unweighted rates.

The Extended Interview Response Rate is the proportion of selected respondents who successfully completed the interview. Unlike some surveys where completion of 50 percent of the survey is considered a successful completion, CHIS only counts surveys as complete when the respondent finishes at least 80 percent of the questionnaire.

CALCULATING CHIS 2003 RESPONSE RATES

As a multi-stage interview, response rates can be calculated for each stage in the interview process. The first stage in CHIS 2003 was the screener interview to select the adult respondent. More than 66,000 screener interviews were completed averaging 2.3 minutes in length. In CHIS 2003, 56 percent of the households completed a screener interview. Rural counties had higher screener completion rates than urban ones.

³ Brick, J. M., Montaquila, J., and Scheuren F. (2002). Estimating Residency Rates for Undetermined Telephone Numbers, *Public Opinion Quarterly*, 66, 18-39.

At the second stage, the adult interview was conducted with the randomly selected adult. The adult interview took an average of 33 minutes. The extended interview response rate for the adult interview was 60 percent in 2003. Adults with different characteristics responded at varying rates, as is typical of most surveys. For example, women responded at a higher rate than men, and older adults were more likely to respond than younger adults.

Following completion of the adult interview, if the selected adult respondent was the parent or legal guardian of a child and/or adolescent living in the household, additional interviews were attempted. In such households and following permission of adult, an adolescent (age 12 to 17) was selected (at random if there was more than one) and an interview with the adolescent was attempted. For 57 percent of the sampled adolescents, the parent/guardian gave permission for the interview (about 83 percent gave permission), and the adolescent completed the 19-minute interview. If only those adolescents whose parents/guardians gave permission are included in the calculation, the response rate rises to an 83 percent. If the adult respondent's child was between the ages of 0 and 11, an interview about the health of one child (again selected at random if there was more than one) was attempted with the adult most knowledgeable about the selected child's health. The child interview averaged 14 minutes in length and about 81 percent of the adults completed the child interview.

Table 1: CHIS 2003 Response Rates

Interview Type	CHIS 2003 Response Rate
Household Screener	55.9
Adult Extended Interview	60.0
Child Extended Interview	81.4
Adolescent Extended Interview	57.3

The published response rates for this survey are roughly comparable to those obtained in CHIS 2001.