Health Information National Trends Survey 6 (HINTS 6)

HINTS 6 Methodology Report

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1. HINTS 6 Overview

The Health Information National Trends Survey (HINTS) is a nationally representative survey which has been administered routinely by the National Cancer Institute (NCI) since 2003. The HINTS target population is civilian, non-institutionalized adults aged 18 or older living in the United States. The most recent HINTS administration (referred to as HINTS 6) was conducted from March 7 – November 8, 2022 with a goal of obtaining 7,000 completed questionnaires.

Content Focus

HINTS provides NCI with a comprehensive assessment of the American public's access to and use of information about cancer across the cancer care continuum from cancer prevention, early detection, diagnosis, treatment, and survivorship. The content of each HINTS data collection focuses on understanding health information support needs in the population. In addition to standard HINTS content, each round of HINTS has specific topical content to assess recent developments in the public information environment. For HINTS 6, the topics of special interest included:

- Issues with health information
  - Misinformation
  - Conflicting information
  - Health literacy
- Social issues
  - Health care discrimination experiences
  - Social determinants of health
  - Social isolation
- Telehealth
  - Use of telehealth
  - Satisfaction with telehealth appointments
- Genetic testing
  - Knowledge about genetic testing
  - Interpretation and sharing of genetic testing results
  - Behavior change as a result of genetic testing

Survey Mode Experiment

Based on the successful mixed-mode data collection in HINTS 5, Cycle 3, respondents to HINTS 6 were given the opportunity to complete the survey either on the web or by paper. Respondents were randomly assigned to either be offered the two modes at the same time (concurrently) or to be offered one mode first and the other mode later (sequentially). Details about the protocol for this mixed-mode experiment are detailed in Chapter 3 and a brief presentation of the experiment results is included in Chapter 6.

Web Survey Prompt Intervention Experiment

In order to improve the quality of web responses, an experiment with prompt interventions was conducted with web respondents. It was hypothesized that having pop-up messages for respondents who were going through the survey rapidly (speeding) or answering all questions in a grid the same way (straightlining) would result in a reduction in these two behaviors and therefore produce more thoughtful responses. A risk to using speeding and straightlining interventions is that respondents might become annoyed at the pop-up messages and therefore drop out of the survey, but the benefits to data quality may outweigh the risks. This experiment was an extension of the prompting interventions tested in the 2019 HINTS 5 Cycle 3 web pilot which found the prompts to have limited impact on response rates while improving web data quality (Sun et al., 2022). A high level description of the HINTS 6 prompting experimental treatments and results related to response rates are included in Chapter 6.

Additional Mailing

Because of an unexpectedly low response to the traditional HINTS mailings, HINTS 6 included a fourth mailing to a subsample of non-respondents (selected using a systematic sampling approach). This extra mailing, conducted September 27 through November 8, included an increased incentive payment for completion. The protocol for this additional mailing is described in Chapter 3.

HINTS Panel Recruitment

The HINTS program plans to establish and maintain a longitudinal panel of HINTS respondents that consent to be surveyed in the future. This panel will not replace the cross-sectional HINTS data

collections but will instead enhance the HINTS program. Recruitment for the longitudinal panel was initiated via HINTS 6 with an item at the end of the survey that asked respondents to provide their email address if they are interested in participating in future health-related surveys for NCI. Respondents who provided their email address (N=2,877) were sent an email introducing the HINTS Panel. and were also provided the link to the HINTS Panel website and a unique access code to learn more about the panel. Those interested in joining the panel were asked to set up a username and password for the panel website and to review and sign an electronic consent form to complete panel activities. At the conclusion of the field period for HINTS 6, no further panel activities had been initiated.

2. Sample Selection

The sampling strategy for the HINTS 6 survey consisted of a two-stage design. In the first stage, a stratified sample of addresses was selected from a file of residential addresses. In the second stage, one adult was selected within each sampled household. The HINTS 6 sample design is slightly different from the sample design for previous HINTS samples. It expands the two traditional sampling strata of high minority and low minority into four by further breaking them out by rural and urban geographic areas. The purpose of adding the rural/urban stratification dimension was to provide a means to increase the number of rural cases in the sample by way of differential sampling. As in the past HINTS samples, the high minority strata were sampled at a higher rate than the low minority strata. However, among the low minority strata, the rural stratum was sampled at a higher rate relative to the urban stratum to ensure a sufficient number of rural addresses in the sample.

2.1 Sampling Frame

As with prior HINTS iterations, the sampling frame for HINTS 6 consisted of 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 were subject to sampling.

For HINTS 6, certain types of PO Box addresses were excluded from the address frame in an attempt to improve the rate of mail that is able to be delivered. There are two types of PO Box addresses: one type pertains to those that that are linked to city-style addresses (those with house number and street name) and the other type is not. Those that are linked can receive mail two ways: by the PO Box address and the city-style address. Those that are not linked can get mail only by the PO Box address. The HINTS 6 sample was limited to PO Box addresses classified as the "only way to get mail". Because PO Box addresses tend to have high undeliverable rates, having a smaller number in the sample resulted in a lower rate of undeliverable packets compared to past cycles.

In rural areas, some addresses do not contain street addresses or box numbers. Simplified addresses[1] contain insufficient information for mailing questionnaires. Consequently, alternative sources of usable addresses were used when a carrier route contained simplified addresses. This partially ameliorated the frame's known undercoverage of rural areas although the actual coverage and undeliverable rates for this portion of the frame is not known.

2.2 Stratification

The sampling frame of addresses was grouped into four explicit sampling strata:

1. Addresses in urban areas with high concentrations of minority adults (HM urban);
2. Addresses in urban areas with low concentrations of minority adults (LM urban);
3. Addresses in rural areas with high concentrations of minority adults (HM rural); and
4. Addresses in rural areas with low concentrations of minority adults (LM rural).

The high and low minority stratification was formed using the census tract-level characteristics from the 2015–2019 American Community Survey data file. Addresses in census tracts that had a population proportion of Hispanics or African Americans that equaled or exceeded 34 percent were classified as high-minority. All the remaining addresses were classified as low-minority.

The rural/urban stratification was based on the latest (2013) USDA ERS rural-urban continuum codes (RUCC). These codes form a classification scheme that distinguishes metropolitan (metro) counties by the population size of their metro area, and nonmetropolitan (nonmetro) counties by

[1] Form of address generally used for mass mailings. Simplified address is an alternate-addressing format that allows mailers to prepare mail pieces without using individual names and addresses.

degree of urbanization and adjacency to a metro area or areas[2]. Addresses in counties with RUCC values associated with metro areas (RUCC 1-3) were classified as urban. All the remaining addresses were classified as rural (RUCC 4-9).

The purpose of creating sampling strata by breakouts of minority and rural status was to provide a means to sample the high-minority and rural strata at higher rates relative to the low-minority and urban strata to increase the precision of estimates for minority and rural subpopulations. The gains in precision stem from the increase in sample sizes for these groups produced by the oversampling.

2.3 Selection of Address Sample

An equal-probability sample of addresses was selected from within each explicit sampling stratum. The total number of addresses selected for HINTS 6 was 29,600: 20,600 from the high minority urban stratum, 1,350 from the high minority rural stratum, 5,500 from the low minority urban stratum, and 2,150 from the low minority rural stratum. Relative to a proportional design, the high-minority urban and rural stratum were oversampled by 162 percent and 140 percent, respectively. The low minority urban and rural stratum were under-sampled by 68 percent and 40 percent, respectively.

Table 2-1 below summarizes the address sample, showing the number of sample addresses, the percent of addresses in the frame and sample, and the percent oversampled/under-sampled relative to a proportional design, by sampling stratum.

Table 2-1. Summary by sampling stratum

Stratum	Number of sample addresses	Percent of addresses in the frame	Percent of sample addresses	Percent of sampled addresses oversampled (+) or undersampled (-)
High minority - Urban	20,600	26.5	69.6	+162.6%
High minority - Rural	1,350	1.9	4.6	+140.0%
Low minority - Urban	5,500	59.2	18.6	-68.6%
Low minority - Rural	2,150	12.3	7.3	-40.1%
Total Sampled	29,600			

[2] See https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx for details.

2.4 Within-Household Sample Selection

The second-stage of sampling consisted of selecting one adult within each sampled household. In keeping with previous iterations of HINTS, data collection for HINTS 6 implemented the Next Birthday Method (Salmon & Nichols, 1983) to randomly select the one adult in the household. The within-household selection was conducted by the respondents themselves. Questions were included on the first page/initial screen of the survey instrument to assist the household in selecting the adult in the household having the next birthday (see **Appendix A** for the survey instrument).

3. Data Collection

Data collection for HINTS 6 started on March 7, 2022 and concluded on November 8, 2022. Respondents in the control group of the embedded methodological experiment included in HINTS 6 (further described, below) were offered the choice to respond via paper or online. Respondents in the treatment group were only offered the choice to respond online until subsequent mailings in which a paper survey was included (see Table 3-1 for the mailing protocol for each group). Both modes of the survey (paper and online) were offered in English or Spanish. All groups received a $2 pre-paid monetary incentive to encourage participation. Respondents in the control group were offered a bonus incentive to complete the survey online. The specific mailing procedures and outcomes for this data collection effort are described in detail below.

3.1 Mailing Protocol

The mailing protocol for HINTS 6 followed a modified Dillman approach (Dillman, et al., 2009) with all selected households receiving a total of four mailings: an initial mailing, a reminder postcard, and two follow-up mailings. Because of an unexpectedly low response, a subsample of non-respondents received a third follow-up mailing. The subsample was selected from the full list of nonrespondents, which was sorted by sampling stratum, treatment group, prompt, and geography (in order). Every other record was selected for the subsample to ensure that it was balanced across these variables.

As noted above, HINTS 6 included an embedded methodological experiment comparing two mixed mode approaches: concurrent and sequential. Households in the concurrent (control) group received

a cover letter with a link to the web/online version of the survey and their unique access code, as well as a paper survey with each mailing (including their first mailing). Households in the sequential (treatment) group received only a cover letter with the link to the web survey and their unique access code with their first mailing. They did not receive a paper survey in their first mailing. In subsequent mailings, these households received the link to the web survey and their unique access code as well as the paper survey.

Both groups included English-only households and potential Spanish-speaking households as described in Chapter 2. English-only households received contact materials in English and the English paper survey. Potential Spanish-speaking households received contact materials in English and Spanish and both English and Spanish survey instruments. Respondents were able to toggle the web survey to complete it in either English or Spanish. English-only households that requested a Spanish survey received a Spanish paper survey in subsequent mailings.

All households in each group received the first mailing and reminder postcard, while only non-respondents received the two additional follow-up mailings. Each group's second survey mailing was sent via USPS Priority Mail, while all other mailings were sent First Class. The contact materials for the control and treatment groups were slightly different. The language in the cover letters varied based on whether respondents were offered a $10 bonus incentive to complete the web survey (only households in the concurrent/control group were offered the bonus incentive to complete the survey online). Reminder postcards for both control and treatment groups were folded and sealed so that the respondent's unique access code could be included in the reminder. All groups received the $2 pre-paid incentive in the first mailing.

A third follow-up mailing was sent to a subset of non-respondents in an effort to increase the response rate, which was lower than previous iterations of HINTS. These households were offered a $30 incentive to complete the survey (either via paper or web) and had the option to receive the bonus incentive as a $30 Amazon e-gift card via email or a $30 check via mail.

The contents of the mailings are further described in Table 3-1. The English contact materials (cover letters and the reminder postcard) for the control group can be found in **Appendix B** and the Spanish contact materials for the control group can be found in **Appendix C.** The English contact materials for the treatment group can be found in **Appendix D** and the Spanish contact materials

for the treatment group can be found in **Appendix E**. English-only households received cover letters with Frequently Asked Questions (FAQs) on the back. Potential Spanish-speaking households received cover letters with English on the front and Spanish on the back as well as FAQs with English on the front and Spanish on the back. Households in the concurrent/control group received an additional insert (with English on the front and Spanish on the back) to draw their attention to the $10 web bonus. This insert can be found in **Appendix F**. Households who received the fourth mailing received an updated cover letter and a new insert (with English on the front and Spanish on the back) to draw their attention to the $30 incentive for completing the survey (via paper or web). The English and Spanish contact materials and the insert for the fourth mailing can be found in **Appendix G.**

Table 3-1. Mailing protocol

Mailing	Date mailed	Mailing method	Concurrent/Control group materials	Sequential/Treatment group materials
Mailing 1	March 7, 2022	1st Class Mail	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope • $2 bill • Insert for $10 web bonus	• Cover letter with link to web survey and unique access code • FAQs • $2 bill
Postcard	March 14, 2022	1st Class Mail	Reminder/thank you postcard with link to web survey and unique access code (folded and sealed)	Reminder/thank you postcard with link to web survey and unique access code (folded and sealed)
Mailing 2	April 13, 2022	USPS Priority Mail	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope • Insert for $10 web bonus	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope
Mailing 3	May 18, 2022	1st Class Mail	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope • Insert for $10 web bonus	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope

Table 3-1. Mailing protocol (continued)

Mailing	Date mailed	Mailing method	Concurrent/Control group materials	Sequential/Treatment group materials
Mailing 4	September 27, 2022	1st Class Mail	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope • Insert for $30 incentive	• Cover letter with link to web survey and unique access code • FAQs • Questionnaire(s) • Postage-paid return envelope • Insert for $30 incentive

The number of packets sent per mailing is outlined in Table 3-2. Households who sent in completed questionnaires or completed the web survey were removed from further mailings. In addition, households with packets that were returned by the Postal Service as undeliverable were removed from any further mailings.

Table 3-2. Number of packets per HINTS 6 mailing

Mailing	English-only	Potential Spanish	Spanish-only (upon request)	Total
Mailing 1	22,199	7,401	N/A	29,600
Mailing 2	18,563	6,766	5	25,334
Mailing 3	16,735	6,319	7	23,061
Mailing 4	7,637	2,892	3	10,532
Total	65,134	23,378	15	88,527

3.2 Embedded Web Response Experiment

All respondents that opted to respond to the survey by web were included in a prompting intervention experiment. The prompts that were received by web respondents were designed to improve the thoughtfulness of responses through the use of pop-up messages sent to respondents who were either speeding through the survey or answering all answers in a grid the same way (straightlining). The risk with prompting interventions is that respondents might become irritated with repeated prompts and not complete the survey, but the benefit of better data quality may outweigh the risk. The goal of the experiment was to identify the level of prompting that results in increased survey quality without an increase in survey drop outs.

Respondents opting to complete the survey by the web were randomly assigned to one of three experiment group:

- **The control group**: receiving no more than one prompt for speeding and no more than one prompt for straightlining to be administered any time in the survey that the undesirable behavior was observed. This is the same prompting protocol that was included in HINTS 5, Cycle 3.
- **Treatment group 1:** receiving up to two prompts for speeding and two prompts for straightlining. These prompts were administered any time in the survey that the undesirable behavior was observed.
- **Treatment group 2:** receiving up to two prompts for speeding and two prompts for straightening per survey half. Up to two prompts were administered in the first half of the survey and up to two prompts were administered in the second half of the survey for a total of four possible prompts.

3.3 In-bound Telephone Calls and Emails

Two toll-free telephone numbers were provided to all respondents: one was used for English calls and one was used for Spanish calls. Both numbers were provided in each mailing. Respondents were instructed to call either number if they had questions, concerns, or if they needed to request materials in Spanish. Each number had a HINTS-specific voicemail message that instructed callers to leave their contact information and the reason for the call, and then a study staff member would return their call. The Spanish line was staffed by a native Spanish speaker. When voicemails were received, they were logged into the Study Management System (SMS) and the request was either processed (such as recording their desire for a Spanish questionnaire) or the respondent was called back to ascertain the respondent's need if it was not clear from the message. Callers stating that they did not want to participate in the study were coded as "refusal" and removed from any subsequent mailings.

Respondents who accessed the link to the web survey were also given the option to send electronic messages to study staff if they had questions or concerns. Respondents were able to email study staff using the email address provided on the survey website or they could fill out a form on the website with their name, email address, and reason for contact. Both emails and messages sent via the online form were received in the study's email inbox and staff responded to those messages via email.

Emails received were logged in the SMS and requests were processed by study staff (e.g., confirming that the respondent's access code is valid and working).

The help desk received a total of 141 messages (118 calls and 23 emails) throughout the HINTS 6 field period (see Table 3-3). The majority of these messages were calls that remain unresolved because they were hang-ups or non-informative messages and study staff were not able to reach the respondents. The rest were respondents who wanted to let the study team know that they had completed their survey or respondents who contacted the help desk with some form of comment or question. Twenty-five respondents had questions about redeeming their incentive gift code and one respondent had questions about their incentive check. Four respondents had questions about the HINTS Panel.

Table 3-3. Telephone calls and emails received

Reason for contact	Number of contacts received
Request for a Spanish questionnaire	14
Respondent needed help accessing the web survey or requested their access code	8
Respondent asked a question or submitted a comment. Topics included: • They wanted to let the study team know that the survey had been completed • They wanted more information about the study • They wanted to let the study team know that they would complete the paper survey since they did not have a computer • They wanted to thank the study team for the $2 pre-incentive	30
Respondent had questions about redeeming their incentive gift code	25
Respondent had questions about their incentive check	1
Respondent had questions about the HINTS Panel	4
Refusal	17
Calls that were never resolved due to hang ups or non-informative messages	42
Total	141

3.4 Incoming Questionnaires

Field room staff receipted all returned questionnaires into the SMS using each questionnaire's unique barcode. Questionnaires submitted using the web survey were logged as complete by the SMS as soon as they were submitted. The SMS tracked each received questionnaire as well as the status of each household. Once a household was recorded as complete, it no longer received any additional mailings. Packages that came back as undeliverable were marked as such in the SMS and those addresses did not receive any further mailings.

In addition to refusing by calling the toll-free line or sending an email, some respondents also refused by sending a letter stating that they did not wish to participate or asking to be removed from the mailing list. These individuals were marked in the system as refusals and were removed from subsequent mailings. Respondents who sent back a blank questionnaire were also marked as refusals and removed from subsequent mailings.

The status of all HINTS 6 households at the end of data collection (but before data cleaning and editing) can be found in Table 3-4.

Table 3-4. Household status of HINTS 6 at close of data collection

Household status	Concurrent/Control group		Sequential/Treatment group		Total	
	N	%	N	%	N	%
Web completes	2,553	12.27	780	8.86	3,333	11.26
Paper completes	1,830	8.80	759	8.63	2,589	8.75
Total completes	4,383	21.07	1,539	17.49	5,922	20.01
Refusal	59	0.28	12	0.14	71	0.24
Deceased/Sick	3	0.01	0	0.00	3	0.01
Undeliverable	2,031	9.76	844	9.59	2,875	9.71
Unresolved	17	0.08	2	0.02	19	0.06
Nonresponse	14,307	68.78	6,403	72.76	20,710	69.97
Total	20,800	100.00	8,800	100.00	29,600	100.00

The number of questionnaires returned by date during the field period for HINTS 6 can be found in tables 3-5 and 3-6. The majority of returns for the control group were early in the field period, with 57 percent of returns coming in after the first mailing of the survey and the mailing of the reminder postcard. The second and third mailings resulted in an additional 36 percent and the remaining seven percent were in response to the final follow up mailing that was added to the protocol.

Table 3-5. Concurrent/Control group survey response by date

Date(s) of mailing	Period of returns	Number of returns by paper[1]	Number of returns by web[2]	Total number of returns
Mailing 1: March 7	March 8-March 16	127	906	1,033
Postcard: March 14	March 17-April 15	770	878	1,648
Mailing 2: April 13-18	April 16-May 20	511	597	1,108
Mailing 3: May 18	May 21-September 29	281	310	591
Mailing 4: September 27	September 30-November 8	158	174	332
	Total	1,847	2,865	4,712

[1] Includes unresolved cases (e.g., respondent completed the paper survey and web survey).

[2] Includes partial-completes (e.g., respondent started the web survey but did not hit the final submit button).

Conversely, the majority of returns for the treatment group occurred during the middle of the field period, with 51 percent of returns coming in after the second and third mailings. The first mailing and reminder postcard resulted in only 36 percent of returns. The remaining 13 percent were in response to the final follow up mailing.

Table 3-6. Sequential/Treatment group survey response by date

Date(s) of mailing	Period of returns	Number of returns by paper[1]	Number of returns by web[2]	Total number of returns
Mailing 1: March 7	March 8-March 16	N/A	311	311
Postcard: March 14	March 17-April 15	N/A	297	297
Mailing 2: April 13-18	April 16-May 20	441	136	577
Mailing 3: May 18	May 21-September 29	201	83	284
Mailing 4: September 27	September 30-November 8	119	103	222
	Total	761	930	1,691

[1] Includes unresolved cases (e.g., respondent completed the paper survey and web survey).

[2] Includes partial-completes (e.g., respondent started the web survey but did not hit the final submit button).

4. Data Management

After being processed and receipted into the SMS, each returned paper questionnaire was scanned, verified, cleaned, and edited. Each web questionnaire was evaluated through the Survey Builder verification and cleaning processes and extracted into a combined database and edited along with the paper data. Imputation procedures were also conducted on web and paper data. These procedures are described below.

4.1 Scanning

All completed paper questionnaires were scanned using a data capture software (TeleForm) to capture the survey data and images were stored in SharePoint. Staff reviewed each form as it was prepared for scanning. The review included:

- Determining if the form was not scannable for any reason, such as being damaged in the mail. Some questionnaires or individual responses needed to be overwritten with a pen that was readable by the data capture software. Numeric response boxes were pre-edited to interpret and clarify non-numeric responses and responses written outside the capture area.

- Reviewing potential problem questionnaires or pertinent comments made by respondents. Comments in Spanish were reviewed by a Spanish-speaking staff member.

The reviewed paper surveys were then sent through the high-speed scanner to capture the responses. TeleForm read the form image files and extracted data according to HINTS 6 rules established prior to the field period. Scanned data were then subject to validation according to HINTS specifications. If a data value violated validation rules (such as marking more than one choice box in a mark-only-one question) the data item was flagged for review by verifiers who looked at the images and the corresponding extracted data and resolved any discrepancies. Spanish forms were verified by a Spanish-speaking staff member.

Decisions made about data issues as a result of scanning were recorded in a data decision log. The decision log contains the respondent ID, the value triggering the edit, the updated value, and the reason for the update. A total of 186 entries were made into the data decision log during the course of data scanning and processing. The majority of these were attributed to multiple response options selected on a gate question. Additional entries detail the decisions made about numeric entries outside variable parameters (i.e., 2-digit numbers written on single digit question).

A 10 percent quality control check was then conducted on the scanned data and the electronic images of the survey. Quality Assurance (QA) staff compared the hard copy questionnaire to the data captured in the database item-for-item and the images stored in the repository page-for-page to ensure that all items were correctly captured. If needed, updates were made. In addition, QA staff closely reviewed frequencies and cross tabulations of the HINTS raw data to identify outliers and open ended items to be verified. ID reconciliation across the database, images, and the SMS, was completed to confirm data integrity.

4.2 Data Cleaning and Editing

Once the paper questionnaires had been scanned, all survey data were cleaned and edited. General cleaning and editing activities are described briefly below, with more detailed information found in **Appendix H** (Variable Values and Data Editing Procedures).

- Customized range and logical inconsistency edits, following predetermined processing rules to ensure data integrity, were developed and applied against the data.
- Edit rules were created to identify and recode nonresponse or indeterminate responses.

- Missing values were recoded for some responses to questions that featured a forced-choice response format and for filter questions where responses to later questions suggested a particular response was appropriate.

- A special "Missing data" value was added to account for web interview break-offs. This code indicates that a particular item is missing an expected response but was never seen by the respondent. The point at which the breakoff occurs is coded with the traditional "Missing data" code, but all variables thereafter are coded with the new "Missing data – Never Seen" code.

- Derived variables were created to reflect each response recorded for certain "mark-one" type questions (B15, D5, and R11), in order to facilitate the imputation process implemented when respondents did not follow the instruction to mark only one response. For these variables, imputation, as described in Section 4.3, was carried out. For other "mark-one" type questions where respondents marked multiple responses, editing rules were used to determine which response was retained.

- Variables were designed to summarize the responses for the "mark all" type questions. These variables indicate the response category selected for respondents who selected only one response, and a "multiple responses selected" category for respondents who answered multiple responses.

- A derived variable was developed to summarize the responses to R4 and R5 (the new "Occupation" questions) designed to determine what a respondent's full time occupation is, especially in cases where there may be more than one response option chosen in R5, a "mark all that apply" style question.

- Data cleaning was carried out for the question H7 variables: Height_Feet and Height_Inches. The rules that were applied minimized the number of out-of-range values by accounting for response measurements in incorrect boxes, responses using metric measures, responses using only one unit of measurement and other response errors.

- "Other, specify" responses were examined, cleaned for spelling errors, categorized, and upcoded into preexisting response codes when applicable. On one of these questions (F3), some of the responses were especially difficult to categorize because they could potentially have been upcoded into multiple categories. In those instances, the response was left as entered in the "Other, specify" field.

4.3 Imputation

The questions for which respondents selected more than one response were recoded to -5 and subject to imputation. A single answer was imputed by selecting one response among those selected by the respondent. The selection of the imputed response was based on the distribution of answers

among the single-answer responses. This is the same imputation process as was conducted for the four cycles of HINTS 5 as well as for HINTS SEER. Imputation occurred as follows:

Table 4-1. Imputation for multiple responses

Item number	Topic	Total imputed
B15	Most responsible for reducing misinformation on social media	127
D5	Primary reason for most recent telehealth visit	20
R11	Sexual orientation	2

In addition, hot-deck imputation was used to replace missing responses for items used in the raking procedure for the weighting. Specifically, this was conducted for items C6, Q1, R1, R2, R6, R7, R8, and R9. Hot-deck imputation is a data processing procedure in which a value is assigned with the corresponding value of a "similar" case in the same imputation class. The data record that supplies the imputed value is referred to as the "donor." Under a hot deck approach, the resulting distribution preserves the distribution of values observed for respondents. Imputation classes are defined on the basis of variables that are thought to be correlated with the item with missing values. A donor is then randomly selected within an imputation class to supply the imputed value. Details for items imputed using the hot-deck approach are as follows:

Table 4-2. Imputation for missing response

Item number	Topic	Total imputed
C6	Health Insurance coverage	126
Q1	Cancer diagnosis	370
R1	Age	98
R6	Marital status	415
R7	Education attainment	404
R8	Ethnicity	644
R9	Race	619

4.4 Determination of the Number of Household Adults

For the purpose of applying weights, a measure of the number of adults in each household (R_HHAdults) was created using questionnaire responses. The initial measure was taken from responses to demographic section questions asking for the total number of people and the number of children in the household (see items R12-R13). Implausible or missing values that resulted from the answers to those questions were substituted with values to questions on the respondent-selection page of the questionnaire and further substituted with data from the demographic section

roster. A detailed list of the steps carried out to identify the number of adults in each household is included in **Appendix H**.

4.5 Survey Eligibility

Returned surveys were reviewed for completion and duplication (more than one questionnaire returned from the same household) to ensure they were eligible for inclusion in the final dataset. Of the 6,505 questionnaires received, 27 were returned blank, 148 were determined to be incompletely filled out, and 78 surveys were identified as duplicates (i.e., the same household returned multiple surveys). The remaining 6,252 surveys were determined to be eligible. The processes for reviewing instruments for eligibility are detailed below.

Definition of a Complete and Partial Complete Questionnaire

The procedures in HINTS 6 for determining whether a returned questionnaire was complete was similar to those used in cycles 1-4 of HINTS 5 and HINTS-SEER. A partial-complete for HINTS 5 Cycles 3 and 4 was defined as when between 50 percent and 79 percent of the questions were answered in Sections A and B. In HINTS 6, there were 67 partially-completed questionnaires. Both partially-completed and completely-answered questionnaires were retained. The 148 questionnaires with fewer than 50 percent of the required questions answered in Sections A and B were coded as incompletely-filled out and discarded. The 148 incomplete questionnaires represented about 2.3 % of all surveys with at least one question answered, which is higher than paper-only cycles of HINTS; 126 (85%) of the incomplete questionnaires were from web respondents, and 85 of the incomplete web responses (67%) were from respondents in the concurrent mixed-mode group. The disproportionate number of incompletes from this group is likely attributable to respondents who accessed the web survey solely to collect the $10 bonus incentive for web response. Data for 67 partially completed and 6,185 completed questionnaires were included in the final dataset for HINTS 6, totaling 6,252 surveys.

Eligibility of Multiple Questionnaires from a Household

78 households returned two filled in questionnaires (no household returned three or more questionnaires), the majority of which returned both a web and paper instrument. The procedures to deal with this multiple returns followed similar guidelines that were used for HINTS 5:

- If the same respondent returned multiple questionnaires, the first questionnaire received was retained.
- If the same respondent returned multiple questionnaires on the same day, the first questionnaire to complete the editing process was retained.
- If a return date was unavailable for questionnaires from the same respondent, the questionnaire with fewer substantive questions omitted was retained.
- If two different household members returned a questionnaire, the first was retained unless it had more substantive questions omitted, in which case the second was retained.

4.6 Additional Analytic Variables

Included in the delivery files are five sets of analytical variables related to the geographic location of respondents: 1) rural-urban commuting area (RUCA) codes that classify census tracts using measures of population density, urbanization, and daily commuting; 2) National Center for Health Statistics (NCHS) urban-rural classification scheme for counties; 3) 2013 Urban Influence Codes; 4) Delta Regional Authority service area flag; and 5) USDA rural-urban continuum codes (RUCC).

The two RUCA codes (primary and secondary) provide a detailed and flexible way for delineating sub-county components of rural and urban areas. They are based on the 2006-10 American Community Survey (ACS) and have been updated using data from the 2010 decennial census. The primary codes (PR_RUCA2010) delineate metropolitan and nonmetropolitan areas based on the size and direction of primary commuting flows. The secondary codes (SEC_RUCA2010) further subdivide the primary codes to identify areas where classifications overlap based on the size and direction of the secondary, or second largest, commuting flow.

The NCHS Urban–Rural Classification Scheme for Counties (NCHSURCODE2013) was developed in 2013 for use in studying associations between urbanization level of residence and health and for monitoring the health of urban and rural residents. The scheme groups counties and county-

equivalent entities into six urbanization levels (four metropolitan and two nonmetropolitan), on a continuum ranging from most urban to most rural.

The 2013 Urban Influence Codes, developed by the United States Department of Agriculture, form a classification scheme that distinguishes metropolitan counties by population size of their metro area, and nonmetropolitan counties by size of the largest city or town and proximity to metro and micropolitan areas. The standard Office of Management and Budget (OMB) metro and non-metro categories have been subdivided into two metro and 10 non-metro categories, resulting in a 12-part county classification.

The Delta Regional Authority is a regional economic development agency serving 252 counties and parishes in parts of eight states: Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. Its mission is to improve the quality of life for the residents of the Mississippi River Delta Region. The Delta Regional Authority service flag (DRA) identifies the areas served by this agency.

The 2013 Rural-Urban Continuum Codes form a classification scheme that distinguishes metropolitan counties by the population size of their metro area, and nonmetropolitan counties by degree of urbanization and adjacency to a metro area. The Office of Management and Budget (OMB) metro and non-metro categories have been subdivided into three metro and six non-metro categories. Each county in the country is assigned one of the nine codes.

4.7 Codebook and Annotated Questionnaire Development

Following cleaning, editing, and weighting (described in Chapter 5) detailed codebooks including frequencies were created for HINTS 6 that combined data from web and paper surveys. Two versions were created for both weighted and unweighted data. The codebooks define all variables in the questionnaires, provide the question text, list the allowable codes, and explain the inclusion criteria for each item. The English and Spanish instruments were annotated with variable names and allowable codes to support the usability of the delivery data.

5. Weighting and Variance Estimation

Every sampled adult who completed a questionnaire in HINTS 6 received a full-sample weight and a set of 50 replicate weights. The full-sample weight is used to calculate population and subpopulation estimates. Replicate weights are used to compute standard errors for these estimates. The use of sampling weights is done to ensure valid inferences from the responding sample to the population, correcting for nonresponse and noncoverage biases to the extent possible.

The computation of the full-sample weights consisted of the following steps:

- Calculating household-level base weights;
- Adjusting for household nonresponse;
- Calculating person-level initial weights; and
- Calibrating the person-level weights to population counts (also known as control totals).

Replicate weights were calculated using the 'delete one' jackknife (JK1) replication method.

5.1 Household Base Weights

The initial step in the weighting process is calculating the household-level base weight for each household in the sample. The household base weight is the reciprocal of the probability of selecting the household for the survey, which depends on the stratum the household was selected from. Generally, base weights for units in oversampled strata are smaller than those in the strata that was not oversampled. In HINTS 6, the base weights for households in the high minority urban stratum, which was oversampled at the highest rate, were roughly 1/8 the size of those in the low minority urban stratum, which was sampled at the lowest rate.

5.2 Household Nonresponse Adjustment

Nonresponse is generally encountered to some degree in every survey. The first and most obvious effect of nonresponse is the reduction in the effective sample size, which in turn increases the sampling variance. In addition, if there are systematic differences between the respondents and the nonrespondents, there will be a bias of unknown size and direction. This bias is generally adjusted for in the case of unit nonrespondents (nonrespondents who refuse to participate in the survey at

all) with the use of a weighting adjustment term multiplied to the base weights of sample respondents. Item nonresponse (nonresponse to specific questions only) is generally adjusted for through the use of imputation. This section discusses weighting adjustments for unit nonresponse.

The most widely accepted paradigm for unit nonresponse weighting adjustment is the quasi-randomization approach (Oh & Scheuren, 1983). In this approach, nonresponse cells are defined based on those measured characteristics of the sample members that are known to be related to response propensity. For example, if it is known that males respond at a lower rate than females, then sex should be one characteristic used in generating nonresponse cells. Under this approach, sample units are assigned to a response cell, based on a set of defined characteristics. The weighting adjustment for the sample unit is the reciprocal of the estimated response rate for the cell. Any set of response cells must be based on characteristics that are known for all sample units, responding and nonresponding. Thus, questionnaire items on the survey cannot be used in the development of response cells because these characteristics are only known for the responding sample units.

Under the quasi-randomization paradigm, Westat models nonresponse as a "sample" from the population of adults in that cell. If this model is in fact valid, then the use of the quasi-randomization weighting adjustment eliminates any nonresponse bias (see, for example, Little & Rubin (1987), Chapter 4). The weighting procedure for HINTS 6 used a household-level nonresponse adjustment procedure based on this approach. The base weights of the households that did return the questionnaire were adjusted to reflect nonresponse by the remaining eligible households. A search algorithm[3] was used to identify variables highly correlated with household-level response and these variables were used to create the nonresponse adjustment cells. The variables used to define nonresponse cells for HINTS 6 were:

- Sampling stratum (High Minority Urban; High Minority Rural; Low Minority Urban; Low Minority Rural)
- Census region (Northeast; South; Midwest; West)
- Route type (Street address; other addresses such as PO Box, Rural Route, etc.)

[3] An in-house macro WESSEARCH, which calls the Search software, a freeware product developed by the University of Michigan (https://www.src.isr.umich.edu/software/search-software-for-exploring-data-structure/).

- Metropolitan Status (county in Metro areas; county in Non-Metro areas) using USDA ERS rural-urban continuum codes (RUCC)
- High Spanish linguistically isolated area[4] (Yes; No).

Nonresponse adjustment factors were computed for each nonresponse cell *b* using the formula below. This formula is consistent with the RR4 formula of the American Association of Public Opinion Research (AAPOR) for calculating response rates, which is how the response rate is being calculated for HINTS 6. See Chapter 6 for more details.

$$HH\_NRAF(b) = \frac{RESPONSE + NONRESPONSE + UNKNOWN \times e}{RESPONSE},$$

where

- *RESPONSE* is the sum of household base weights for all responding households in nonresponse cell *b*,
- *NONRESPONSE* is the sum of the household base weights for all known nonresponding households in nonresponse cell *b*,
- *UNKNOWN* is the sum of the household base weights for all households that did not return mail whose eligibility is unknown in nonresponse cell *b*, and
- *e* is the estimated percentage of eligible households among the households that did not return mail.

The estimated percentage of eligible households among the households that did not return mail, *e*, was 100 percent for HINTS 6 and was calculated using the procedure described in section 6. In the last HINTS cycle, *e* was less than 1. The difference between this cycle and the last is related to the deletion of additional PO Boxes in the HINTS 6 sample frame (see section 2.1). The PO boxes deleted from the frame are because many are known not to be in use and therefore ineligible. An *e* = 100% essentially means that all ineligible housing units have been taken out of the frame. When *e* resolves to 1, as in the case of HINTS 6, the response rate formula RR4 used in the last HINTS cycle (HINTS 5 cycle 4) gives the exact same results as the response rate formula RR2, which assumes all unresolved sample cases are eligible. (See Standard Definitions (aapor.org), page 61.)

[4] Sample households in Census tracts where at least 13% of the households are classified as linguistically isolated Spanish-speaking households from the latest 5-year ACS are flagged as being in a high Spanish linguistically isolated area.

The household nonresponse adjustment factors ranged from a low of 2.91 to a high of 5.50, and averaged 3.56 across all nonresponse adjustment cells.

5.3 Initial Person-Level Weights

Each sampled adult in responding households was assigned an initial person-level weight. The initial person-level weight was calculated by multiplying the nonresponse-adjusted household weight by the reciprocal of the sample person's within-household probability of selection. Because only one adult per household was selected to participate in the survey, the reciprocal of the sample person's within-household probability of selection is identical to the number of adults in the household. So, for example, if a household contained three adults and one adult was selected, the initial weight for the selected adult is equal to the nonresponse-adjusted household weight times three.

5.4 Calibration Adjustments

The purpose of calibration is to reduce the sampling variance of estimators through the use of reliable auxiliary information (see, for example, Deville & Sarndal, 1992). In the ideal case, this auxiliary information usually takes the form of known population totals for particular characteristics (called *control totals*). However, calibration also reduces the sampling variance of estimators if the auxiliary information has sampling errors, as long as these sampling errors are significantly smaller than those of the survey itself.

Calibration reduces sampling errors particularly for estimators of characteristics that are highly correlated to the calibration variables in the population. The extreme case of this would be the calibration variables themselves. The survey estimates of the control totals would have considerably higher sampling errors than the "calibrated" estimates of the control totals, which would be the control totals themselves. The estimator of any characteristic that is correlated to any calibration variable will share partially in this reduction of sampling variance, though not fully. Only estimators of characteristics that are completely uncorrelated to the calibration variables will show no improvement in sampling error. Deville and Sarndal (1992) provide a rigorous discussion of these results.

Control Totals

The American Community Survey (ACS) of the U.S. Census Bureau has much larger sample sizes than those of HINTS. The ACS estimates of any U.S. population totals have lower sampling error than the corresponding HINTS estimates, making calibration of the survey weights to ACS control totals beneficial. Westat used the 2021 ACS estimates that are publicly available on the Census Bureau web site.

Calibration variables were selected among those that were on the ACS public-use file and were found to be well correlated to important HINTS questionnaire item outcomes (i.e., Westat wanted ACS-available characteristics that tend to have differing mean values for HINTS questionnaire item outcomes). The following ACS characteristics correlate well with HINTS questionnaire items:

- Age
- Educational Attainment
- Marital Status
- Race
- Ethnicity
- Census Region

In addition to characteristics from the ACS, two health-related variables were used: *Percent with health insurance* and p*ercent of adults who have ever been diagnosed with cancer*. The *health insurance* variable came from the 2021 National Health Information Survey (NHIS) (Cohen, et al., 2022) and corresponds to the question asked in the HINTS survey (C6, "Are you currently covered by any of the following types of health insurance or health coverage plans?"). The *percent of adults who have ever been diagnosed with cancer* variable came from the 2021 National Center for Health Statistics (National Center for Health Statistics, Interactive Summary Health Statistics for Adults-2019-2021, n.d.) and corresponds to the question asked in the HINTS survey (Q1, "Have you ever been diagnosed as having cancer?").

Raking to the control totals for these variables (either alone or cross-classified with each other) was then performed. As a result of the raking HINTS weights to the control totals, estimates calculated from HINTS data for the control-total variables agree with those calculated from the source data for the control totals. For example, the national-level estimate of *Percent with health insurance* calculated from HINTS data agrees with the estimate calculated from NHIS 2021 data.

5.5 Replicate Variance Estimation

In addition to the full-sample weight, a set of 50 replicate weights were provided for each adult. These replicate weights are used to calculate standard error of estimates obtained from the HINTS data, using the delete one jackknife (JK1) replication method.

The JK1 jackknife technique is compatible with the sample design and weighting procedures for HINTS. This jackknife variance estimation technique takes carefully selected subsets of the data for each "replicate," and for each respondent in the replicate subset and determines a sampling weight, as if the replicate subset were in fact the responding sample. (This replicate subset is usually almost the entire sample, except for a group of respondents that are "deleted" for that replicate.) The resulting weights are called replicate weights.

The jackknife variance estimator requires the use of replicate weights. For the HINTS 6 data set, a set of 50 replicate weights was assigned to each responding adult. To illustrate how the replicate variance estimates are computed, suppose P is a percentage of adults in the U.S. population having a particular characteristic (e.g., answering one of the HINTS questions in a particular way). A nationally representative estimator p can be computed by aggregating the adult sampling weights of all responding adults with this characteristic (e.g., all responding adults in the survey answering the survey question in a particular way). A JK1 jackknife variance estimator of the sampling variance of p can be computed in two steps:

Step 1. Recompute estimators $p(r)$, $r = 1,...,50$, by aggregating the replicate sampling weights corresponding to replicate r for all responding adults with the characteristic.

Step 2. Compute the JK1 jackknife variance estimator

$$v(p) = \frac{R-1}{R}\sum_{r=1}^{50}(p(r)-p)^2$$

The replicate weights are computed by systematically deleting a portion of the original sample, and recomputing the sampling weights as if the remaining sample (without the deleted portion) were the actual sample. These deleted sample units should be first-stage sampling units, which in HINTS are households. The remainder of the sample with the deleted portion removed is called the replicate

subset, and it should mirror the full sample design, as if it were a reduced version of the original sample.

For the purposes of JK1 jackknife variance estimation, each household was assigned to one of 50 replicate "deletion" groups *D(r), r* =1,..., 50. Each replicate sample is the full sample minus the deletion group (i.e., it is roughly 49/50 of the original sample).

The replicate sampling weights were generated in a series of steps that parallel the steps computing the full-sample sampling weights. The replicate base weight for each sampled household or adult and each replicate is either equal to *R/(R-1)* times the full sample base weight (if the household is contained in the replicate subset) or equal to 0 (if the household is not contained in the replicate subset, but instead is contained in the "deleted" set for that replicate).

Nonresponse and calibration adjustments were then computed for each set of replicate weights, using the replicate weights in the computation of nonresponse and calibration adjustments in place of the original weights. These calculations generated a set of replicate nonresponse and poststratification adjustments for each responding adult. The final replicate weights were products of the replicate weights, nonresponse adjustments, and calibration adjustments.

5.6 Taylor Series Variance Estimation

Even though replication is the recommended method for variance estimation for HINTS, not all software packages have a replication option to produce variance estimates. For example, SPSS has built-in options for estimating variance using Taylor's Series methods but not replication methods. To accommodate SPSS users or any end user who wants to produce variances using Taylor Series methods, Westat provided the appropriate variables on the HINTS data files to do so.

The full-sample weight (as described in the introduction of Section 5) is used as the weight to compute Taylor's Series variance estimates. The variable VarStratum indicates the variance-estimation stratum and the variable VarCluster indicates the primary sampling unit (PSU) or cluster within the variance-estimation stratum. These variables allow the analyst to produce variance estimates using Taylor's Series.

6. Response Rates

For HINTS 6, response rates were calculated using the RR4 formula of the American Association of Public Opinion Research (AAPOR). Although HINTS has historically used the RR2 calculation as its official method for computing response rates, the RR4 formula was used starting with HINTS 5, Cycle 4. The difference between the RR2 and RR4 calculation is that the RR4 formula is adjusted based on an estimate of the eligibility rate (e) among the unresolved households (i.e. the households that never return a survey or refuse, or have mailings returned because they were undeliverable).

Incorporating e into HINTS's response rate calculation is appropriate for our address-based sample design where a large proportion of the sampled units' eligibility statuses are never resolved. The RR2 calculation is more conservative than RR4 because it treats all of the unresolved households that never return a survey as eligible for the study (i.e., $e = 1$). Numerous other federal surveys incorporate an estimate of e into their response rate calculation, including the CDC's Behavioral Risk Factor Surveillance System (BRFSS), the NCHS's National Household Education Surveys Program (NHES), and the FDA's National Survey of Health Information and Communication (NSHIC). Recently, DeMatteis (2019) developed a method for estimating e in addressed-based samples designs, facilitating the use of RR4 for studies like HINTS.

The formula to calculate e for Cycle 4 is based on DeMatteis (2019):

$$e = \left(\frac{1}{\hat{T}_U}\right)\left(\hat{T}_{ACS} - \hat{T}_R - \hat{T}_{NR}\right)$$

where $\hat{T}_U$ is the base-weighted number of households with unknown eligibility, $\hat{T}_R$ is the estimated eligible responding households, and $\hat{T}_{NR}$ is the estimated eligible non-responding households (e.g. refusals and incompletes). $\hat{T}_{ACS}$ is an estimate of the total number of eligible households in the population based on a reliable external source, the 2021 American Community Survey. Table 6-1 summarizes the components of the e calculation.

Table 6-1. Components of e calculation used to compute response rate (RR4)

Household status	Description	Base-weighted sum of households
$\hat{T}_R$	Total responding households	34,827,468
$\hat{T}_{NR}$	Total non-responding, known eligible households	1,108,819
$\hat{T}_U$	Total households with unknown eligibility	88,122,557
$\hat{T}_{ACS}$	Total households estimated by 2021 ACS	127,544,730

As mentioned in the sampling frame section (2.1), the HINTS 6 sampling procedures excluded PO Box addresses linked to city style addresses due to their high undeliverable rates. As a result the e estimate was above 1 (1.06) which suggests a very high eligibility rate among the unresolved households. Therefore e was set to 1 in the response rate calculation which makes the RR4 equivalent to RR2.

Table 6-2 shows the final response rates (RR4) overall and for each strata. Tables 6-3 and 6-4 show the response rates by each stratification factor (high/low minority status and urban/rural). These data have been weighted to account for the oversampling of addresses in high-minority and rural strata.

The overall weighted response rate to HINTS 6 was 28.1 percent and differed significantly by strata. The high-minority strata had, on average, ten point lower response rates than the low-minority strata (31 and 21 percent respectively). Rural and non-rural areas did not differ in response rates. The percent of undeliverable households was slightly higher in the high-minority-urban strata than the others.

The final response rates in Tables 6-2, 6-3 and 6-4 reflect the additional fourth non-response conversion mailing which was intended to boost the lower than expected response rates achieved by HINTS's standard three survey-mailing procedure. Excluding the 4th mailing, the overall response rate was 25.9 percent, therefore the 4th mailing improved response rates by 2.1 percentage points (about 8 percent). This nominal improvement was relatively consistent across strata; the Low-minority-urban strata saw the largest boost from the additional mailing (2.3 percentage points, or 8 percent improvement) while the High-minority-rural strata saw the smallest (1.8 percentage points, or 9 percent improvement).

Table 6-2. Final Weighted Response rate calculations overall and by strata (**RR4**)

Response class	High Minority, Rural	High Minority, Urban	Low Minority, Rural	Low Minority, Urban	Overall
Total sample*	2,348,949	33,467,332	14,730,127	73,512,436	124,058,843
Respondents	508,324	6,928,685	4,337,375	23,053,083	34,827,468
Nonrespondents	1,840,625	26,538,647	10,392,752	50,459,352	89,231,376
Undeliverable	418,137	3,634,543	1,833,562	6,030,825	11,917,068
Total Households	2,767,086	7,101,875	16,563,689	79,543,261	135,975,911
Household response rate	**21.64%**	**20.70%**	**29.45%**	**31.36%**	**28.07%**
Percent Undeliverable	15.11%	9.80%	11.07%	7.58%	8.76%

*values may not sum to total sample due to rounding of weighted values to nearest single digit

Table 6-3 Final Weighted Response rate calculations by High/Low Minority strata (RR4)

Response class	High minority	Low minority	Overall
Total sample*	35,816,281	88,242,563	**124,058,843**
Respondents	7,437,009	27,390,459	**34,827,468**
Nonrespondents	28,379,272	60,852,104	**89,231,376**
Undeliverable	4,052,680	7,864,387	**11,917,068**
Total Households	39,868,961	96,106,950	**135,975,911**
Household response rate	20.76%	31.04%	28.07%
Percent Undeliverable	10.17%	8.18%	8.76%

*values may not sum to total sample due to rounding of weighted values to nearest single digit

Table 6-4. Final Weighted Response rate calculations by Rural/Urban strata (**RR4**)

Response class	Rural	Urban	Overall
Total sample*	17,079,076	106,979,768	**124,058,843**
Respondents	4,845,699	29,981,768	**34,827,468**
Nonrespondents	12,233,376	76,997,999	**89,231,376**
Undeliverable	2,251,699	9,665,368	**11,917,068**
Total Households	19,330,775	116,645,136	**135,975,911**
Household response rate	28.37%	28.03%	28.07%
Percent Undeliverable	11.65%	8.29%	8.76%

*values may not sum to total sample due to rounding of weighted values to nearest single digit

Push-to-Web Experimental Response Rate Results

Tables 6-5 and 6-6 present the response rates for the mixed-mode push-to-web experiment wherein concurrent and sequential mailings were tested. The control group (concurrent, paper + web) response rate (29.1 percent) was significantly higher than that for the treatment group (sequential, web-only offered first, followed by paper + web, 25.8 percent) ($p < .01$). The difference in response rate by treatment group varied somewhat across the four strata, ranging from 0.8 percentage points in the High-minority-rural strata to 4.6 points in the High-minority urban strata (Figure 6-1) ($p <$

.05). The proportion of responses provided by web was significantly higher in the concurrent group (60.3 percent) than in the sequential (54.2 percent, see Figure 6-2) ($p < .01$).

Table 6-5. Final Weighted Response rate calculations for treatment group 1 (concurrent mixed-mode) by strata (**RR4**)

Response class	High Minority, Rural	High Minority, Urban	Low Minority, Rural	Low Minority, Urban	Overall
Total sample*	1,639,755	23,518,266	10,385,048	51,500,646	87,043,715
Respondents	358,696	5,190,660	3,112,433	16,631,773	25,293,562
Nonrespondents	1,281,058	18,327,606	7,272,615	34,868,873	61,750,152
Undeliverable	303,355	2,553,906	1,248,055	4,411,035	8,516,350
Total Households	1,943,109	26,072,172	11,633,103	55,911,681	95,560,065
Household response rate	21.87%	22.07%	29.97%	32.29%	29.06%
Percent Undeliverable	15.61%	9.80%	10.73%	7.89%	8.91%

*values may not sum to total sample due to rounding of weighted values to nearest single digit

Table 6-6. Final Weighted Response rate calculations for treatment group 2 (sequential mixed-mode) by strata (**RR4**)

Response class	High Minority, Rural	High Minority, Urban	Low Minority, Rural	Low Minority, Urban	Overall
Total sample*	709,194	9,949,066	4,345,079	22,011,790	37,015,129
Respondents	149,628	1,738,025	1,224,943	6,421,311	9,533,905
Nonrespondents	559,566	8,211,041	3,120,137	15,590,479	27,481,223
Undeliverable	114,783	1,080,637	585,507	1,619,790	3,400,717
Total Households	823,977	11,029,703	4,930,586	23,631,580	40,415,846
Household response rate	**21.10%**	**17.47%**	**28.19%**	**29.17%**	**25.76%**
Percent Undeliverable	13.93%	9.80%	11.88%	6.85%	8.41%

*values may not sum to total sample due to rounding of weighted values to nearest single digit

Figure 6-1. Comparison of response rates by mixed-mode treatment group and strata

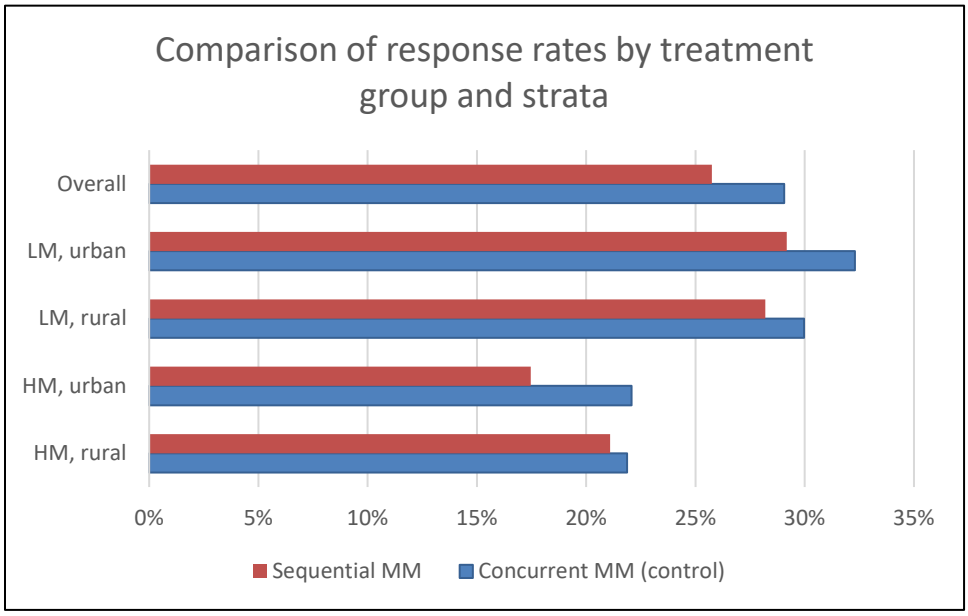
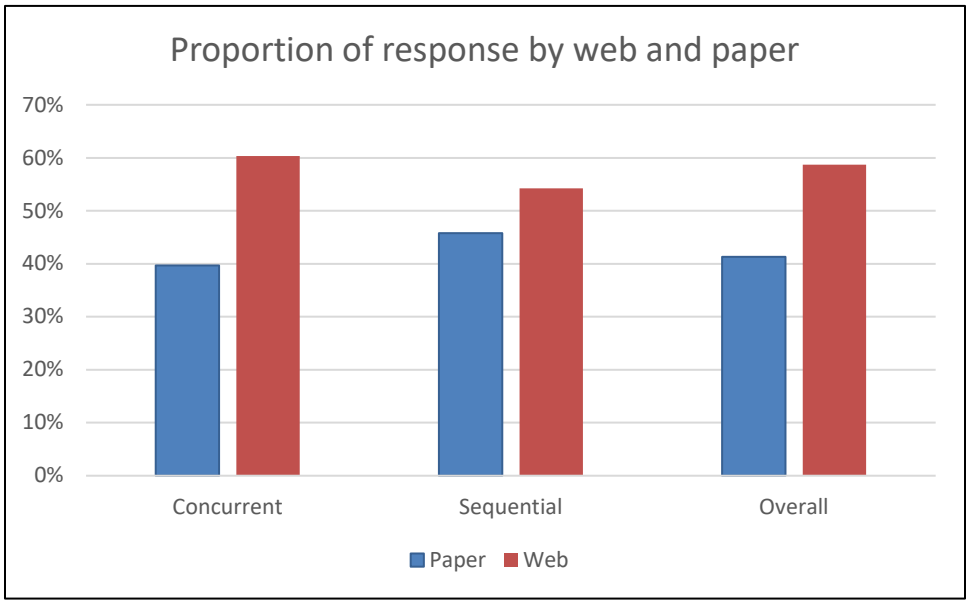


Figure 6-2. Mode of response by mixed mode treatment group



Web Survey Prompt Intervention Response Rate Results

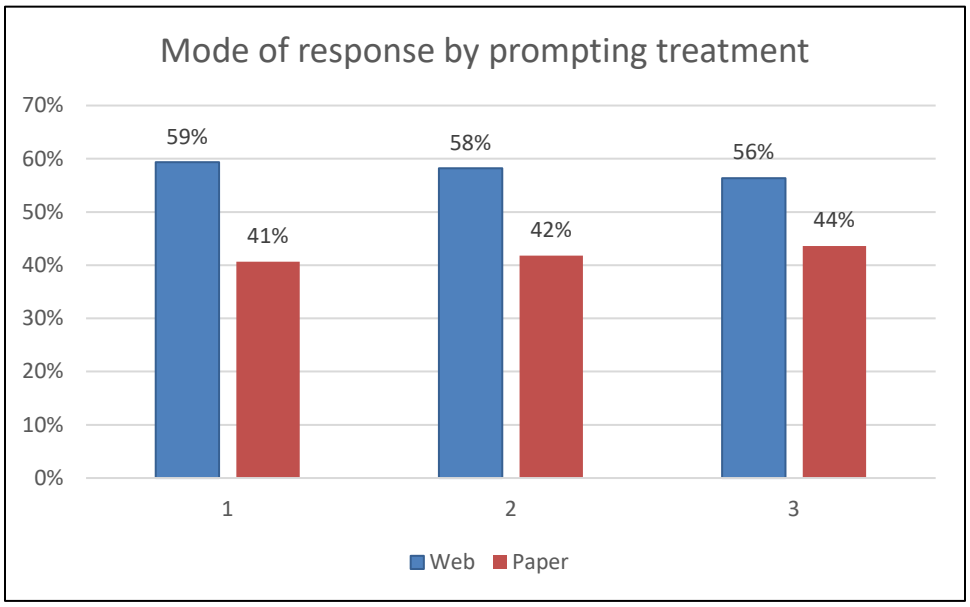
HINTS 6 included an experiment for web survey respondents where those who answered too fast or 'straight-lined' a grid question (choosing the same answer for all items in grids where variation in response is expected) were prompted with a message asking them to either slow down or reconsider

their answers. The experiment included three groups that varied how many times and when an individual could be prompted:

1. 1 speeding and 1 straight-lining prompt.
2. 2 speeding and 2 straight-lining prompts.
3. 2 speeding and 2 straight-lining prompts, controlled such that only 1 of each could appear in the 1st half and 1 of each in the 2nd half of the survey.

Group 1 achieved the highest response rate (28.9 percent), followed by groups 2 (27.7 percent) and 3 (25.1 percent); all of these differences were statistically significant ($p < .01$). Group 1 also achieved a higher proportion of web response (59.3 percent) than groups 2 (58.2 percent) and 3 (56.4 percent), however these differences were not statistically significant ($p > .05$, see Figure 6-3)) These results suggest that the prompting interventions impacted unit non-response and only had minimal impact on the mode respondents chose.

Figure 6-3. Mode of response by prompting intervention treatment group



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Appendix A

HINTS 6 Instrument

Appendix A
HINTS 6 Instrument

Health Information

National Trends Survey

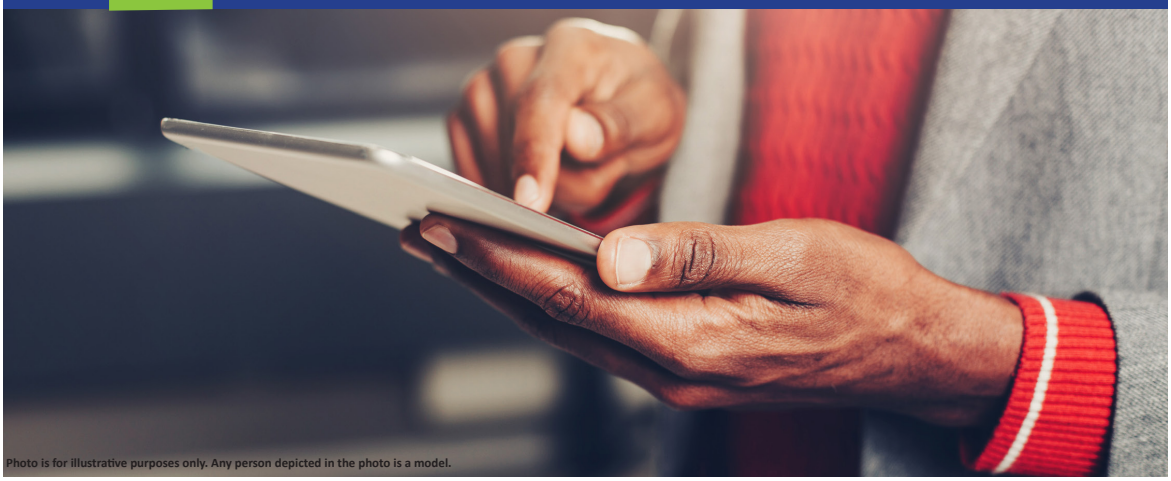

Photo is for illustrative purposes only. Any person depicted in the photo is a model.

hints

H6

START HERE:

Instructions

- ▶ Please use a black or blue pen to complete this form.
- ▶ Mark ☒ to indicate your answer.
- ▶ If you want to change your answer, mark ▩ on the wrong answer.

1. Is there more than one person age 18 or older living in this household?

   ☐ Yes
   ☐ No → **GO TO A1 on the next page**

2. Including yourself, how many people age 18 or older live in this household?

   ☐☐

3. **The adult with the next birthday should complete this questionnaire.** This way, across all households, HINTS will include responses from adults of all ages.

4. Please write the first name, nickname, or initials of the adult with the next birthday. This is the person who should complete the questionnaire.

   ☐

Si prefiere recibir la encuesta en español, por favor llame 1-888-738-6812

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A: Looking For Health Information

A1. Have you ever looked for information about cancer from any source?

- ☐ Yes
- ☐ No → **GO TO A3 below**

A2. Based on the results of your most recent search for information about cancer, how much do you agree or disagree with **each** of the following statements?

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. It took a lot of effort to get the information you needed	☐	☐	☐	☐
b. You felt frustrated during your search for the information	☐	☐	☐	☐
c. You were concerned about the quality of the information	☐	☐	☐	☐
d. The information you found was hard to understand	☐	☐	☐	☐

A3. In general, how much would you trust information about cancer from **each** of the following?

	Not at all	A little	Some	A lot
a. A doctor	☐	☐	☐	☐
b. Family or friends	☐	☐	☐	☐
c. Government health agencies	☐	☐	☐	☐
d. Charitable organizations	☐	☐	☐	☐
e. Religious organizations and leaders	☐	☐	☐	☐
f. Scientists	☐	☐	☐	☐

A4. How often do health recommendations from experts seem to conflict or contradict one another?

- ☐ Never
- ☐ Rarely
- ☐ Often
- ☐ Very Often

A5. How often do health recommendations from experts seem to change over time?

- ☐ Never
- ☐ Rarely
- ☐ Often
- ☐ Very Often

B: Using the Internet to Find Information

B1. Do you ever go online to access the Internet or World Wide Web, or to send and receive e-mail?

- ☐ Yes
- ☐ No → **GO TO B5 on the next page**

B2. When you use the Internet, do you access it through...

	Yes	No
a. A regular dial-up telephone line?	☐	☐
b. A high-speed service such as DSL, cable, FiOS, Wi-Fi, or satellite?	☐	☐
c. A cellular network (i.e., phone, 3G/4G/5G)?	☐	☐

B3. In the past 12 months, have you used the Internet to take care of any of the following health-related needs?

	Yes	No
a. Look for health or medical information	☐	☐
b. Send a message to a health care provider or a health care provider's office	☐	☐
c. View medical test results	☐	☐
d. Make an appointment with a health care provider	☐	☐

B4. How satisfied are you with your Internet connection at home to meet health-related needs?

- ☐ Extremely satisfied
- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Not very satisfied
- ☐ Not at all satisfied

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B5. How confident are you that you can find helpful health resources on the Internet?

- ☐ Completely confident
- ☐ Very confident
- ☐ Somewhat confident
- ☐ A little confident
- ☐ Not confident at all

B6. Please indicate if you have each of the following.

Mark *all that apply*.

- ☐ Tablet computer (for example, an iPad, Samsung Galaxy, Motorola Xoom, or Kindle Fire)
- ☐ Smartphone (for example, an iPhone, Android, Blackberry, or Windows phone)
- ☐ Basic cell phone only
- ☐ I do not have any of the above

GO TO B8

B7. In the past 12 months, have you used a health or wellness app on your tablet or smartphone?

- ☐ Yes
- ☐ No
- ☐ I do not have any health apps on my tablet or smartphone

B8. In the past 12 months, have you used an electronic wearable device to monitor or track your health or activity? For example, a Fitbit, Apple Watch, or Garmin Vivofit.

- ☐ Yes
- ☐ No → **GO TO B11 in the next column**

B9. In the **past month**, how often did you use a wearable device to track your health?

- ☐ Every day
- ☐ Almost every day
- ☐ 1-2 times per week
- ☐ Less than once per week
- ☐ I did not use a wearable device in the past month

B10. Would you be willing to share health data from your wearable device with…

	Yes	No
a. your health care provider?	☐	☐
b. your family or friends?	☐	☐

B11. Have you shared health information from either **an electronic monitoring device or smartphone** with a health professional within the last 12 months?

- ☐ Yes
- ☐ No
- ☐ Not Applicable – I do not use a smartphone or electronic monitoring device

B12. Sometimes people use the Internet to connect with other people online through social media. Examples of social media sites include Facebook, Twitter, TikTok, YouTube, and Instagram.

In the past 12 months, how often did you do the following?

	Almost every day	At least once a week	A few times a month	Less than once a month	Never
a. Visited a social media site	☐	☐	☐	☐	☐
b. Shared **personal** health information on social media	☐	☐	☐	☐	☐
c. Shared **general** health-related information on social media (for example, a news article)	☐	☐	☐	☐	☐
d. Interacted with people who have similar health or medical issues on social media or online forums	☐	☐	☐	☐	☐
e. Watched a health-related video on a social media site (for example, YouTube)	☐	☐	☐	☐	☐

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B13. How much of the health information that you see on social media do you think is false or misleading?

- ☐ I do not use social media → **GO TO B15 below**
- ☐ None
- ☐ A little
- ☐ Some
- ☐ A lot

B14. How much do you agree or disagree with the following statements?

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. I use information from social media to make decisions about my health	☐	☐	☐	☐
b. I use information from social media in discussions with my health care provider	☐	☐	☐	☐
c. I find it hard to tell whether health information on social media is true or false	☐	☐	☐	☐
d. Most of the people in my social media networks have the same views about health as me	☐	☐	☐	☐

B15. Who do you think has the **main** responsibility for reducing the amount of false or misleading health information on social media?
Mark only *one*.

- ☐ The news media
- ☐ Social media platforms like Facebook, Twitter, or YouTube
- ☐ The government
- ☐ Individual social media users
- ☐ Medical providers and health care systems
- ☐ Other – Specify → ☐

C: Your Health Care

C1. **In the past 12 months**, not counting times you went to an emergency room, how many times did you go to a doctor, nurse, or other health professional to get care for yourself?

- ☐ None → **GO TO C5 on the next page**
- ☐ 1 time
- ☐ 2 times
- ☐ 3 times
- ☐ 4 times
- ☐ 5-9 times
- ☐ 10 or more times

C2. Overall, how would you rate the quality of health care you received **in the past 12 months?**

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

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C3. The following questions are about your communication with all doctors, nurses, or other health professionals you saw **during the past 12 months**.

How often did they do each of the following?	Always	Usually	Sometimes	Never
a. Give you the chance to ask all the health-related questions you had	☐	☐	☐	☐
b. Give the attention you needed to your feelings and emotions	☐	☐	☐	☐
c. Involve you in decisions about your health care as much as you wanted	☐	☐	☐	☐
d. Make sure you understood the things you needed to do to take care of your health	☐	☐	☐	☐
e. Explain things in a way you could understand	☐	☐	☐	☐
f. Spend enough time with you	☐	☐	☐	☐
g. Help you deal with feelings of uncertainty about your health or health care	☐	☐	☐	☐

C4. In the past 12 months, when getting care for a medical problem, was there a time when you had to bring an X-ray, MRI, or other type of test result with you to the appointment?

- ☐ Yes
- ☐ No

C5. In the past 12 months, did you delay or not get medical care you felt you needed—such as seeing a doctor, a specialist, or other health professional?

- ☐ Yes
- ☐ No, I received the medical care I felt I needed
- ☐ I did not need any medical care in the past 12 months

C6. Are you covered by any kind of health insurance or health care plan, including employer-sponsored insurance, prepaid plans, or government plans such as Medicare, Medicaid or TRICARE?

- ☐ Yes
- ☐ No

C7. How confident are you filling out medical forms by yourself?

- ☐ Not at all
- ☐ A little
- ☐ Somewhat
- ☐ Very

C8. How much do you trust the health care system (for example, hospitals, pharmacies, and other organizations involved in health care)?

- ☐ Not at all
- ☐ A little
- ☐ Some
- ☐ A lot

C9. Have you ever been treated unfairly or been discriminated against when getting medical care because of your race or ethnicity?

- ☐ Yes
- ☐ No

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D: Telehealth

D1. A telehealth visit is a telephone or video appointment with a doctor or health professional.

In the past 12 months, did you receive care from a doctor or health professional using telehealth?

- ☐ Yes, by video
- ☐ Yes, by phone call (voice only with no video)
- ☐ Yes, some by video and some by phone call

GO TO D4 in the next column

- ☐ No telehealth visits in the past 12 months

D2. In the past 12 months, were you offered the option to have a telehealth visit for any medical care you tried to schedule?

- ☐ Yes
- ☐ No → **GO TO E1 on the next page**
- ☐ I did not try to schedule any medical care in the past 12 months → **GO TO E1 on the next page**

D3. Did you choose **not** to participate in a telehealth visit for any of the following reasons?

	Yes	No
a. I preferred to have the appointment(s) in person	☐	☐
b. I was concerned about the privacy of telehealth visits	☐	☐
c. I thought the telehealth technology would be difficult to use	☐	☐

If you have not had a telehealth visit in the last 12 months, go to E1 on the next page

Otherwise, go to D4 in the next column

D4. Why did you choose a telehealth visit(s) for yourself?

	Yes	No
a. The health care provider recommended or required the visit use telehealth	☐	☐
b. I wanted advice about whether I needed in-person medical care	☐	☐
c. I wanted to avoid possible infection at the doctor's office or hospital (for example, COVID-19 or flu)	☐	☐
d. It was more convenient than going to the doctor (for example, less travel or wait times)	☐	☐
e. I could include family or other caregivers in my appointment	☐	☐

D5. What was the primary reason for your most recent telehealth visit?

Mark only *one*.

- ☐ Annual visit
- ☐ Minor illness/acute care (for example, fever, sinus infection)
- ☐ Managing my chronic health condition/disease (for example, high blood pressure, diabetes, heart disease, obesity, cancer)
- ☐ Medical emergency
- ☐ Mental health, behavioral, or substance abuse issues (for example, depression, anxiety, drug or alcohol abuse)
- ☐ Other

D6. In general, how much do you agree or disagree with the following statements regarding your telehealth visit(s)?

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. I had technical problems with my telehealth visit(s) (for example, difficulty using the technology, trouble seeing or hearing my health care provider)	☐	☐	☐	☐
b. The care I received through telehealth was as good as a regular in-person visit	☐	☐	☐	☐
c. I was concerned about the privacy of my telehealth visit(s)	☐	☐	☐	☐

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E: Medical Records

Next, we are going to ask you some questions about online medical records. Online medical records, also known as patient portals, are secure websites that allow people to access their health records and communicate with health care providers using a computer or smartphone health app.

E1. Have you ever been offered online access to your medical records (for example, a patient portal) by your…

	Yes	No	Don't Know
a. health care provider?	☐	☐	☐
b. health insurer?	☐	☐	☐

E2. Have any of your health care providers, including doctors, nurses, or office staff ever encouraged you to use an online medical record or patient portal?

- ☐ Yes
- ☐ No

E3. For the next set of questions, please think about the online medical record or patient portal offered to you by **a health care provider or insurer.**

How many times did you access your online medical record or patient portal in the last 12 months?

- ☐ I do not have an online medical record or patient portal that was offered to me by a health care provider or insurer. ➔ **GO TO E7 on the next page**
- ☐ 0 ➔ **GO TO E7 on the next page**
- ☐ 1 to 2 times
- ☐ 3 to 5 times
- ☐ 6 to 9 times
- ☐ 10 or more times

E4. How did you access your online medical record or patient portal?

- ☐ App
- ☐ Website
- ☐ Both app and website
- ☐ Don't know

E5. In the past 12 months, have you used your online medical record or patient portal to…

	Yes	No
a. Look up test results?	☐	☐
b. Download your health information to your computer or mobile device, such as a cell phone or tablet?	☐	☐
c. Electronically send your medical information to a third party (such as another health care provider, a family member, or a smartphone health app)?	☐	☐
d. View clinical notes (a health care provider's written notes that describe your visit)?	☐	☐

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E6. How easy or difficult was it to understand the health information in your online medical record or patient portal?

- ☐ Very easy
- ☐ Somewhat easy
- ☐ Somewhat difficult
- ☐ Very difficult

E7. Which of the following organizations/ providers do you have an online medical record or patient portal with? Your medical record could include specific types of health data, such as insurance claims, prescription information, and laboratory test results.

Mark *all that apply*.

- ☐ My primary care doctor's office
- ☐ Other health care provider(s) such as a specialty provider, counselor, or dentist
- ☐ My insurer(s)
- ☐ Clinical laboratory that performs lab tests
- ☐ Pharmacy
- ☐ I do not have any online medical records or patient portals. → **GO TO F1 in the next column**

E8. Do you have one, or more than one patient portal or online medical record?

- ☐ One → **GO TO F1 in the next column**
- ☐ More than one

E9. Have you ever used an app like 'Apple Health Records' or 'CommonHealth' to combine your medical information from different patient portals or online medical records into one place?

- ☐ Yes
- ☐ No

F: Caregiving

F1. Are you currently caring for or making health care decisions for someone with a **medical, behavioral, disability, or other condition?**

Mark *all that apply*.

- ☐ Yes, a parent/parents
- ☐ Yes, a spouse/partner
- ☐ Yes, a child/children that needs special care due to a medical condition or disability
- ☐ Yes, another family member
- ☐ Yes, a friend or other non-relative
- ☐ No → **GO TO G1 on the next page**

F2. Do you provide any of this care professionally as part of a job (for example, as a nurse or professional home health aide)?

- ☐ Yes
- ☐ No

F3. Please think about the individual for whom you are **currently providing the most care**.

Please **check all** conditions for which you have provided care for this person.

Mark *all that apply*.

- ☐ Cancer
- ☐ Alzheimer's, confusion, dementia, forgetfulness, brain injury, stroke, or other neurological issue
- ☐ A short-term but serious condition such as recovery from surgery or an injury
- ☐ A long-term illness such as high blood pressure, hypertension, diabetes, heart disease, heart attack, lung disease, or emphysema
- ☐ Difficulty moving around such as an orthopedic issue, a musculoskeletal issue, or an aging-related issue
- ☐ A mental health issue, substance abuse, intellectual or developmental issue
- ☐ Other – Specify → ☐
- ☐ Not sure/don't know

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F4. Think about the individual for whom you are **currently providing the most care**. How many times did you access that person's online medical record in the last 12 months?

- ☐ Care recipient does not have an online medical record
- ☐ None
- ☐ 1 to 2 times
- ☐ 3 to 5 times
- ☐ 6 to 9 times
- ☐ 10 or more times

G: Genetic Testing

G1. Genes are inherited from your parents and are passed down from one generation to the next through the family tree. Genetic tests can determine your genetic makeup.

Which of the following types of genetic tests have you **heard of**?

Mark all that apply.

- ☐ **Ancestry testing** to understand where you and your relatives come from (for example, tests offered by companies such as Ancestry or 23andMe)
- ☐ **Personal trait testing** to understand whether you have genes that are linked to certain characteristics like enjoying the taste of cilantro (for example, tests offered by companies such as Ancestry or 23andMe)
- ☐ **Testing for specific diseases** to understand your risk of getting certain diseases such as breast cancer, colon cancer, cardiovascular (heart) disease, diabetes, or dementia/Alzheimer's
- ☐ **Prenatal genetic carrier testing** to determine the risk that a man and a women will have a baby with certain diseases such as cystic fibrosis or Tay Sachs
- ☐ Other-Specify → ☐
- ☐ I have not heard of any genetic tests → **GO TO H1**

G2. From which of the following sources did you read or hear anything about genetic tests?

Mark *all that apply*.

- ☐ Internet (Social media, Google searches)
- ☐ Other media (TV, radio, newspaper, magazine)
- ☐ Health care provider and/or counselor
- ☐ Family or friend
- ☐ I have not heard about genetic tests → **GO TO H1**

G3. Which of the following types of genetic tests have you **had**?

Mark *all that apply*.

- ☐ **Ancestry testing** to understand where you and your relatives come from (for example, tests offered by companies such as Ancestry or 23andMe)
- ☐ **Personal trait testing** to understand whether you have genes that are linked to certain characteristics like enjoying the taste of cilantro (for example, tests offered by companies such as Ancestry or 23andMe)
- ☐ **Testing for specific diseases** to understand your risk of getting certain diseases such as breast cancer, colon cancer, cardiovascular (heart) disease, diabetes, or dementia/Alzheimer's
- ☐ **Prenatal genetic carrier testing** to determine the risk that a man and a women will have a baby with certain diseases such as cystic fibrosis or Tay Sachs
- ☐ Other-Specify → ☐
- ☐ Not sure what type of genetic test I've had → **GO TO H1**
- ☐ I have not HAD any genetic tests → **GO TO H1**

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G4. If you had a genetic test **for disease risk (including prenatal carrier testing)**, how did you get the test?

Mark *all that apply*.

- ☐ A genetic counselor ordered the test
- ☐ My health care provider other than a genetic counselor ordered the test
- ☐ I ordered the test directly from the laboratory or company on the Internet
- ☐ I have not had any genetic test for disease risk

G5. What were the reasons you had genetic testing?

Mark *all that apply*.

- ☐ Doctor's recommendation
- ☐ Understand my family ancestry
- ☐ Find relatives
- ☐ Learn more about personal traits that may be influenced by genetics
- ☐ Learn more about my risk for certain diseases (for example, cancer or heart disease)
- ☐ Understand things like what diet might be best for me
- ☐ Prenatal testing - for example, carrier testing
- ☐ I received the test as a gift
- ☐ Other-Specify → ☐

G6. Overall, how confident are you that your genetic testing results are correct and accurate?

- ☐ Completely confident
- ☐ Very confident
- ☐ Somewhat confident
- ☐ A little confident
- ☐ Not confident at all

G7. If you had a genetic test, who did you share the results with?

Mark *all that apply*.

- ☐ Your health care provider
- ☐ Genetic counselor
- ☐ Spouse/partner
- ☐ Parents
- ☐ Siblings
- ☐ Children
- ☐ Friend
- ☐ Other
- ☐ Did not share the results

G8. If you had a genetic test, what did you expect would happen to your test results after the test?

Mark *only one*.

- ☐ The laboratory or company that did the test would only share my test results with me and/or my health care provider → **GO TO G10 on the next page**
- ☐ The laboratory or company that did the test may also share my test results with other groups

G9. In addition to you and your health care provider, who did you think the laboratory that did your genetic test would share your results with?

Mark *all that apply*.

- ☐ Scientific researchers for research purposes
- ☐ Other for-profit companies for commercial purposes such as pharmaceutical companies or companies that gather and sell health data
- ☐ Law enforcement agencies for legal purposes
- ☐ Insurance companies

G10. If you had a genetic test, who helped you understand the results?

Mark *all that apply*.

- ☐ Your health care provider
- ☐ Genetic counselor
- ☐ Spouse/partner
- ☐ Parents
- ☐ Siblings
- ☐ Children
- ☐ Friend
- ☐ Other
- ☐ No one helped me understand the results

G11. How have you changed your behavior based on the results of genetic testing?

Mark *all that apply*.

- ☐ I changed my lifestyle (for example, increased physical activity, changed diet, or quit smoking)
- ☐ I started taking or changed dietary supplements
- ☐ I changed medications
- ☐ I did more health screenings
- ☐ I did fewer health screenings
- ☐ Other - Specify → ☐
- ☐ I have not changed my behavior based on genetic testing

H: Your Overall Health

H1. In general, would you say your health is...?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

H2. Overall, how confident are you about your ability to take good care of your health?

- ☐ Completely confident
- ☐ Very confident
- ☐ Somewhat confident
- ☐ A little confident
- ☐ Not confident at all

H3. In general, how easy or hard do you find it to understand medical statistics?

- ☐ Very easy
- ☐ Easy
- ☐ Hard
- ☐ Very hard

H4. Are you deaf or do you have serious difficulty hearing?

- ☐ Yes
- ☐ No

H5. Do you have friends or family members that you talk to about your health?

- ☐ Yes
- ☐ No

H6. Has a doctor or other health professional ever told you that you had any of the following medical conditions:

	Yes	No
a. Diabetes or high blood sugar?	☐	☐
b. High blood pressure or hypertension?	☐	☐
c. A heart condition such as heart attack, angina, or congestive heart failure?	☐	☐
d. Chronic lung disease, asthma, emphysema, or chronic bronchitis?	☐	☐
e. Depression or anxiety disorder?	☐	☐

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H7. About how tall are you without shoes?

☐ Feet ***and*** ☐ Inches

H8. About how much do you weigh, in pounds, without shoes?

☐ Pounds

H9. During the past 7 days, how many hours of sleep did you get on average per night?

☐☐ **Hours of sleep *per night***

H10. Please respond to each item by marking one box per row.

	Very much	Quite a bit	Somewhat	A little bit	Not at all
a. My life has meaning	☐	☐	☐	☐	☐
b. I have a clear sense of direction in life	☐	☐	☐	☐	☐
c. I experience deep fulfillment in my life	☐	☐	☐	☐	☐
d. My life has purpose	☐	☐	☐	☐	☐

H11. **Over the past 2 weeks**, how often have you been bothered by any of the following problems?

	Nearly every day	More than half the days	Several days	Not at all
a. Little interest or pleasure in doing things	☐	☐	☐	☐
b. Feeling down, depressed, or hopeless	☐	☐	☐	☐
c. Feeling nervous, anxious, or on edge	☐	☐	☐	☐
d. Not being able to stop or control worrying	☐	☐	☐	☐

H12. Please respond to each item by marking one box per row.

	Always	Usually	Sometimes	Rarely	Never
a. I feel left out	☐	☐	☐	☐	☐
b. I feel that people barely know me	☐	☐	☐	☐	☐
c. I feel isolated from others	☐	☐	☐	☐	☐
d. I feel that people are around me but not with me	☐	☐	☐	☐	☐

J: Environment and Health

J1. How much do you think climate change will harm your health?

- ☐ A lot
- ☐ Some
- ☐ A little
- ☐ Not at all
- ☐ Don't know

J2. During the past 12 months, how many times have you had a sunburn (even a small part of your skin turns red or hurts for 12 hours or more) from too much sun exposure?

☐☐☐ **Sunburns in past 12 months**

→ **(IF 0 THEN GO TO J5 on the next page)**

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J3. On the most recent time you were sunburned, what were you doing when you were sunburned?

Mark *all that apply*.

- ☐ Working at your job
- ☐ Working outside at your own home or a family/friend's home
- ☐ Sunbathing
- ☐ Swimming
- ☐ Exercise (running, hiking, sports) (do not include swimming)
- ☐ Watching a sporting event
- ☐ Attending an outdoor event or venue (a concert, the zoo, a fair, etc.)
- ☐ Day-to-day activities
- ☐ Other
- ☐ Don't know

J4. Were you drinking alcohol at any of the times when you were sunburned?

- ☐ Yes
- ☐ No

J5. After several months of not being in the sun very much, if you went out in the sun for an hour without sunscreen, a hat or protective clothing, which one of these best describes what would happen to your skin?

- ☐ Get a severe sunburn with blisters
- ☐ Have a moderate sunburn with peeling
- ☐ Burn mildly with some or no tanning
- ☐ Turn darker without sunburn
- ☐ Nothing would happen to my skin

K: Social Determinants of Health

K1. In the past 12 months, how often were the following things true?

	Often true	Sometimes true	Never true
a. Someone in your household cut the size of meals or skipped meals because there wasn't enough money for food	☐	☐	☐
b. Someone in your household was not able to afford to eat balanced meals	☐	☐	☐
c. Someone in your household was worried about being forced to move (for example, because of eviction or foreclosure)	☐	☐	☐
d. Lack of reliable transportation kept someone in your household from medical appointments, work, or from getting things needed for daily living	☐	☐	☐

K2. If you were experiencing one of the issues below, how comfortable would you be with your health care providers **sharing your information about these issues *with each other for your treatment purposes***?

	Very comfortable	Somewhat comfortable	Somewhat uncomfortable	Very uncomfortable
a. Issues with affording or accessing healthy food	☐	☐	☐	☐
b. Issues with transportation that make it difficult getting to work or medical appointments	☐	☐	☐	☐
c. Issues with housing (for example, concerns about eviction, making mortgage payments, lead paint, or asbestos)	☐	☐	☐	☐

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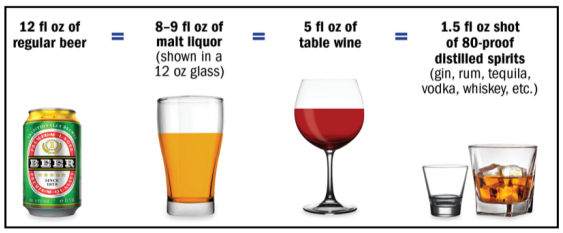
L: Health and Nutrition

L1. Think about **the last time** you ordered food in a fast food or sit down restaurant, did you notice calorie information listed next to the food on the menu or menu board?

- ☐ Yes
- ☐ No

L2. These are examples of one drink of alcohol:



During the past 30 days, **how many days per week** did you have at least one drink of any alcoholic beverage?

☐ Days per week

→ **(IF 0 THEN GO TO L4 below)**

L3. During the past 30 days, **on the days when you drank**, about how many drinks did you drink on average?

☐☐ Average drinks **per day**

L4. ***For males:*** During the past 30 days, how many times did you have 5 or more alcoholic drinks on one occasion?

For females: During the past 30 days, how many times did you have 4 or more alcoholic drinks on one occasion?

- ☐ Never
- ☐ 1 or 2 times
- ☐ 3 to 5 times
- ☐ 6 to 10 times
- ☐ 11 or more times

L5. In the next 12 months, I am likely to…

- ☐ Drink less alcohol than I do now
- ☐ Drink about as much alcohol as I do now
- ☐ Drink more alcohol than I do now
- ☐ I do not drink alcohol now, and do not plan on drinking alcohol in the future

L6. Have you ever heard or read that alcohol increases the risk of cancer?

- ☐ Yes
- ☐ No
- ☐ Don't know

L7. In the past 12 months, have you heard about the negative health consequences of drinking alcohol **from doctors or other health care professionals**?

- ☐ Yes
- ☐ No → **GO TO L9 below**
- ☐ I have not had any medical appointments in the past 12 months → **GO TO L9 below**

L8. Which of the following health consequences of alcohol did the **doctor or other health care professional discuss?**

Mark *all that apply*.

- ☐ Alcoholism
- ☐ Cancer
- ☐ Diabetes
- ☐ Heart Disease
- ☐ Liver Disease

L9. Compared to drinking no alcohol, do you think that having 1-2 alcoholic drinks per day…

- ☐ Decreases risk of future health problems
- ☐ Has no effect on the risk of future health problems
- ☐ Increases risk of future health problems
- ☐ Don't know

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M: Physical Activity and Exercise

M1. **In a typical week**, how many days do you do any physical activity or exercise of at least moderate intensity, such as brisk walking, bicycling at a regular pace, and swimming at a regular pace (do not include weightlifting)?

- ☐ None → **GO TO M3 below**
- ☐ 1 day per week
- ☐ 2 days per week
- ☐ 3 days per week
- ☐ 4 days per week
- ☐ 5 days per week
- ☐ 6 days per week
- ☐ 7 days per week

M2. On the days that you do any physical activity or exercise of at least moderate intensity, how long do you typically do these activities?

☐☐☐ **Minutes of physical activity per day**

M3. **In a typical week**, outside of your job or work around the house, how many days do you do leisure-time physical activities specifically designed to strengthen your muscles such as lifting weights or circuit training (do not include cardio exercise such as walking, biking, or swimming)?

- ☐ None
- ☐ 1 day per week
- ☐ 2 days per week
- ☐ 3 days per week
- ☐ 4 days per week
- ☐ 5 days per week
- ☐ 6 days per week
- ☐ 7 days per week

M4. During the past 7 days, how much time did you spend sitting on a typical day at home or at work? This may include time spent sitting at a desk, visiting friends, reading, driving or riding in a car, or sitting or lying down to watch television.

☐☐ **Hours sitting per day**

N: Tobacco Products

N1. In the **past 3 months**, how often, if at all, have you noticed the health warnings on cigarette packs?

- ☐ I did not see any cigarette packs in the last 3 months
- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very often
- ☐ Don't know

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N2. For the next few questions please think about **all tobacco products**, including cigarettes, e-cigarettes, smokeless tobacco, cigars, pipes, hookah, roll-your-own, and heated tobacco products

During the **past 3 months**, have you noticed or heard any ***anti-tobacco messages*** (that is, messages that talk about the dangers of tobacco products or encourage quitting) in any of the following places?

Mark *all that apply*.

- ☐ Inside or outside stores that sell tobacco products (including product displays and signs)
- ☐ On billboards (including by the roadside, places like bus stops, or on trains)
- ☐ At a pharmacy
- ☐ In bars or restaurants
- ☐ At events (including fairs, markets, festivals, sporting events, or music concerts)
- ☐ On radio
- ☐ On television or streaming platforms (including Netflix or Hulu)
- ☐ On social media (including Facebook, Twitter, TikTok, YouTube, or Instagram)
- ☐ Other websites or online sources
- ☐ In print newspapers or magazines
- ☐ In the mail or an email sent to you
- ☐ Other - Specify → ☐
- ☐ I did not notice any anti-tobacco messaging

N3. During the past **3 months**, have you noticed or heard tobacco products being ***advertised, marketed, or promoted*** in any of the following places?

Mark *all that apply*.

- ☐ Inside or outside stores that sell tobacco products (including product displays and signs)
- ☐ On billboards (including by the roadside, places like bus stops, or on trains)
- ☐ At a pharmacy
- ☐ In bars or restaurants
- ☐ At events (including fairs, markets, festivals, sporting events, or music concerts)
- ☐ At temporary or mobile sales locations or kiosks (including shopping centers, parked in the street, other places, but not at specific events)
- ☐ On radio
- ☐ On television or streaming platforms (including Netflix or Hulu)
- ☐ On social media (including Facebook, Twitter, TikTok, YouTube, or Instagram)
- ☐ Other websites or online sources
- ☐ In print newspapers or magazines
- ☐ In the mail or an email sent to you
- ☐ Other - Specify → ☐
- ☐ I did not notice any tobacco products being advertised, marketed, or promoted

N4. Have you smoked at least 100 cigarettes in your entire life?

- ☐ Yes
- ☐ No

N5. How often do you now smoke cigarettes?

- ☐ Every day
- ☐ Some days
- ☐ Not at all

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N6. The next few questions are about electronic cigarettes (e-cigarettes) that **contain nicotine**. You may also know them as vapes, vape-pens, tanks, mods or pod-mods. E-cigarettes are battery powered devices that contain a liquid that is vaporized and inhaled.

Compared to smoking cigarettes, would you say that using e-cigarettes that **contain nicotine** is…?

- ☐ Much less harmful
- ☐ Less harmful
- ☐ Just as harmful
- ☐ More harmful
- ☐ Much more harmful
- ☐ I don't know

N7. Have you ever used an e-cigarette, even one or two times?

- ☐ Yes
- ☐ No → **GO TO O1 in the next column**

N8. Do you now use an e-cigarette every day, some days, or not at all?

- ☐ Every day
- ☐ Some days
- ☐ Not at all

O: Cancer Screening and Awareness

O1. How interested are you in having a cancer screening test in the next year?

- ☐ Not at all
- ☐ A little
- ☐ Somewhat
- ☐ Very
- ☐ Not applicable/I am up-to-date with screening tests

O2. In the last 12 months, how much did worry about COVID-19 cause you to delay or avoid having a cancer screening test?

- ☐ Not at all
- ☐ A little
- ☐ Some
- ☐ A lot
- ☐ Not applicable (I had not planned to have a screening test)

O3. At any time in the past year, did a doctor or other health professional talk with you about having a low-dose CT (LDCT) scan to check for lung cancer?

- ☐ I have never heard of this test
- ☐ Yes
- ☐ No
- ☐ Don't know

O4. ***For males***: GO TO O5 on the next page

For females: How long ago did you have your most recent Pap test to check for cervical cancer?

- ☐ A year ago or less
- ☐ More than 1, up to 2 years ago
- ☐ More than 2, up to 3 years ago
- ☐ More than 3, up to 5 years ago
- ☐ More than 5 years ago
- ☐ I have never had a Pap test

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O5. There are a few different tests to check for colorectal cancer in people who have no symptoms. These tests include:

A **colonoscopy** - For this test, a tube is inserted into your rectum and you are given medication that may make you feel sleepy. After the procedure, you need someone to drive you home.

A **sigmoidoscopy** - For this test, you are awake when the tube is inserted into your rectum. After the test you can drive yourself home.

A **stool blood test** - For this test, you collect a stool sample at home, and then provide it to a doctor or lab for testing.

Has a doctor or other health professional ever told you there are a few different tests to detect colorectal cancer?

- ☐ Yes
- ☐ No
- ☐ I have never discussed these tests with a doctor or other health professional

O6. Have you ever heard of **HPV**? HPV stands for Human Papillomavirus. It is not HCV, HIV, HSV, or herpes.

- ☐ Yes
- ☐ No → **GO TO O8 below**

O7. Do you think **HPV** can cause cervical cancer?

- ☐ Yes
- ☐ No
- ☐ Not sure

O8. A vaccine to prevent **HPV** infection is available and is called the HPV shot, cervical cancer vaccine, or GARDASIL®.

Before today, have you ever heard of the cervical cancer vaccine or HPV shot?

- ☐ Yes
- ☐ No

P: Beliefs About Cancer

Think about cancer in general when answering the questions in this section.

P1. How worried are you about getting cancer?

- ☐ Not at all
- ☐ Slightly
- ☐ Somewhat
- ☐ Moderately
- ☐ Extremely

P2. Compared to other people your age, how likely **do you think you are** to get cancer in your lifetime?

- ☐ I already had cancer
- ☐ Very unlikely
- ☐ Unlikely
- ☐ Neither likely nor unlikely
- ☐ Likely
- ☐ Very likely
- ☐ I don't know

P3. How much do you agree or disagree with each of the following statements?

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. It seems like everything causes cancer.....	☐	☐	☐	☐
b. There's not much you can do to lower your chances of getting cancer.....	☐	☐	☐	☐
c. There are so many different recommendations about preventing cancer, it's hard to know which ones to follow.....	☐	☐	☐	☐
d. When I think about cancer, I automatically think about death.....	☐	☐	☐	☐

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P4. How much do you think that each of the following could increase a person's chance of developing cancer?

	A lot	A little	Not at all	Don't know
a. Drinking soda or other sugar-sweetened drinks.....	☐	☐	☐	☐
b. Drinking alcohol.....	☐	☐	☐	☐

P5. How much do you think that each of the following could increase a person's chance of developing cancer?

	A lot	A little	Not at all	Don't know
a. Eating **too much** processed meat (for example: bacon, lunch meats, hot dogs).....	☐	☐	☐	☐
b. Eating **too much** red meat (for example: beef, pork, ham).....	☐	☐	☐	☐
c. Eating **too much** fast foods and processed foods high in fat, starches or sugars (for example: pre-prepared dishes, snacks, bakery foods, desserts).....	☐	☐	☐	☐
d. **Not eating enough** fruits and vegetables.....	☐	☐	☐	☐
e. **Not getting enough** sleep.....	☐	☐	☐	☐

P6. The following questions are about progress in the treatment of cancer. Please answer based on what you believe; there are no right or wrong answers.

	A lot	Some	A little	Almost none	Don't know
a. How much progress has been made in preventing cancer?.....	☐	☐	☐	☐	☐
b. How much progress has been made in curing cancer?.....	☐	☐	☐	☐	☐

Q: Cancer History

Q1. Have you ever been diagnosed as having cancer?

- ☐ Yes
- ☐ No → **GO TO Q4 on the next page.**

Q2. What type of cancer did you have?

Mark *all that apply*.

- ☐ Bladder cancer
- ☐ Bone cancer
- ☐ Breast cancer
- ☐ Brain cancer
- ☐ Cervical cancer (cancer of the cervix)
- ☐ Colon cancer
- ☐ Endometrial cancer (cancer of the uterus)
- ☐ Eye or eye socket cancer
- ☐ Head and neck cancer
- ☐ Leukemia/Blood cancer
- ☐ Liver cancer
- ☐ Lung cancer
- ☐ Lymphoma (Hodgkin's)
- ☐ Lymphoma (Non-Hodgkin's)
- ☐ Melanoma
- ☐ Multiple myeloma
- ☐ Oral cancer
- ☐ Ovarian cancer
- ☐ Pancreatic cancer
- ☐ Pharyngeal (throat) cancer
- ☐ Prostate cancer
- ☐ Rectal cancer
- ☐ Renal cancer (kidney cancer)
- ☐ Skin cancer, non-melanoma
- ☐ Stomach cancer
- ☐ Testicular cancer
- ☐ Thyroid cancer
- ☐ Other – Specify → ☐

Q3. At what age were you first told that you had cancer?

☐☐☐ Years old

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Q4. Have any of your first- or second-degree biological relatives (parents, brothers and sisters, children, grandparents, aunts and uncles, nieces and nephews) ever had cancer?

- ☐ Yes
- ☐ No
- ☐ Not sure

R: You and Your Household

R1. What is your age?

☐☐☐ Years old

R4. In the past 30 days, did you usually work 35 hours or more per week in total at all jobs or businesses?

- ☐ Yes
- ☐ No

R5. Which of the following best describe your current occupational status?

Mark *all that apply*.

- ☐ Employed
- ☐ Unemployed for 1 year or more
- ☐ Unemployed for less than 1 year
- ☐ Homemaker
- ☐ Student
- ☐ Retired
- ☐ Disabled
- ☐ Other-Specify → ☐

R6. What is your marital status?

Mark only *one*.

- ☐ Married
- ☐ Living as married or living with a romantic partner
- ☐ Divorced
- ☐ Widowed
- ☐ Separated
- ☐ Single, never been married

R7. What is the highest grade or level of schooling you completed?

- ☐ Less than 8 years
- ☐ 8 through 11 years
- ☐ 12 years or completed high school
- ☐ Post high school training other than college (vocational or technical)
- ☐ Some college
- ☐ College graduate
- ☐ Postgraduate

R8. Are you of Hispanic, Latino/a, or Spanish origin? One or more categories may be selected.

Mark *all that apply*.

- ☐ No, not of Hispanic, Latino/a, or Spanish origin
- ☐ Yes, Mexican, Mexican American, Chicano/a
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino/a, or Spanish origin

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R9. What is your race? One or more categories may be selected.

Mark *all that apply*.

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander

R10. How much do you agree or disagree with the following statement?

I have a strong sense of belonging to my own ethnic, racial, and/or cultural group.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

R11. Do you think of yourself as…

Mark only *one*.

- ☐ Heterosexual, or straight
- ☐ Homosexual, or gay or lesbian
- ☐ Bisexual
- ☐ Something else – Specify →

☐

R12. **Including yourself**, how many people live in your household?

☐☐ Number of people

R13. How many children under the age of 18 live in your household?

☐☐ Number of children under 18

R14. Thinking about members of your family living in this household, what is your combined annual income, meaning the total pre-tax income from all sources earned in the past year?

- ☐ $0 to $9,999
- ☐ $10,000 to $14,999
- ☐ $15,000 to $19,999
- ☐ $20,000 to $34,999
- ☐ $35,000 to $49,999
- ☐ $50,000 to $74,999
- ☐ $75,000 to $99,999
- ☐ $100,000 to $199,999
- ☐ $200,000 or more

R15. Which one of these comes closest to your own feelings about your household's income?

- ☐ Living comfortably on present income
- ☐ Getting by on present income
- ☐ Finding it difficult on present income
- ☐ Finding it very difficult on present income

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R16. We invite you to participate in future health surveys for the National Cancer Institute (NCI). These studies are voluntary and will involve answering surveys like this one a few times a year. You will receive a $20 Amazon e-gift card once you have registered.

If you are interested in participating, please write your email address in the box below. You will then receive an email with instructions for how to register for future surveys. Your email will be kept private and will only be used to send you information about future surveys.

E-mail: ____

Thank you!

We would like to send you $30 as a token of appreciation for your participation in HINTS. You have the choice to receive $30 as an electronic Amazon gift card code via email, or to receive a check in the mail at the address where you received this survey.

To receive a $30 Amazon gift card, please provide your email address:

E-mail: ____

To receive a $30 check, please provide your first and last name:

First name: ____

Last name: ____

Please write legibly and return this questionnaire in the postage-paid envelope within 2 weeks.

If you have lost the envelope, mail the completed questionnaire to:

HINTS Study
Westat
1600 Research Boulevard
Rockville, MD 20850

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Appendix B

English Contact Materials (Control Group)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

FIRST MAILING

Dear {City} Resident:

We are writing to invite you to take part in an important national survey sponsored by the U.S. Department of Health and Human Services - the Health Information National Trends Survey (HINTS). The goal of HINTS is to learn about how people find and use health and medical information. By completing this survey, you will help us learn what health information you need and how to make that information available to you, your family, and your community.

In order to make sure we get responses from a random sample of people, **we ask the adult in your household with the next birthday to complete the survey in the next two weeks.** To complete the survey online, please visit:

Survey Website: www.hints-survey.org
Your Access Code: {**1A0784B8**}

If you complete the survey online, you will receive an additional $10 Amazon e-gift card.

You may also fill out and return the paper survey that is included in this mailing. *You do not need to do both the online and paper versions of the survey*.

Your participation is voluntary and your responses will not be linked to your name. We have enclosed $2 as a token of our appreciation for your participation.

The study is sponsored by the U.S. Department of Health and Human Services. Westat, a research firm, is conducting the survey. If you have any questions about HINTS, please call Westat toll-free at 1-888-738-6805. Thank you in advance for your participation.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

Si prefiere recibir la encuesta en español, por favor llame al 1-888-738-6812.

The Health Information National Trends Survey is authorized under 42 USC, Section 285A.

Health Information National Trends Survey hints

POSTCARD TEXT

A few days ago you should have received a survey packet asking for your household's participation in the Health Information National Trends Survey (HINTS). By participating in HINTS, you can help the U.S. Department of Health and Human Services determine the best ways of communicating important health information to members of your community.

We are inviting the adult in the household with the next birthday to complete the survey. If that adult has already completed the survey, please accept my sincere thanks. If that adult has not yet completed the survey, we ask that he or she please do so as soon as possible.

To complete HINTS online, please visit:

Survey Website: www.hints-survey.org
Access code: {**1A0784B8**}

If you complete the survey online, you will receive an additional $10 Amazon e-gift card. If you prefer to answer a paper version of the survey, an extra copy will be mailed to your household in the next few weeks. *You do not need to do both the online and paper versions of the survey.*

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

SECOND AND THIRD MAILINGS

Dear {City} Resident:

We recently invited you to participate in an important national survey sponsored by the U.S. Department of Health and Human Services (HHS). The goal of the Health Information National Trends Survey (HINTS) is to learn about how people find and use health and medical information. Your responses will help us keep you, your family, and members of your community better informed on the health issues that matter to you.

We have not yet received your completed survey. To make sure HINTS provides accurate information, we need all the households invited to participate in this year's HINTS complete the survey. In order to make sure we get responses from a random sample of people, **we ask the adult in your household with the next birthday to complete the survey in the next two weeks.** To complete the survey online, please visit:

Survey Website: www.hints-survey.org
Your Access Code: {**1A0784B8**}

If you complete the survey online, you will receive an additional $10 Amazon e-gift card.

You may also fill out and return the paper survey that is included in this mailing. *You do not need to do both the online and paper versions of the survey*.

If you completed the survey before receiving this letter, thank you for the time you took to help make this study a success. If you have any questions, please call Westat toll free at 1-888-738-6805. Thank you in advance for contributing to this important national study.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

Si prefiere recibir la encuesta en español, por favor llame al 1-888-738-6812.

The Health Information National Trends Survey is authorized under 42 USC, Section 285A.

Health Information National Trends Survey hints

Some Frequently Asked Questions about the Health Information National Trends Survey

Q: I completed the survey online. Do I also need to complete the paper survey?

A: No, you only need to complete the survey **once**. If you completed the survey online then you do not need to return the paper survey.

Q: What is the study about? What kind of questions do you ask?

A: You can find out more about HINTS at hints.cancer.gov. The study concerns health and how people get health information. For example, we will ask how you usually get information about health and what sources of information you most trust. We will also ask about your beliefs on what contributes to good health, how best to prevent cancer, and other health related topics.

Q: How will the study results be used?

A: The results will help the U.S. Department of Health and Human Services promote good health and prevent disease by determining the best ways to communicate accurate health information.

Q: How did you get my address?

A: Your address was randomly selected from among all of the known home addresses in the nation. It was selected using scientific sampling methods.

Q: Why should I take part in this study? Do I have to do this?

A: Getting answers from all the households chosen for the study is the best way to make sure the study results reflect the thoughts and opinions of all Americans. Your participation is voluntary, and you may refuse to answer any questions or leave the study at any time. However, your answers are very important to the success of this study and will represent thousands of others.

Q: Will my answers to the survey be kept private?

A: Yes. Your answers will be kept private under the Privacy Act. Your answers cannot be linked to any information that could identify you or your household, to the extent provided by law. Your completed survey will be stored in a secure file with restricted access. All contact information for your household (such as mailing address) will be destroyed shortly after the research is finalized.

Q: How long will it take to answer the questions?

A: About 20 to 30 minutes.

Q: Who is sponsoring the study?

A: The study is sponsored by the U.S. Department of Health and Human Services.

Q: Who is Westat?

A: Westat is a research company located in Rockville, Maryland. Westat is conducting this survey under contract to the U.S. Department of Health and Human Services.

Appendix C

Spanish Contact Materials (Control Group)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

FIRST MAILING

Estimado(a) residente de {City}:

Le escribimos para invitarle a participar en una importante encuesta nacional patrocinada por el Departamento de Salud y Servicios Humanos de Estados Unidos — La Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés). El objetivo de HINTS es aprender sobre cómo las personas encuentran y utilizan la información sobre la salud y la información médica. Al llenar esta encuesta, usted nos ayudará a saber qué información sobre salud usted necesita y cómo ponerla a disposición suya, de su familia y de su comunidad.

Para asegurarnos de obtener las respuestas de un muestreo aleatorio de la población, **le pedimos al adulto en su hogar con el próximo cumpleaños que llene y devuelva la encuesta en las próximas dos semanas.** Para llenar esta encuesta en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Código de acceso: {**1A0784B8**}

Si usted llena la encuesta en línea, recibirá una tarjeta de regalo electrónica adicional de Amazon de $10 dólares.

También puede llenar y regresar la encuesta en papel que se incluye en esta correspondencia. **Usted solo tiene que llenar una de las versiones de la encuesta, la versión en línea o en papel, no ambas**.

Su participación es voluntaria y sus respuestas no se asociarán con su nombre. Hemos incluido $2 dólares como muestra de nuestro agradecimiento por su participación.

Este estudio está siendo patrocinado por el Departamento de Salud y Servicios Humanos de Estados Unidos. Westat, una firma de investigación, está realizando la encuesta. Si tiene preguntas sobre HINTS, por favor, llame gratis a Westat al 1-888-738-6812. Gracias de antemano por su participación.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

La Encuesta Nacional de Tendencias de Información sobre la Salud está autorizada bajo la Sección 285A del USC 42.

Health Information National Trends Survey hints

POSTCARD TEXT – SPANISH

Hace unos días, usted debió recibir un paquete con una encuesta en el que se solicita la participación de su hogar en la Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés). Al participar en HINTS, usted puede ayudar al Departamento de Salud y Servicios Humanos de Estados Unidos a determinar las mejores maneras de comunicar información de salud importante a los miembros de su comunidad.

Estamos invitando a la persona adulta en su hogar con la fecha de cumpleaños más próxima a responder esta encuesta. Si ese adulto ya lo ha hecho, por favor acepte mis agradecimientos más sinceros. Si ese adulto aún no ha respondido la encuesta, le pedimos que por favor lo haga lo más pronto posible.

Para llenar HINTS en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Código de acceso: {**1A0784B8**}

Si llena la encuesta en línea, recibirá además una tarjeta electrónica de regalo de Amazon de $10 dólares. Si prefiere llenar una versión de la encuesta en papel, una copia adicional le será enviada a su hogar en las siguientes semanas. *Usted solo tiene que llenar una de las versiones de la encuesta, la versión en línea o en papel, no ambas*.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

SECOND AND THIRD MAILINGS

Estimado(a) residente de {City}:

Recientemente le invitamos a participar en una importante encuesta nacional patrocinada por el Departamento de Salud y Servicios Humanos de Estados Unidos (HHS, por sus siglas en inglés). El objetivo de la Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés) es aprender sobre cómo las personas encuentran y utilizan la información sobre la salud y la información médica. Sus respuestas nos ayudarán a mantenerlo mejor informado a usted, a sus familiares y a los miembros de la comunidad sobre los temas de salud que son importantes para ustedes.

Aún no hemos recibido su encuesta terminada. Para poder estar seguros de que HINTS provea información acertada, necesitamos que todos los hogares invitados a participar en la encuesta este año la respondan. Para asegurarnos de obtener las respuestas de un muestreo aleatorio de la población, **le pedimos al adulto en su hogar con el próximo cumpleaños que llene y devuelva la encuesta en las próximas dos semanas.** Para llenar esta encuesta en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Su Código de Acceso: {**1A0784B8**}

Si usted llena la encuesta en línea, recibirá además una tarjeta de regalo electrónica de Amazon de $10 dólares.

También puede llenar y regresar la encuesta en papel que se incluye en esta correspondencia. *Usted solo tiene que llenar una de las versiones de la encuesta, la versión en línea o en papel, no ambas.*

Si usted ya llenó su encuesta antes de recibir esta carta, le agradecemos por el tiempo que se tomó para contribuir al éxito de este estudio. Si tiene preguntas, por favor, llame gratis a Westat al 1-888-738-6812. Gracias de antemano por contribuir en este importante estudio nacional.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

La Encuesta Nacional de Tendencias de Información sobre la Salud está autorizada bajo la Sección 285A del USC 42.

Health Information National Trends Survey hints

Algunas Preguntas Frecuentes sobre la Encuesta Nacional de Tendencias de Información sobre la Salud

P: Llené la encuesta en línea. ¿Necesito también llenarla en papel?

R: No, solamente necesita llenarla una vez. Si ya completó la encuesta en línea, entonces, no necesita regresar la encuesta en papel.

P: ¿De qué se trata el estudio? ¿Qué tipo de preguntas contiene?

R: Puede encontrar más información sobre HINTS en **hints.cancer.gov**. El estudio trata sobre la salud y la manera en que las personas reciben información sobre la salud. Por ejemplo, le preguntaremos cómo obtiene normalmente información sobre salud y en qué fuentes de información más confía. También le preguntaremos sobre lo que usted cree que contribuye a la buena salud, la mejor manera de prevenir el cáncer y otros temas relacionados con la salud.

P: ¿Cómo se utilizarán los resultados del estudio?

R. Los resultados ayudarán al Departamento de Salud y Servicios Humanos de EE. UU. a fomentar la buena salud y a prevenir las enfermedades al determinar las mejores maneras de comunicar información correcta de salud.

P: ¿Cómo obtuvieron mi dirección?

R: Su dirección fue seleccionada al azar entre todas las direcciones conocidas en el país usando métodos científicos de muestreo.

P: ¿Por qué debo participar en este estudio? ¿Es obligatorio hacerlo?

R: El obtener respuestas de todos los hogares escogidos para este estudio es la mejor manera de asegurar que se reflejen los pensamientos y opiniones de todos los estadounidenses. Su participación es voluntaria y usted puede negarse a contestar cualquiera de las preguntas o retirarse del estudio en cualquier momento. Sin embargo, sus respuestas son muy importantes para el éxito de este estudio y representarán a miles de personas.

P: ¿Se mantendrá la privacidad de mis respuestas a la encuesta?

R. Sí. Sus respuestas se mantendrán privadas en virtud de la Ley de Privacidad. Sus respuestas no pueden asociarse a su nombre ni a ninguna otra información que podría identificarlo a usted o a su hogar en la medida que lo permita la ley. La encuesta completa se almacenará en un archivo separado con acceso restringido. Toda la información de contacto para su hogar (tal como la dirección postal) se destruirá poco después de que finalice la investigación.

P: ¿Cuánto tiempo tomará responder las preguntas?

R: Más o menos de 20 a 30 minutos.

P: ¿Quién patrocina el estudio?

R: El estudio es patrocinado por el Departamento de Salud y Servicios Humanos de Estados Unidos.

P: ¿Quién es Westat?

R. Westat es una compañía de investigación ubicada en Rockville, Maryland. Westat realiza esta encuesta bajo contrato con el Departamento de Salud y Servicios Humanos de Estados Unidos.

Appendix D

English Contact Materials (Treatment Group)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

FIRST MAILING

Dear {City} Resident:

We are writing to invite you to take part in an important national survey sponsored by the U.S. Department of Health and Human Services - the Health Information National Trends Survey (HINTS). The goal of HINTS is to learn about how people find and use health and medical information. By completing this survey, you will help us learn what health information you need and how to make that information available to you, your family, and your community.

In order to make sure we get responses from a random sample of people, **we ask the adult in your household with the next birthday to complete the survey in the next two weeks.** To complete the survey, please visit:

Survey Website: www.hints-survey.org
Your Access Code: {**1A0784B8**}

Your participation is voluntary and your responses will not be linked to your name. We have enclosed $2 as a token of our appreciation for your participation.

The study is sponsored by the U.S. Department of Health and Human Services. Westat, a research firm, is conducting the survey. If you have any questions about HINTS, please call Westat toll-free at 1-888-738-6805. Thank you in advance for your participation.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

Si prefiere recibir la encuesta en español, por favor llame al 1-888-738-6812.

The Health Information National Trends Survey is authorized under 42 USC, Section 285A.

Health Information National Trends Survey hints

POSTCARD TEXT

A few days ago you should have received a letter asking for your household's participation in the Health Information National Trends Survey (HINTS). By participating in HINTS, you can help the U.S. Department of Health and Human Services determine the best ways of communicating important health information to members of your community.

We are inviting the adult in the household with the next birthday to complete the survey. If that adult has already completed the survey, please accept my sincere thanks. If that adult has not yet completed the survey, we ask that he or she please do so as soon as possible.

To complete the HINTS survey, please visit:

Survey Website: www.hints-survey.org
Access code: {**1A0784B8**}

Thank you in advance for your participation.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

SECOND AND THIRD MAILINGS

Dear {City} Resident:

We recently invited you to participate in an important national survey sponsored by the U.S. Department of Health and Human Services (HHS). The goal of the Health Information National Trends Survey (HINTS) is to learn about how people find and use health and medical information. Your responses will help us keep you, your family, and members of your community better informed on the health issues that matter to you.

We have not yet received your completed survey. To make sure HINTS provides accurate information, we need all the households invited to participate in this year's HINTS complete the survey. In order to make sure we get responses from a random sample of people, **we ask the adult in your household with the next birthday to complete the survey in the next two weeks.** To complete the survey, please visit:

Survey Website: www.hints-survey.org
Your Access Code: {**1A0784B8**}

You may also fill out and return the paper survey that is included in this mailing. *You do not need to do both the online and paper versions of the survey.*

If you completed the survey before receiving this letter, thank you for the time you took to help make this study a success. If you have any questions, please call Westat toll free at 1-888-738-6805. Thank you in advance for contributing to this important national study.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

Si prefiere recibir la encuesta en español, por favor llame al 1-888-738-6812.

The Health Information National Trends Survey is authorized under 42 USC, Section 285A.

Health Information National Trends Survey hints

Some Frequently Asked Questions about the Health Information National Trends Survey

Q: What is the study about? What kind of questions do you ask?

A: You can find out more about HINTS at hints.cancer.gov. The study concerns health and how people get health information. For example, we will ask how you usually get information about health and what sources of information you most trust. We will also ask about your beliefs on what contributes to good health, how best to prevent cancer, and other health related topics.

Q: How will the study results be used?

A: The results will help the U.S. Department of Health and Human Services promote good health and prevent disease by determining the best ways to communicate accurate health information.

Q: How did you get my address?

A: Your address was randomly selected from among all of the known home addresses in the nation. It was selected using scientific sampling methods.

Q: Why should I take part in this study? Do I have to do this?

A: Getting answers from all the households chosen for the study is the best way to make sure the study results reflect the thoughts and opinions of all Americans. Your participation is voluntary, and you may refuse to answer any questions or leave the study at any time. However, your answers are very important to the success of this study and will represent thousands of others.

Q: Will my answers to the survey be kept private?

A: Yes. Your answers will be kept private under the Privacy Act. Your answers cannot be linked to any information that could identify you or your household, to the extent provided by law. Your completed survey will be stored in a secure file with restricted access. All contact information for your household (such as mailing address) will be destroyed shortly after the research is finalized.

Q: How long will it take to answer the questions?

A: About 20 to 30 minutes.

Q: Who is sponsoring the study?

A: The study is sponsored by the U.S. Department of Health and Human Services.

Q: Who is Westat?

A: Westat is a research company located in Rockville, Maryland. Westat is conducting this survey under contract to the U.S. Department of Health and Human Services.

Appendix E

Spanish Contact Materials (Treatment Group)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

FIRST MAILING

Estimado (a) residente de {City}:

Le escribimos para invitarle a participar en una importante encuesta nacional patrocinada por el Departamento de Salud y Servicios Humanos de Estados Unidos — La Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés). El objetivo de HINTS es aprender sobre cómo las personas encuentran y utilizan la información sobre la salud y la información médica. Al llenar esta encuesta, usted nos ayudará a saber qué información sobre salud usted necesita y cómo ponerla a disposición suya, de su familia y de su comunidad.

Para asegurarnos de obtener las respuestas de un muestreo aleatorio de la población, **le pedimos al adulto en su hogar con el próximo cumpleaños que llene la encuesta en las próximas dos semanas.** Para llenar esta encuesta en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Código de acceso: {**1A0784B8**}

Su participación es voluntaria y sus respuestas no se asociarán con su nombre. Hemos incluido $2 dólares como muestra de nuestro agradecimiento por su participación.

Este estudio está siendo patrocinado por el Departamento de Salud y Servicios Humanos de Estados Unidos. Westat, una firma de investigación, está realizando la encuesta. Si tiene preguntas sobre HINTS, por favor, llame gratis a Westat al 1-888-738-6812. Gracias de antemano por su participación.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

La Encuesta Nacional de Tendencias de Información de Salud está autorizada por USC 42, Sección 285A.

Health Information National Trends Survey hints

POSTCARD TEXT – SPANISH

Hace unos días, usted debe haber recibido una carta en la que se solicita la participación de su hogar en la Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés). Al participar en HINTS, usted puede ayudar al Departamento de Salud y Servicios Humanos de Estados Unidos a determinar las mejores maneras de comunicar información de salud importante a los miembros de su comunidad.

Estamos invitando a la persona adulta en su hogar con la fecha de cumpleaños más próxima a responder esta encuesta. Si ese adulto ya lo ha hecho, por favor acepte mis agradecimientos más sinceros. Si ese adulto aún no ha respondido la encuesta, le pedimos que por favor la responda lo más pronto posible.

Para llenar la encuesta HINTS en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Código de acceso: {**1A0784B8**}

Gracias de antemano por su participación.

Atentamente,

Health Information National Trends Survey hints

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

SECOND AND THIRD MAILINGS

Estimado(a) residente de {City}:

Recientemente le invitamos a participar en una importante encuesta nacional patrocinada por el Departamento de Salud y Servicios Humanos de Estados Unidos (HHS, por sus siglas en inglés). El objetivo de la Encuesta Nacional de Tendencias de Información sobre la Salud (HINTS, por sus siglas en inglés) es aprender sobre cómo las personas encuentran y utilizan la información sobre la salud y la información médica. Sus respuestas nos ayudarán a mantenerles mejor informado a usted, a sus familiares y a los miembros de la comunidad sobre los temas de salud que son importantes para ustedes.

Aún no hemos recibido su encuesta terminada. Para poder estar seguros de que HINTS provea información acertada, necesitamos que todos los hogares invitados a participar en la encuesta este año la respondan. Para asegurarnos de obtener las respuestas de un muestreo aleatorio de la población, **le pedimos al adulto en su hogar con el próximo cumpleaños que llene y devuelva la encuesta en las próximas dos semanas.** Para llenar esta encuesta en línea, por favor visite:

Página web de la encuesta: www.hints-survey.org
Su Código de Acceso: {**1A0784B8**}

También puede llenar y regresar la encuesta en papel que se incluye en esta correspondencia. *Usted solo tiene que llenar una de las versiones de la encuesta, la versión en línea o en papel, no ambas.*

Si usted ya llenó su encuesta antes de recibir esta carta, le agradecemos por el tiempo que se tomó para contribuir al éxito de este estudio. Si tiene preguntas, por favor, llame gratis a Westat al 1-888-738-6812. Gracias de antemano por contribuir en este importante estudio nacional.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

La Encuesta Nacional de Tendencias de Información sobre la Salud está autorizada bajo la Sección 285A del USC 42.

Health Information National Trends Survey hints

Preguntas Frecuentes sobre la Encuesta Nacional de Tendencias de Información sobre la Salud

P: ¿De qué se trata el estudio? ¿Qué tipo de preguntas contiene?

R: Puede encontrar más información sobre HINTS en **hints.cancer.gov**. El estudio trata sobre la salud y la manera en que las personas reciben información sobre la salud. Por ejemplo, le preguntaremos cómo obtiene normalmente información sobre salud y en qué fuentes de información más confía. También le preguntaremos sobre lo que usted cree que contribuye a la buena salud, cómo prevenir mejor el cáncer y otros temas relacionados con la salud.

P: ¿Cómo se utilizarán los resultados del estudio?

R. Los resultados ayudarán al Departamento de Salud y Servicios Humanos de EE. UU. a fomentar la buena salud y prevenir las enfermedades mediante la determinación de las mejores formas de comunicar información exacta sobre la salud.

P: ¿Cómo obtuvieron mi dirección?

R: Su dirección fue seleccionada al azar entre todas las direcciones conocidas en el país usando métodos científicos de muestreo.

P: ¿Por qué debo participar en este estudio? ¿Es obligatorio hacerlo?

R: El obtener respuesta de todos los hogares escogidos para este estudio es la mejor manera de asegurar que este refleje los pensamientos y opiniones de todos los estadounidenses. Su participación es voluntaria y usted puede negarse a contestar cualquiera de las preguntas o retirarse del estudio en cualquier momento. Sin embargo, sus respuestas son muy importantes para el éxito de este estudio y representan a miles de personas.

P: ¿Se mantendrá la privacidad de mis respuestas a la encuesta?

R. Sí. Se mantendrá la privacidad de sus respuestas en virtud de la Ley de Privacidad. Sus respuestas no pueden asociarse a su nombre ni a ninguna otra información que podría identificarlo a usted o a su hogar en la medida que lo permita la r ley. La encuesta completa se almacenará en un archivo separado con acceso restringido. Toda la información de contacto para su hogar (tal como la dirección postal) se destruirá poco después de que finalice la investigación.

P: ¿Cuánto tiempo tomará responder las preguntas?

R: Más o menos de 20 a 30 minutos.

P: ¿Quién patrocina el estudio?

R: El estudio es patrocinado por el Departamento de Salud y Servicios Humanos de EE. UU.

P: ¿Quién es Westat?

R. Westat es una compañía de investigación ubicada en Rockville, Maryland. Westat realiza esta encuesta bajo contrato con el Departamento de Salud y Servicios Humanos de EE. UU.

Appendix F

Additional Insert (Web Bonus)

Appendix F
Additional Insert (Web Bonus)

Source: Printed insert for mailing (hard-copy only).

Source: Printed insert for mailing (hard-copy only).

Appendix G

Contact Materials and Insert for Additional Mailing

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

FOURTH MAILING

Dear {City} Resident:

We recently invited you to participate in HINTS – the Health Information National Trends Survey, sponsored by the U.S. Department of Health and Human Services (HHS). Your response will help us keep you, your family, and members of your community informed on the health issues that matter to you.

We have not yet received your completed survey. To make sure HINTS is accurate, we need all the invited households to participate. **We are now offering *$30* for completing the survey by web or by paper.**

In order to make sure we get responses from a random sample of people, **we ask the adult in your household with the next birthday to complete the survey in the next two weeks.** To complete the survey online, please visit:

Survey Website: www.hints-survey.org
Your Access Code: {**1A0784B8**}

If your household completed the survey before receiving this letter, thank you for the time you took to help make this study a success. If you have any questions, please call Westat toll free at 1-888-738-6805. Thank you in advance for contributing to HINTS.

Sincerely,

Kelly D. Blake, ScD
Director, HINTS
National Cancer Institute, National Institutes of Health
U.S. Dept. of Health and Human Services

Si prefiere recibir la encuesta en español, por favor llame al 1-888-738-6812.

The Health Information National Trends Survey is authorized under 42 USC, Section 285A.

Health Information National Trends Survey hints

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health
Bethesda, Maryland 20892

FOURTH MAILING

Estimado(a) residente de {Ciudad}:

Recientemente le invitamos a participar en HINTS – la Encuesta Nacional de Tendencias de Información sobre la Salud, patrocinada por el Departamento de Salud y Servicios Humanos de Estados Unidos (HHS, por sus siglas en inglés). Su respuesta nos ayudará a mantenerles a usted, a su familia, y a miembros de su comunidad informados sobre los temas de salud importantes para ustedes.

Aún no hemos recibido su encuesta completada. Para que los resultados de HINTS sean precisos, necesitamos que todos los hogares invitados participen. **Ahora estamos ofreciendo *$30* por completar la encuesta por la web o en papel.**

Para asegurarnos de que estamos obteniendo respuestas de una muestra aleatoria de personas, **le pedimos al adulto en su hogar con el próximo cumpleaños que complete la encuesta en las próximas dos semanas.** Para completar la encuesta en línea, por favor visite:

Sitio web de la encuesta: www.hints-survey.org
Su código de acceso: {**1A0784B8**}

Si su hogar completó la encuesta antes de recibir esta carta, le agradecemos por el tiempo que se tomó para ayudar a que este estudio sea un éxito. Si tiene alguna pregunta, por favor llame al número gratuito de Westat al 1-888-738-6812. Gracias de antemano por contribuir con HINTS.

Atentamente,

Kelly D. Blake, ScD
Directora, HINTS
Instituto Nacional del Cáncer, Institutos Nacionales de la Salud
Departamento de Salud y Servicios Humanos de EE. UU.

La Encuesta Nacional de Tendencias de Información sobre la Salud está autorizada bajo la Sección 285A del USC 42.

Health Information National Trends Survey hints

Some Frequently Asked Questions about the Health Information National Trends Survey

Q: I completed the survey online. Do I also need to complete the paper survey?

A: No, you only need to complete the survey **once**. If you completed the survey online then you do not need to return the paper survey.

Q: What is the study about? What kind of questions do you ask?

A: You can find out more about HINTS at hints.cancer.gov. The study concerns health and how people get health information. For example, we will ask how you usually get information about health and what sources of information you most trust. We will also ask about your beliefs on what contributes to good health, how best to prevent cancer, and other health related topics.

Q: How will the study results be used?

A: The results will help the U.S. Department of Health and Human Services promote good health and prevent disease by determining the best ways to communicate accurate health information.

Q: How did you get my address?

A: Your address was randomly selected from among all of the known home addresses in the nation. It was selected using scientific sampling methods.

Q: Why should I take part in this study? Do I have to do this?

A: Getting answers from all the households chosen for the study is the best way to make sure the study results reflect the thoughts and opinions of all Americans. Your participation is voluntary, and you may refuse to answer any questions or leave the study at any time. However, your answers are very important to the success of this study and will represent thousands of others.

Q: Will my answers to the survey be kept private?

A: Yes. Your answers will be kept private under the Privacy Act. Your answers cannot be linked to any information that could identify you or your household, to the extent provided by law. Your completed survey will be stored in a secure file with restricted access. All contact information for your household (such as mailing address) will be destroyed shortly after the research is finalized.

Q: How long will it take to answer the questions?

A: About 20 to 30 minutes.

Q: Who is sponsoring the study?

A: The study is sponsored by the U.S. Department of Health and Human Services.

Q: Who is Westat?

A: Westat is a research company located in Rockville, Maryland. Westat is conducting this survey under contract to the U.S. Department of Health and Human Services.

Algunas Preguntas Frecuentes sobre la Encuesta Nacional de Tendencias de Información sobre la Salud

P: Llené la encuesta en línea. ¿Necesito también llenarla en papel?

R: No, solamente necesita llenarla una vez. Si ya completó la encuesta en línea, entonces, no necesita regresar la encuesta en papel.

P: ¿De qué se trata el estudio? ¿Qué tipo de preguntas contiene?

R: Puede encontrar más información sobre HINTS en **hints.cancer.gov**. El estudio trata sobre la salud y la manera en que las personas reciben información sobre la salud. Por ejemplo, le preguntaremos cómo obtiene normalmente información sobre salud y en qué fuentes de información más confía. También le preguntaremos sobre lo que usted cree que contribuye a la buena salud, la mejor manera de prevenir el cáncer y otros temas relacionados con la salud.

P: ¿Cómo se utilizarán los resultados del estudio?

R: Los resultados ayudarán al Departamento de Salud y Servicios Humanos de EE. UU. a fomentar la buena salud y a prevenir las enfermedades al determinar las mejores maneras de comunicar información correcta de salud.

P: ¿Cómo obtuvieron mi dirección?

R: Su dirección fue seleccionada al azar entre todas las direcciones conocidas en el país usando métodos científicos de muestreo.

P: ¿Por qué debo participar en este estudio? ¿Es obligatorio hacerlo?

R: El obtener respuestas de todos los hogares escogidos para este estudio es la mejor manera de asegurar que se reflejen los pensamientos y opiniones de todos los estadounidenses. Su participación es voluntaria y usted puede negarse a contestar cualquiera de las preguntas o retirarse del estudio en cualquier momento. Sin embargo, sus respuestas son muy importantes para el éxito de este estudio y representarán a miles de personas.

P: ¿Se mantendrá la privacidad de mis respuestas a la encuesta?

R: Sí. Sus respuestas se mantendrán privadas en virtud de la Ley de Privacidad. Sus respuestas no pueden asociarse a su nombre ni a ninguna otra información que podría identificarlo a usted o a su hogar en la medida que lo permita la ley. La encuesta completa se almacenará en un archivo separado con acceso restringido. Toda la información de contacto para su hogar (tal como la dirección postal) se destruirá poco después de que finalice la investigación.

P: ¿Cuánto tiempo tomará responder las preguntas?

R: Más o menos de 20 a 30 minutos.

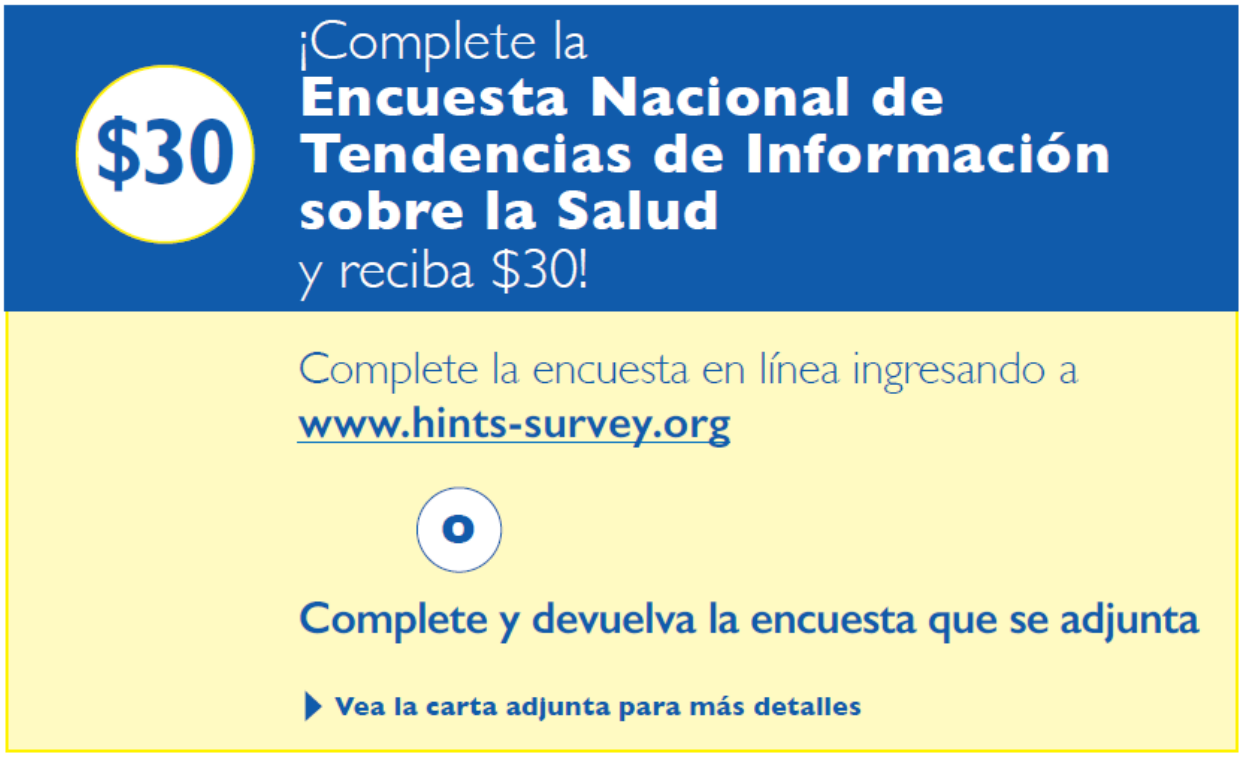
P: ¿Quién patrocina el estudio?

R: El estudio es patrocinado por el Departamento de Salud y Servicios Humanos de Estados Unidos.

P: ¿Quién es Westat?

R: Westat es una compañía de investigación ubicada en Rockville, Maryland. Westat realiza esta encuesta bajo contrato con el Departamento de Salud y Servicios Humanos de Estados Unidos.

Source: Printed insert for mailing (hard-copy only).



Source: Printed insert for mailing (hard-copy only).

Appendix H

Variable Values and Data Editing Procedures

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Variable Values and Data Editing Procedures

Missing Value Definitions

Values identifying types of nonresponse or indeterminate responses:

- -1 = Valid skips or appropriately missing data following a dependent question (correctly skipped). Example: If SeekCancerInfo=2 'no' and CancerLotOfEffort was missing, CancerLotOfEffort was assigned the value -1.

- -2 = Question was answered, but respondent should not have answered the question. The question was answered in error by the respondent. Example: If SeekCancerInfo=2 'no' and CancerLotOfEffort was not missing, CancerLotOfEffort was assigned the value -2.

- -4 = Question was answered, but data was removed because the entry of the number or character could not be determined (e.g. unreadable or non-conforming numeric response).

- -5 = Respondent selected more response options than appropriate for the question. Example: If CancerTrustDoctor had values 3 'a little' and 2 'some', CancerTrustDoctor was assigned the value -5. In cases where both -2 and -5 values could be assigned, the -2 value was assigned.

- -6 = Missing data in variables following a missing filter question. Example: If filter question (e.g., SeekCancerInfo) was missing (assigned the value -9) and variables up to the next applicable question (e.g. CancerTrustDoctor) were missing (e.g., CancerLotOfEffort = missing and CancerFrustrated = missing and CancerConcernedQuality = missing and CancerTooHardUnderstand = missing), then the variables with missing values were assigned the value -6.

- -7 = Missing data (exclusive to web mode respondent variables), question never presented due to break off in interview. Example: If web mode respondent reached any point in questionnaire and exited interview without finishing, exit point would be assigned the traditional Missing data value (-9), and all variables thereafter would be assigned the value -7.

- -9 = Missing data. Not ascertained. Question should have been answered, but no response was recorded. Example: If HealthRecsConflict was missing, it was assigned the value -9.

Data Editing Procedures

Variable	Editing Rule	Description of Rule
AdultsInHH	Recoding initial filter/skip question	The value of the following response, MailHHAdults, determined how missing responses to AdultsInHH were re-assigned. As an example, if AdultsInHH was missing and MailHHAdults initially had value 1 (adult in household) then AdultsInHH was assigned the value 2 'no' (indicating not more than 1 adult in the household) and MailHHAdults was assigned the 'missing value' -2 (answered inappropriately). If AdultsInHH was missing and MailHHAdults had value 2 (or greater) then AdultsInHH was assigned the value 1 'yes' (indicating more than 1 adult in the household) and the value for MailHHAdults was retained.
SeekCancerInfo UseInternet WearableDevTrackHealth MultipleOnlinePortals GenTestExpectations UsedECigEver HeardHPV EverHadCancer	Recoding filter/skip questions	For these filter questions (questions containing a skip instruction associated with the particular response that was selected), response patterns following the question were examined if the filter question was not answered. The 'yes' value (in the majority of cases where a 'yes' response instructed a respondent to continue answering the subsequent questions) was substituted for the missing filter question when any of the subsequent questions were answered. Similarly (when a 'no' response instructed a respondent to skip subsequent questions), the 'no' value was substituted for the missing filter question when all of the subsequent questions that a 'no' response would have directed the respondent to skip were left unanswered and the respondent answered the next applicable question all respondents were supposed to answer. Please note that if neither condition was met, the missing response code values were retained.
ResponsibleReduceMisinf_IMP RecentTelehealthReason_IMP SexualOrientation_I	Imputation for multiple responses	Imputation was carried out when multiple responses were selected, resulting in one unique response for these "mark only one" variables. Respondent's multiple answers were replaced with a single imputed answer that had the same distribution over the multiple answers as occurred in the single-answer responses. Imputation was not performed on missing values for this question. The suffixes "_IMP" and "_I" indicate that these variables include imputed values. Flags (indicated by suffix '_IFlag') indicate which values were imputed.

Variable	Editing Rule	Description of Rule
Internet_DialUp Internet_HighSpeed Internet_Cell Electronic2_HealthInfo Electronic2_MessageDoc Electronic2_TestResults Electronic2_MadeAppts WillingShareData_HCP WillingShareData_Fam THNo_PreferInPerson THNo_ConcernedPrivacy THNo_TooDifficult THYes_HCPRecommended THYes_WantedAdvice THYes_AvoidExposure THYes_Convenient THYes_IncludeOthers RecordsOnline2_ViewResults RecordsOnline2_DownloadHealth RecordsOnline2_Send3rdParty RecordsOnline2_ViewNotes MedConditions_Diabetes MedConditions_HighBP MedConditions_HeartCondition MedConditions_LungDisease MedConditions_Depression	Recoding missing responses for items with forced-choice response formats	Respondents were asked to select 'yes' or 'no' to a series of sub-items, allowing them to select as many responses as would apply. These 'forced-choice' response formats sometimes result in respondents indicating which sub-items apply to them by selecting the 'yes' response option for some and leaving the others unanswered. To allow the data to reflect this practice, if respondents did check one or more 'yes' response options within the group, but did not check a 'no' response option for any sub-item in the question, the sub-items that were missing a response were set to 'no.' However, if a respondent, in addition to leaving other sub-items unanswered, did select a 'no' response option for at least one sub-item, the unanswered sub-items were not assumed to be 'no' responses and instead remained missing.
HealthInsurance2_I EverHadCancer_I Age_I MaritalStatus_I Education_I Hisp_Cat_I Race_Cat2_I	Imputation for missing responses	Missing values were imputed for variables that were used in the process of assigning weights. The suffix "_I" indicates that this variable includes imputed values. Flags (indicated by suffix '_IFlag') indicate which values were imputed.
ReceiveTelehealthcare OfferedTelehealthOption HCPAlcoholConsequences2	Recoding filter/skip questions	For these filter questions (questions containing a skip instruction associated with the particular response that was selected), response patterns following the question were examined if the filter question was not answered. The value representing the response which moves forward was substituted for the missing filter question if any of the subsequent questions that the response directed the respondent to skip were answered. However, missing values were not substituted with other values if the filter question was not answered and the follow up questions were also not answered. (-9 follows the skip pattern.)

Variable	Editing Rule	Description of Rule
MisleadingHealthInfo FreqGoProvider AccessOnlineRecord2 TimesModerateExercise	Recoding filter/skip questions	For these filter questions (questions containing a skip instruction associated with the particular response that was selected), response patterns following the question were examined if the filter question was not answered. The value representing the skip response was substituted for the missing filter question if all of the subsequent questions that the response directed the respondent to skip were left unanswered, and the respondent answered the next applicable question. However, missing values were not substituted with other values if the filter question was not answered but a follow-up question was answered. (-9 answers the follow up questions and/or -6 value is used in missing follow up questions.)
Height_Feet Height_Inches	Edits for implausible values	The rules that were applied minimized the number of out-of-range values by accounting for response measurements in incorrect boxes, responses using metric, responses using only one unit of measurement and other response errors. **Rules Applied to Edit Height Variables:** If HEIGHT_Feet was 0 or missing and HEIGHT_Inches>48 and HEIGHT_Inches<=60, then the first digit was taken as the feet value and the second digit was taken as the inches value (to correct for respondents expressing both feet and inches in the inches box). If HEIGHT_Feet was 0 or missing and HEIGHT_Inches>61 and HEIGHT_Inches<=83, then the inches value was converted to its feet-and-inches equivalent (to correct for respondents expressing height in inches, resulting in heights from 5'1" to 6'11"). If HEIGHT_Feet was 1 and HEIGHT_Inches>=3 and HEIGHT_Inches<=9 (or HEIGHT_Inches>=30 and HEIGHT_Inches<=90) then this metric value was converted to feet-and-inches (to correct for respondents using meters and tenths and hundredths of a meter to express height). If HEIGHT_Feet>3 and HEIGHT_Feet<7 and HEIGHT_Inches = 20, 30, etc. thru 90 then the trailing 0 was removed. If HEIGHT_Feet>3 and HEIGHT_Feet<7 and HEIGHT_Inches = 15, 25, etc. thru 95 then the trailing 5 was removed (to correct for respondents expressing values in tenths of an inch).

Variable	Editing Rule	Description of Rule
		If HEIGHT_Feet>3 and HEIGHT_Feet<7 and HEIGHT_Inches = 12, 23, 34, 45 etc. thru 89 then the first digit was taken (to correct for respondents giving an inch value as a range, e.g., 1-2 or 8-9 inches). If HEIGHT_Feet>3 and HEIGHT_Feet<7 and HEIGHT_Inches = a two digit value whereby the first digit equaled the feet value the second digit was taken as the inches value (to correct for respondents expressing the height in inches as well as in feet, e.g., 5'58" resulted in value 5'8") If HEIGHT_Feet>6 and HEIGHT_Feet<12 and HEIGHT_Inches>3 and HEIGHT_Inches<7, then the values were switched (to correct for respondents putting measurements in the wrong boxes, resulting in edited values from 4'7" to <7 feet). If none of the preceding height editing rules were applicable: **Height_Feet (Height in Feet):** Any responses greater than 7 feet were recoded to "-4", which is the code for non-conforming responses. **Height_Inches (Height in Inches):** Any responses greater than 11 inches were recoded to "-4", which is the code for non-conforming responses.
HaveDevice_Cat OnlinePortal_Cat CaregivingWho_Cat CaregivingCond_Cat HeardGenTest_Cat TestSource_Cat HadTest3_Cat RiskTest_Cat ReasonTest_Cat SharedRes4_Cat LabShare_Cat UndGenTest3_Cat BehavChg_Cat SunburnedAct_Cat HCPAlcohol_Cat AntiTobacco_Cat TobaccoAds_Cat Cancer_Cat Occupation_Cat Hisp_Cat Race_Cat2	Summarized distribution of 'mark all that apply' responses	A variable was created to indicate each response selection a respondent made for these 'mark all that apply' variables. The derived variable with the suffix '_cat' summarized the response selected or indicated that multiple responses were selected.

Variable	Editing Rule	Description of Rule
Education IncomeRanges	Edits for multiple responses	The highest order (e.g., education level or income range) was taken when multiple responses were selected.
R_HHAdults	Derived variable	Responses to questions asking about household size as well as other information about the household (e.g., number of questionnaires returned) were compiled into a derived measure that best represented the number of adults in the household.
HHAdults_Num	Imputation for zero and missing responses	Missing values were imputed for the derived count of household adults when the derived variable had values of zero or missing. A flag (indicated by suffix '_IFlag') indicates which values were imputed.
QDisp	Derived variable	A variable was created to indicate the proportion of items respondents answered in the first two sections. This was used to determine incompletely-filled out questionnaires.
FullTimeOcc_Cat	Derived variable	A variable was created which combines the responses to P4 and P5, which aims to give a more comprehensive idea of a respondent's full time occupation.
Weight AverageSleepNight TimesSunburned DrinkDaysPerWeek DrinksPerDay HowLongModerateExerciseMinutes AverageTimeSitting WhenDiagnosedCancer SexualOrientation_OS Age	Recoding out of range responses	**Weight:** Any responses less than 40 pounds or greater than 500 pounds were recoded to "-4", which is the code for non-conforming responses. **AverageSleepNight** Any responses greater than 24 hours were recoded to "-4", which is the code for non-conforming responses. **TimesSunburned** Any responses greater than 30 sunburns were reviewed for scanning accuracy, but were left as is. **DrinkDaysPerWeek** Any responses greater than 7 days per week were recoded to "-4", which is the code for non-conforming responses. **DrinksPerDay** Any responses greater than 30 drinks were reviewed for scanning accuracy, but were left as is. **DrinksPerDay** Any responses greater than 240 minutes were reviewed for scanning accuracy, but were left as is.

Variable	Editing Rule	Description of Rule
		AverageTimeSitting Any responses greater than 24 hours were recoded to "-4", which is the code for non-conforming responses. **WhenDiagnosedCancer (Age at Time of Cancer Diagnosis):** Any responses greater than the age of the respondent were recoded to "-4", which is the code for non-conforming responses. **SexualOrientation_OS** Review of verbatim responses - Responses of "none of your business" and other similar phraseology were reviewed for scanning accuracy and recoded to "-4", which is the code for nonconforming responses. **Age** Responses were examined for out of range or unlikely ages (those listing their age as < 18 and > 105).
HaveDevice_CellPh HaveDevice_None Caregiving_No HeardGenTest_None TestSource_NotHeard HadTest3_NotSure HadTest3_NotHad	Recoding filter/skip questions	For these "mark all that apply" filter questions ("mark all that apply" type questions where one or more response option contains a skip instruction at the "No" or "None" response), when the "No" or "None" response was selected, all responses within the question group were examined. If other responses were checked, the "No" or "None" response was recoded to "Not selected", and the other responses were retained.
RiskTest_NotHad SharedRes4_NotShared UndGenTest3_NoOne BehavChg_NoChg AntiTobacco_DidNotNotice TobaccoAds_DidNotNotice NotHisp	Recoding illogical response combinations	For these "mark all that apply" questions ("mark all that apply" type questions where one or more response options do not contain a skip instruction at the "No" or "None" response, but keeping a "No" or "None" response in combination with other responses does not make logical sense), when the "No" or "None" response was selected, all responses within the question group were examined. If other responses were checked, the "No" or "None" response was recoded to "Not selected", and the other responses were retained.

Deriving and Imputing Measure of Household Adults

A program was developed based on the following guidelines in order to develop a single derived indicator for the number of household adults. The derived value is calculated for each household based on two sources of household size information that is solicited in the questionnaire. The guidelines were adapted from the analogous procedures used in HINTS 5 and 6.

1. Create a composite variable (**RS_HHAdults**) from the raw and edited versions of **MailHHAdults**, resulting in a value of household adults for all households. This will be the raw (unedited) value of **MailHHAdults** for situations when respondents indicate that there are not more than one adult in the household (**AdultsInHH**=2) but enter a value for **MailHHAdults** that is greater than 1.

2. Create a second indicator for the number of adults in the household (**Demo_HHAdults**) based on responses to questions in the demographic section. **Demo_HHAdults** = **TotalHousehold** - **ChildrenInHH**. If **Demo_HHAdults** is negative, then reset the value of **Demo_HHAdults** to be missing.

    A. If **Demo_HHAdults** value is missing, 0, or 11 or greater, then replace value with a value from **RS_HHAdults** if **RS_HHAdults** is between 1 and 10 inclusive; name this new variable **DemoRS_HHAdults**.

    B. If **Demo_HHAdults** is 0 and **RS_HHAdults** is not between 1 and 10 inclusive, retain the value of **Demo_HHAdults** for variable **DemoRS_HHAdults**.

3. Edit/correct the variable **Demo_HHAdults** when its values are implausible by substituting in plausible values of variable **RS_HHAdults**. If **Demo_HHAdults** is between 1 and 10 inclusive or **RS_HHAdults** is not between 1 and 10 inclusive, retain the value of **Demo_HHAdults** for variable **DemoRS_HHAdults**.

Imputation for the remaining values of zero or missing for R_HHAdults involved replacing these values with the average number of adults in responding households with non-zero or non-missing values of R_HHAdults, resulting in the variable HHAdults_Num. 49 households had missing values of R_HHAdults that needed to be imputed.

Deriving the FullTimeOcc_Cat variable

Fulltimeocc_cat combines responses to P4 (WorkFullTime) and P5 (Occupation_Cat) in to a single indicator of occupation status with the response options listed below.

Respondents are assigned to the category they selected in P5 which appears highest in the list below. For participants who chose 'Employed' for P5, their answer to P4 is used to determine whether they

are coded as 'Employed full time' or 'Employed part time.' In some instances participants open-ended response to the P5 'Other' category were used to re-categorize them in to a different category than the highest one selected on the list. Respondents who mentioned a COVID-19 related work disruption were assigned to the 'Other' category. Participants who chose both 'Employed' and an Unemployed category in P5 were coded as 'Illogical response combination.'

P4 or P5 are missing	-9
Illogical response combination	-4
Employed full time	1
Employed part time	2
Homemaker	3
Student	4
Retired	5
Disabled	6
Unemployed less than 1 year	7
Unemployed 1 year or more	8
Other	9