

Supporting Statement B For:

Health Information National Trends Survey 4 (HINTS4)

(NCI)

OMB No: 0925-0538, Expiry Date 3/30/2009

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This submission is a Reinstatement with Changes.
This submission could not be submitted prior to the expiry date due to a change in methodology and a delay in awarding contract.

Yellow Highlights indicate changes from the 2007 submission.

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B. STATISTICAL METHODS

B.1 Respondent Universe and Sampling Methods

The HINTS target population is all adults aged 18 or older in the civilian non-institutionalized population of the United States. The sample design for HINTS 4 consists of a series of four single-stage stratified samples of addresses selected from a file of residential addresses based on the United States Postal Service (USPS) Computerized Delivery Sequence File (CDSF). Each sample will be selected just prior to the data collection cycle in which it is to be used. The frame will cover addresses from all zip codes in the 50 states and the District of Columbia. Iannocchione (2011) discusses how improvements in the quality of the CDSF results in nearly perfect coverage rates in more urban areas, though rural areas, and addresses with only P.O. box mail delivery have slightly lower coverage rates. However, the author also notes that for most mail surveys, over-coverage is more of a concern than under-coverage, referencing previous HINTS research by Norman and Sigman (2009) that showed that households with P.O. box addresses had a mean of 1.24 ways to receive mail. The current proposed HINTS design includes the same methods for assessing potential over-coverage as with the Norman et al work.

Addresses in the frame will be grouped into two strata: one containing a high concentration of minority adults and the other containing a low concentration. The number of addresses to be sampled at each cycle is 6,150 for the first two cycles and 6,121 for the last two cycles. The total number of addresses sampled over all four cycles is 24,602. The difference in the sample sizes among the cycles is due to a modest oversample planned for Central Appalachia in cycles 1 and 2 described in the next section. The expected overall response rate¹ for the HINTS 4 sample is 40 percent.

HINTS 4 expects a slightly higher response rate than that attained in the mail condition from HINTS 3. HINTS 4 is using the same mailing strategy protocol as the HINTS 3 experimental condition which

¹ The expected overall response rate is a weighted average of the composite response rates, defined as the product of the household response rate and the within-household response rate, across the two sampling strata.

resulted in a 32% response rate, plus we've made two additional changes to further increase response.

First, we've added on additional follow-up for households in which at least one but not all adults returned a completed questionnaire. This additional follow-up will be customized to indicate for whom we do have a response, and those for whom we'd appreciate receiving a completed questionnaire. Second, we've incorporated a Spanish language questionnaire and a targeted follow-up mailing strategy to increase response from the Spanish speaking community.

B.2 Procedures for the Collection of Information

Statistical Methodology for Stratification and Sample Selection

The sampling units for HINTS 4 will be household addresses that receive mail. The sampling frame will be a database of addresses used by Marketing Systems Group (MSG) to provide random samples of addresses. All non-vacant residential addresses in the United States present on the MSG database, including post office (P.O.) boxes, throwbacks (i.e., street addresses for which mail is redirected by the United States Postal Service to a specified P.O. box), and seasonal addresses will be subject to sampling. Two strata will be created for the sampling of addresses – one containing a high concentration of minority adults and the other containing a low concentration. The purpose of creating high- and low-minority strata and then oversampling the high-minority stratum is to increase the precision of estimates for minority subpopulations. The increases in precision result from the increase in sample sizes for the minority subpopulations produced by the oversampling.

The two strata will be formed by first using demographic data from the American Community Survey (ACS) to determine the population percentages of Hispanics and African Americans for individual U.S. Census Bureau (Census Bureau) block groups or aggregates of Census Bureau block groups.² Addresses will then be matched to Census Bureau block groups by their nine-digit ZIP Code. Addresses in Census

² Since the ACS is a survey, the sample in some block groups may not be large enough to provide reliable estimates. Each of these block groups will be aggregated with neighboring block groups within a Census Bureau tract until the data in the combined block groups are reliable.

Bureau block groups that have a population proportion for Hispanics or African Americans equaling or exceeding 24 percent³ will be assigned to the high-minority stratum. All other addresses will be assigned to the low-minority stratum. This stratification procedure is the same as that used to stratify the HINTS 3 address sample and is described in more detail in Norman and Sigman (2009). A profile of the sampling strata is shown in Table B2-1.

Table B2-1. Profile of the sampling strata

Stratum	Proportion of frame (percent)	Coverage of African Americans and Hispanics (percent)	Prevalence of African Americans or Hispanic in stratum (percent)
High-minority	25.1	71.9	62.7
Low-minority	74.9	28.1	8.2

Each of the four samples will be selected just prior to the data collection cycle in which it is to be used. Each time a stratified sample is selected, an equal probability sample of addresses will be selected from each sampling stratum in general. However, in cycles 1 and 2, addresses in the Central Appalachia region will be modestly oversampled across the sampling strata.

Table B2-2 contains the stratum allocations, assumed response rates, and expected number of completed questionnaires for all four cycles. Table B2-3 contains the expected number of completions by stratum and by analysis domains of interest for all four cycles. Due to the modular nature of HINTS 4 (with core items asked in all cycles and other items asked in fewer cycles), Table B2-4 uses the results in Table B-3 to calculate maximum expected half widths of 95 percent confidence intervals for estimated domain proportions, when the total number of completes for an item that appears in all four cycles (14,066), in the first two cycles (7,033), in the second two cycles (7,000), in either the first or second cycle (3,533), and in either the third or fourth cycle (3,500). Table B2-4 assumes that the design effect due to disproportional allocation, within-household correlation, and weighting adjustments is approximately equal to $1.0 + 0.95^2 = 1.9$, where 0.95 is the observed coefficient of variation of the final weights in the HINTS 3 address sample.

³ Due to potential population changes since 2007, a reevaluation and a different threshold will possibly be used to achieve a 25 to 75 percent population split between low-minority high-minority strata.

Table B2-2. Stratum allocations, assumed response rates, and expected completions for all four cycles

	Total	High-minority stratum	Low-minority stratum
Allocation rate of sample to strata	100%	55%	45%
Number of sampled addresses	24,602	13,351	11,071
Assumed undeliverable rate	10%	10%	10%
Number of deliverable addresses	22,142	12,178	9,964
Assumed household response rate	47.1%	40.1%	54.1%
Number of responding households	10,281	4,887	5,394
Assumed within-household response rate		79%	79%
Average number of completes per household		1.30	1.43
Number of completed questionnaires	14,066	6,353	7,713
Average number of adults per household ¹	1.73	1.65	1.81
Number of sampled adults	38,075	20,039	18,036
Unweighted response rates	36.9%	31.7%	42.8%
Weighted response rate	40.0%		

¹ Calculated from HINTS 3 data

Table B2-3. Expected number of completes by stratum and analysis domains of interest for all four cycles

Stratum	Analysis domain	Proportion of stratum (percent)¹	Completed questionnaires
High-minority	Hispanic	31.3	1,988
	African American	29.7	1,887
	Non-Hispanic White & other	41.3	2,623
	All	100.0	6,353
Low-minority	Hispanic	4.3	332
	African American	6.2	478
	Non-Hispanic White & other	89.9	6,935
	All	100.0	7,713

¹ From Table 6 of Norman and Sigman (2009). Sum of domain percentages exceeds 100 percent because respondents could select both Hispanic and African American.

Table B2-4. Expected half widths of 95 percent confidence intervals for estimated proportions in race/ethnicity domains of interest

Half width of 95 percent confidence intervals about estimated domain proportions of p=50 percent				
Total number of completed questionnaires	Hispanics (percent)	African Americans (percent)	Non-Hispanic Whites and other races (percent)	All adults (percent)
14,066	2.82	2.79	1.39	1.15
7,066	3.96	3.92	1.95	1.61
7,000	3.98	3.95	1.96	1.62
3,533	5.60	5.54	2.76	2.27
3,500	5.64	5.58	2.78	2.29

Data Collection Procedures

Each data collection cycle will follow a standard mailing protocol. All households in the sample will be sent an advance letter informing the household about the study and requesting their participation. Within 1 week of the advance letter, each sample household will receive a packet requesting that one or more questionnaires be completed and returned in the postage-paid return envelope. A \$2 incentive will also be included with the mailing. All mailed materials will be marked “Do Not Forward.” If no surveys have been received from a household within 2 weeks of the mailing of the instruments, a reminder postcard will be sent to the household. If no surveys have been received within 2 weeks of the mailing of the reminder postcard, replacement questionnaires will be mailed to nonrespondents. Please see **Appendix K** for copies of the cover letters and postcard.

Additional contact for probably Hispanic households. Nonresponding households in the linguistically isolated stratum and those with a Hispanic surname match in the other stratum will receive a third questionnaire mailing package consisting of all Spanish materials. See **Appendix L** for Spanish language cover letters.

Additional contact for All Adult selection group (see section B.4 for a description of selection groups). As completed surveys from the All Adult Method are received, the household enumeration will be scanned. If it is found that not all eligible members of the household returned a questionnaire, a

followup mailing will be done that targets the nonresponding member. The targeting will be based on the age-gender information that is collected from the roster from the responding member's questionnaire.

Once a household has returned all of its questionnaire(s), it will not receive further mailings. If a package is returned as nondeliverable, the household will be removed from future mailings.

Helpdesk Assistance. Respondents will be provided with two toll-free numbers to reach project staff. The primary toll-free number will be provided on all letters and instruments for respondents to call and ask questions about the study or request additional/replacement questionnaires. The other number will be monitored by Spanish-speaking project staff to allow Spanish-speaking respondents to ask questions or request a mailing of the materials in Spanish. All English materials will include reference to the Spanish toll-free number.

Monitoring. A series of production and management reports will be generated daily and weekly during the field period. These reports will provide information on response rates, cooperation rates, and problems encountered during the course of data collection. Reports tracking the data collection process, documenting problems encountered, and offering resolutions or necessary revisions to the process will be prepared on a weekly basis during the field period.

Scanning. Returned hard-copy forms will be scanned using high-speed scanners. Receipt and scan staff will follow written project procedures developed for the handling of incoming hard-copy forms. A supervisor will review any forms that require special handling, for example, if any are too damaged to be scanned as returned.

Estimation

Sample weights and replicate weights will be calculated for each data collection cycle. Sample weights will permit data users to calculate nationally representative estimates of the population of interest--that is, the adult (18+) non-institutionalized population in the United States--from the collected data. Replicate weights will allow users to compute standard errors for the estimates from the collected data. Because there may be interest by data users in starting their data analyses prior to the completion of all four data collection cycles and because some or all of the non-core questions will not appear in all four data collection cycles, the following weights will be calculated:

One-cycle Weights. These will be associated with the data for a single cycle and will be denoted W1A, W1B, W1C, and W1D, for Cycles 1, 2, 3, and 4, respectively.

Two-cycle Weights. These weights will allow data users to calculate estimates from two cycles of data. These weights will be denoted W2xy, where the sources of the associated data are Cycles x and y. For example, if a topical module was present in Cycles 1 and 2, then the data for this module would be weighted with the W2AB weights. If a different topical module was present in Cycles 2 and 3, the data from this module would be weighted with the W2BC weights. Multivariate analyses based on the data from both topical modules would use the W1B weights—i.e., the one-cycle weights for the cycle common to both topical modules.

Three-cycle Weights. Denoted as W3xyz, where the sources of the associated data are Cycles x, y, and z.

Four-cycle Weights. These weights will permit the calculation of estimates for items that appear in all four data collection cycles, such as the core items. The four-cycle weights will be present on the data file that is delivered immediately following the fourth data collection cycle. Prior to the delivery of the weighted data for the fourth data collection cycle, one-, two-, and three-cycle weights will be provided to permit preliminary analysis of the items collected in all four data collection periods.

The goal of weighting is to correct the final estimates for nonresponse and noncoverage biases. Weighting will consist of the following steps:

1. Calculating household-level base weights;
2. Adjusting for multiple ways that a household can receive mail;
3. Adjusting for household nonresponse;
4. Calculating person-level initial weights;

5. Calibrating the weights to population counts (also known as control totals).

The initial step in calculating weights is to attach a household-level base weight to each record in the file. The household base weight is the reciprocal of the probability of selecting the household for the survey. Note that if two different addresses would have led to the same household – for example, if a household receives mail via both a street address and a post office box – that household has twice the chance of selection of a household with only one address (and should therefore receive half the normal weight). Thus, an initial adjustment will be made to the base weights of households that have multiple ways of receiving mail (as determined by the answers to a survey question about this).

Next, adjustments for household nonresponse will be made within adjustment cells defined by characteristics that are known for all households in the survey, such as the sampling stratum, U.S. Census Bureau region and, as recommended by Norman and Sigman (2009), the United States Post Office classification of a household's type of mail delivery. A nonresponse adjustment factor will be calculated for each cell as the ratio of the sum of household weights for all eligible households to the sum of the household weights for all responding households. The nonresponse adjustment factor will then be applied to the household weight of each responding household. In this way, the weights of the responding households are "weighted up" to represent the full set of responding and nonresponding households in the adjustment cell.

Each sampled adult in responding households will be assigned an initial person-level weight. The initial person-level weight is calculated by multiplying the nonresponse-adjusted household weight by the reciprocal of the sample person's within-household probability of selection. If all adults within a household are selected to participate in the survey, the initial weight is identical to the nonresponse-adjusted household weight. However, if only one adult is selected from a household, then the initial weight for the sampled adult is equal to the nonresponse-adjusted weight times the number of eligible adults in that household. For example, if a household contains three adults and only one adult was

selected, the initial weight for the selected adult is equal to the nonresponse-adjusted household weight times three.

Finally, the person-level weights will be adjusted so that weighted counts from the survey match known national totals for selected demographic and health-related variables. The demographic variables will include age, gender, race/ethnicity, and educational attainment. The health-related variables will include health insurance status and cancer diagnoses. This is the same set of variables used for HINTS 3. The American Community Survey will be the source of the control totals for demographic variables, and the National Health Information Survey will be the source of control totals for health-related variables. If the survey data differ across categories of one or more of the calibration variables, then calibrating the weights in this way can reduce the variance of resulting estimates. More importantly, calibration will help to compensate for any noncoverage of the address frame, such as for rural areas with simplified addresses that cannot be used for sampling, or for nonresponse bias that is not adjusted for by the nonresponse adjustment procedures performed prior to calibration. As was done for the HINTS 3 weighting, it is anticipated that raking to control totals will be included rather than doing poststratification.

For each set of sample weights, a set of replicate weights will also be created to allow users to compute variances of survey estimates and to conduct inferential statistical analyses. Replication methods work by dividing the sample into subsamples (also referred to as replicates) that mirror the sample design. A weight is calculated for each replicate using the same procedures as used for the sampling weight. That is, the nonresponse and calibration adjustments will be replicated so the jackknife variance estimator correctly accounts for these adjustments. The survey estimate that is calculated for each replicate and variation among the subsample replicates is then used to estimate the variance for the survey estimates. HINTS 4 will generate replicate weights using the jackknife procedure, in which sampled households are formed into groups reflecting the sample design and each replicate weight corresponding to dropping one group. The replicate weights can be used with a software package, such as WesVar, SUDAAN, STATA

or Version 9.2 of SAS, to produce consistent variance estimators for totals, means, ratios, regression coefficients, logistic regression coefficients, etc.

In case users are interested in calculating variances using the software package like SUDAAN or SPSS which uses linearization variance estimation procedures, the necessary stratification information will be made available as well.

B.3 Methods to Maximize Response Rates and Address Nonresponse

To compensate for nonresponse and coverage, the estimates will be adjusted for nonresponse and will be poststratified to national totals for age, gender, race/ethnicity, education, health insurance status and cancer diagnosis. This same set of variables was used for HINTS 3. The national totals for health insurance status and cancer diagnosis will be taken from the National Health Interview Survey. These are used based on the observation from prior HINTS surveys that non-respondents tend to be healthier than respondents (Cantor, 2009). Post survey analysis will examine the characteristics of respondents by the relative timing of the returns. For example, methodologists will compare respondent characteristics of early returns received soon after the first mailing compared to those responding near the end of the data collection period to assess the extent to which the mailing strategy successfully engaged the cooperation of different demographic groups.

Steps to minimize nonresponse are built into the mail study protocol. As mentioned earlier, the study will take proactive measures to help ensure that high response rate goals are met. These include the following:

- **Household Advance Letters.** Advance materials will be sent to all households. The advance letters will describe the study's goals and objectives and will give assurances of confidentiality. Letters will be sent to households approximately 1 week before the household is mailed the survey.
- **Multiple Followup for the Mail Survey.** If a survey is not received from a designated household 2 weeks after they are sent, a postcard reminder will be sent. If a survey has not been received 2 weeks after the postcard, a final remailing of the surveys will be sent.

■ **Use of \$2 incentive.** As discussed in Part A, we will include a \$2 incentive when the questionnaire is mailed to the household. Prior experiments on HINTS have shown this to have an impact on response rates.

These procedures to minimize nonresponse were used in HINTS 3 and produced a response rate of 32%⁴.

For HINTS 4 we are proposing additional enhancements to increase the response rate:

- Follow-up households where some of the individuals in the household did not respond. On HINTS 3, households that returned at least one questionnaire were not followed up with a second mailing. This left those individuals in households that did not fully respond as not receiving any follow-up mailing.
- Institute special procedures, including an additional mailing, that target Spanish speakers (see above).
- Reduce the number of questionnaires sent to each household from three to either one or two (depending on the respondent selection assignment—see below). It is anticipated that this will reduce the perceived burden of the survey.

Addressing Nonresponse

Sample weights will be provided for each completed interview to allow for unbiased estimation of national percentages. The sample weights are products of the base weight, nonresponse adjustments, and a poststratification adjustment. The *base weight* is the reciprocal of the probability of selection of each sampled adult. The *nonresponse adjustments* are designed to reduce the potential bias caused by differences between the responding and nonresponding population and are equal to the reciprocals of weighted response rates within carefully selected response cells. The *poststratification adjustment* modifies the nonresponse-adjusted person-level weights to the most recent ACS totals of adults by race/ethnicity, age, region of the country, and other demographic factors. This adjustment has the effect of reducing variance.

B.4 Test of Procedures or Methods to be Undertaken Proposal

For HINTS 4, we are conducting a pilot survey, submitted under a separate OMB package (OMB No. 0925-0589-10), to test several different procedures, including the method of selecting the respondent and

⁴ The response rate was based on the AAPOR formula that counts partial interviews as completes and includes interviews, non-interviews and all eligible unknown cases in the denominator (RR2, AAPOR).

the design of different question wording. We are planning on conducting similar experiments during the course of the 4 cycles of HINTS 4.

Respondent Selection.

The DSF identifies addresses, not individuals. This leaves it up to the individual who receives the mail to select the respondent. HINTS 3 asked all adults 18+ to fill out a questionnaire. Battaglia, et al (2008) compared this method to a procedure that selected one respondent using the last birthday method. Overall, the one-respondent method provided a higher response rate (32% vs. 28%). However, the all-adult method seemed to bring in more young people into the survey, especially young females. The rationale for using the all-adult method in HINTS 3 was that it provided the most logical method for respondents to decide who should fill out the questionnaire. In addition, the result that it brought in more young people, with only a marginal loss in response rate (relative to the birthday method) suggested that it could reduce any bias in estimates that is related to age.

However, the methodology related to respondent selection is new. It has only been since the availability of the DSF that general population mail surveys, which require respondent selection, have been done. The only study that is informative on this topic is the above experiment by Battaglia, et al, which may not be entirely applicable for HINTS. It also was only one such study and left open the question as to which method might be best for HINTS. For this reason, we plan on conducting an experiment on respondent selection during the first cycle of HINTS 4. As part of the Pilot, we will be evaluating three different methods:

1. **All Adult Method.** This respondent selection procedure asks all adults in the household to fill out a survey. This method was used for HINTS 3.
2. **Next Birthday Method.** This method asks that the adult in the household that has the next birthday fill out the questionnaire.
3. **Hagan-Collier Method.** This method randomly allocates the selection of specific age-gender populations. In two of seven households, the youngest male is requested. In two of seven, the youngest female is requested. In two of seven, the oldest male is requested; and in

one of seven, the oldest female is requested. If there is no eligible person of the proscribed gender, the opposite gender is selected in the same age group.

The All-Adult method is the simplest to implement and, at least from the one research study, increases response rates for young adults. The Next Birthday method is a quasi-probability method that is commonly used on telephone surveys and does not require complicated rules and should appear to be relatively random to the respondent. The Hagan-Collier method is not a probability method because it does not strictly assign a non-zero chance of selection to adults in the middle age groups in multiple person households. However, this is only for a small portion of the overall population (only about 15% of households have 3 or more adults). The objective of this method is to specifically target individuals who are the hardest to enumerate. The Pilot is examining these as part of the cognitive interviews being conducted to develop the questionnaire. These will also be tested as part of a field experiment as part of the Pilot survey. Please see **Appendix M** for examples of the three respondent selection variations.

Based on the results of the Pilot activities, if an alternative method is seen as desirable, a larger field test would be completed as part of Cycle 1 of HINTS 4. The plan would be to decide on one of the two alternative methods (Next Birthday; Hagan-Collier) based on the Pilot. One of these would then be included as an experimental group in Cycle 1. The plan would be to allocate 1000 addresses of the cycle 1 sample to one of these alternative methods, with the remainder of the addresses being used for the All-Adult method.

The analysis of these data will concentrate on comparing response rates, especially by particular age groups, and costs.

Experiments in Questionnaire Wording

During different cycles, HINTS 4 will consider testing two or more variations of questionnaire items.

The objective is to improve reliability and validity of the data, as well as to simplify questions to reduce

burden. We illustrate below examples of questionnaire design issues that would be amenable to a field experiment. This list is not meant to be either definitive or exhaustive. It is intended to provide concrete illustrations of how field experiments could be used to advance the HINTS research agenda. At the time the OMB package is submitted for particular cycles, the specific experiments that are planned will be submitted.

- **Question Wording.** For any type of self-administered questionnaire, there is a tension between being precise and keeping items simple. Precision usually requires providing more conditions and definitions to the respondent. One possible type of experiment would be to compare alternative wordings, one using precise terminology and the other using more simplified language.

We expect that HINTS will be developing new items related to knowledge, attitudes and behaviors related to health communications. For example, development of scales related to opinions about different cancer communication methods, using a series of items might be created, with alternative wordings resulting from the initial questionnaire development process. these alternatives could be compared in a field test.

- **Open vs. Closed-ended Questions.** HINTS 3 contained a number of questions that included a relatively long list of response alternatives, including where individuals went for health information (BR03), what type of cancer the person had (CS18), and hearing of cancer tests (BR55). Similarly, HINTS 3 included items with ordinal response categories that asked “how long ago” or “when in the future” something (might) happen (e.g., next pap smear – BR59; last discussion on colon cancer – BR76; most recent stool blood test–BR88). The form of these response alternatives may have an effect on estimates (Schwarz, et al, 1985).
- **Use and Placement of Definitions.** Inevitably, there are technical terms or concepts that cannot be communicated by the question itself. On HINTS 3, for example, the nutrition section included highly visible definitions of the serving sizes. Definitions were also provided for stool blood occult tests, sigmoidoscopy and colonoscopy. Alternative forms and displays for these definitions could be tested to measure if respondents are using them.
- **Context and Order Effects.** Many of the items included on HINTS are attitudes, subjective assessments and estimates of “factual” items that are difficult to define (e.g., awareness; communication activities). These items are particularly subject to order and context effects (Tourangeau, et al., 2000). Experimentation might include testing for these types of effects on key HINTS items. One particular concern for HINTS 4 are context and order effects for the modular surveys. With different combinations of items on different questionnaires, it might be important to measure if these have effects on the measures.

B.5 Individuals Consulted on Statistical Aspects and/or Analyzing Data

NCI. A number of individuals at NCI were critical in developing the research plan, the conceptual framework, survey questions, and sampling strategies underlying HINTS. These individuals, who will also be involved in analysis, included:

Neeraj K. Arora, Ph.D. Outcomes Research Branch (301) 594-6653	Carrie Klabunde, PhD Health Services and Economics Research Branch (301) 402-3362
Erik M. Augustson, Ph.D., M.P.H. Tobacco Control Research Branch (301) 435-7610	Sarah C. Kobrin Ph.D., M.P.H. Applied Cancer Screening Research Branch (301) 435-8662
Ellen Beckjord, PhD, MPH Health Communication and Informatics Research Branch (IPA)	Benmei Liu, PhD Statistical Methodology and Applications Branch 301-435-7739
Kelly Blake, ScD Health Communication and Informatics Research Branch (301) 402-8425	Richard P. Moser, Ph.D. Behavioral Research Program (301) 496-0273
Heather Bowles, PhD Risk Factor Monitoring and Methods Branch (301) 496-8500	Wendy Nelson, PhD, MPH Basic and Biobehavioral Research Branch (301) 435-4590
Sylvia Chou, PhD, MPH Health Communication and Informatics Research Branch (301) 435-2842	Mark Parascandola, PhD, MPH Tobacco Control Research Branch (301) 451-4587
Robert T. Croyle, Ph.D. Director, Division of Cancer Control and Population Sciences (301) 435-6816	Heather Patrick, PhD Health Promotion Research Branch (301) 435-4589
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Westat. The contractor conducting the data collection is Westat. The Westat employees who were consulted on statistical aspects of the design are:

David Cantor, Ph.D. Principal Investigator (301) 294-2080	Wendy Hicks, M.S. Instrument Design Specialist (301) 251-2299
Terisa Davis, M.P.H. Project Director (301) 294-2864	Richard Sigman, M.S. Statistician (240) 453-2783
Lloyd Hicks, M.S. Sampling Statistician (301) 610-4960	

Other. NCI's online application called HINTS-GEM has been used to enable technology-mediated social participation in the development of the HINTS survey. HINTS-GEM is a dynamic web-based database that enables a broad community of researchers and practitioners to develop and refine a set of survey items for inclusion in HINTS. To date, there have been over 300 participants in the development of HINTS 4 through HINTS-GEM.

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