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2004 Health Care Survey of DoD Beneficiaries:

Child Technical Manual

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Chapter 1

Introduction

The 2004 Child Health Care Survey of Department of Defense Beneficiaries (HCSDB) is the primary tool with which the TRICARE Management Activity (TMA) of the Assistant Secretary of Defense (Health Affairs) monitors parents' opinions concerning their child's experience in the military health system (MHS). The Child HCSDB is closely modeled to the Consumer Assessment of Health Plans Survey (CAHPS) 3.0 survey instrument so that findings for children in the MHS can be compared to the results of CAHPS surveys of privately insured children in the private sector. The Child HCSDB is intended to answer the following questions:

- How *satisfied* are sponsors of children in the MHS with their child's health care and their health plan?
- Does *access* for children at military and civilian facilities meet TRICARE standards?
- What aspects of MHS care contribute most to beneficiary satisfaction with their child's health care experiences? With which aspects are beneficiaries least satisfied?
- What are the demographic characteristics of children in the MHS and their sponsors?
- How do children in the MHS compare with children in the private sector on issues related to satisfaction and access to care?
- What are special health care needs of MHS children?

The HCSDB is a mail survey of a representative sample of MHS beneficiaries. It is sponsored by the TRICARE Management Activity in the Office of the Assistant Secretary of Defense (Health Affairs) [OASD(HA)] under authority of the National Defense Authorization Act for Fiscal Year 1993 (P.L. 102-484). The DoD Defense Manpower Data Center (DMDC) prepared the sampling frame, which consists of selected variables for each MHS beneficiary in the Defense Enrollment Eligibility Reporting System (DEERS) database in March 2004. DEERS includes everyone who is eligible for a MHS benefit (i.e., everyone in the Uniformed Services—Army, Air Force, Navy, Marine Corps, Coast Guard, the Commissioned Corps of the Public Health Service, National Oceanic and Atmospheric Administration, Guard/Reserve personnel who are activated for more than 30 days—and other special categories of people who qualify for benefits). The frame includes those on active duty, those retired from military careers, immediate family members of people in the previous two categories, and surviving family members of people in these categories.

Mathematica Policy Research, Inc. (MPR, Washington, D.C.) prepared the sample of 35,000 child beneficiaries (Clusen and Friedman, 2004). National Research Corporation (NRC) fielded the survey during July and August 2004. MPR analyzed the survey data, reported on the results, and prepared this document, the "2004 Health Care Survey of DoD Beneficiaries: Child Technical Manual" under task order 14, under Contract Number 233-02-0086.

This manual is designed as a reference tool to be used by analysts as they interpret the survey findings and prepare briefings. The manual provides detailed documentation on the following: naming conventions for variables, editing procedures, selection of records, computation of response rates, recoding of variables, computation of weights, variance estimation, and construction of tables and charts for the report. The manual enables an analyst to follow, and replicate if desired, the processing of the raw survey data through each step in the production of the final database.

A. OVERVIEW OF THE HCSDB

This section represents an overview of the methodology used in the survey. From the sample, 10,436 parents or sponsors of MHS beneficiaries younger than 18 years of age completed and returned a 2004 Child HCSDB questionnaire between July 1, 2004 and August 31, 2004.

1. Sample Design

The 2004 child sample design is based on three sample stratifications—enrollment status, geographic area, and age group. Enrollment type is defined by enrollment in TRICARE Prime with a military primary care manager (PCM), enrollment in TRICARE Prime with a civilian PCM, and not enrolled in TRICARE Prime. The effect of this stratification is to allocate a greater proportion of the sample to those enrolled in Prime and a smaller proportion to those not enrolled in Prime.

Geographic area refers to the beneficiary's regional assignment. The beneficiary's regional assignment is determined by the MTF that bears the financial responsibility for the beneficiary's health care. Only beneficiaries in the continental United States were included in the sample. Regions are combined into three "super regions". Regions are organized to reflect the relative maturity of TRICARE Prime in each region. The areas are referred to as *new regions*, where Prime is most recently implemented (Regions 1, 2, and 5); *mature regions*, where Prime was first implemented (Regions 6, 9-12, and 16); and *other regions* (Regions 3, 4, and 7/8).

Beneficiaries were assigned to one of three age groups: younger than 6 years old, between 6 and 12, and between 13 and 17 years old. Sampling procedures ensured that only one child per household was surveyed.

2. 2004 Child HCSDB

The HCSDB is an annual health care survey that was first fielded in 1995 for active duty military personnel, retirees, and their adult family members. In 1996 and 1997, the survey was expanded to include topics related to health care of children. In those years, the survey consisted of two separate questionnaires: Form A for adults and Form C for children's topics. The 1998 HCSDB did not include a child survey. In 2000, fielding of the child survey was resumed. The child survey assesses parents' satisfaction with their child's access to health care, TRICARE Prime, communication and customer service related to pediatric care. Note that prior to 2002, the title of the survey referred to the survey reference period. For example, the survey fielded in 2000 described children's experiences beginning in 1999 and was known as the 1999 Child HCSDB. Beginning in 2002, the survey title refers to the year the survey was fielded.

The 1999, 2000, 2002, and 2003 Child HCSDB were closely modeled on CAHPS 2.0H survey instruments. In 2004, questions in the Child HCSDB were modified to conform to CAHPS 3.0H so that findings for children in the MHS could be compared with the results of recent CAHPS surveys of privately insured children. Most of the survey questions are identical to the CAHPS questions. CAHPS is a survey program sponsored by the Agency for Health Care Research and Quality (AHRQ), U.S. Department of Health and Human Services, and the Picker Institute. The program is designed to monitor the satisfaction and access of civilian health care plan beneficiaries. A few of the questions are "CAHPS-like" but are modified slightly to better fit the MHS context; some questions are unique to issues related to TRICARE.

The Child HCSDB covers the following topics:

- **Health Plan.** This section collects data on TRICARE Prime enrollment and the use of supplemental insurance and/or other private insurance by the child in the past 12 months.
- **Your Child's Personal Doctor or Nurse.** In this section, respondents are asked about their relationship with their child's personal doctor or nurse. They are asked to rate their child's

personal doctor or nurse on a scale of 0 to 10 where 0 is the worst and 10 is the best. There are additional questions on problems receiving care from a TRICARE primary care manager.

- **Getting Health Care from a Specialist.** This section collects information about the child's need for and access to care from specialists. Respondents rate the specialist that their child sees most frequently on a scale from 0 to 10 where 0 is the worst and 10 is the best.
- **Your Child's Health Care in the Last 12 Months.** This section collects information on where children of DoD beneficiaries received most of their care in the past 12 months. These are questions on both military and civilian care. This section also contains questions about general and specific care at the facility the child used the most. These questions cover topics such as availability of providers and their staff, convenience, and courtesy and respect shown by providers and their staff. These questions are similar in content and format to questions in CAHPS.
- **Specialized Services.** In this section, parents are asked about requests for special medical equipment and therapy for their children. There are additional questions on how much of a problem it was to obtain these services.
- **Your Child's Health Plan.** This section is designed to measure beneficiaries' satisfaction with their child's primary health plan. Respondents are asked to rate their child's health plan on a scale of 0 to 10, where 0 is the worst and 10 is the best. Additionally, respondents are asked questions on problems with claims processing for their child, finding and understanding written materials from their child's health plan, customer service, processing paperwork, and resolving complaints.
- **Prescription Medications.** This section collects information on obtaining prescription medication for beneficiaries' children.
- **About Your Child and You.** This section collects demographic information about the child, including age, gender, and race. Respondents also report their age, gender, education level, and relationship to the child. This section includes a battery of questions designed to identify children with special health care needs.

3. Survey Response

The survey was fielded by mail. Out of the initial sample of 35,000, NRC sent out 34,400 surveys during Wave 1 on July 3, 2004. The final mailing took place on August 6, 2004. Of these questionnaires, a total of 10,436 were returned either by mail or internet, for a response rate of 31.3 percent.

4. Database Development

MPR edited the data, selected the records for inclusion in the final database, and constructed variables to be used in the reports. To ensure that the survey data was representative of the DEERS population, MPR developed weights to take account of the initial sampling and the sampled individuals who chose not to respond to the survey.

5. Report

This year's results are presented in the form of issue briefs:

- Experiences of Children with Special Health Care Needs in TRICARE
- Overweight Children in the Military Health System

Results are also presented in the *2004 HCSDB Annual Report.*

B. ORGANIZATION OF THIS MANUAL

Chapter 2 presents the procedures used in fielding the survey. Chapter 3 explains how the database was developed. It covers naming conventions, editing procedures, record selection criteria, descriptions of all variable types, definitions of each constructed variable, and weighting procedures. Chapter 4 describes how the database was analyzed. The description includes rules for developing response rates, an explanation of the dependent variables and independent variables, and the methodology for estimating the variance of estimates. The manual concludes with a series of technical appendices:

- Appendix A: Annotated questionnaire
- Appendix B: Materials sent to the respondents during the fielding of the survey
- Appendix C: Data Processing Architecture
- Appendix D: Coding Scheme
- Appendix E: SAS Code

Chapter 2

Survey of Children

This chapter presents information on the survey administration cycle for the 2004 Child Health Care Survey of DoD Beneficiaries (HCSDB), with specific details on the survey mailing cycle and the number of surveys received.. Those who received the mailing were given the option of responding on the internet instead of by mail. This chapter describes the mailings and the surveys received by mail. Both mail and internet responses are included in the dataset, frequency tables and response rate calculations.

A. SURVEY OPERATIONS ACTIVITIES

The operational support for mailing the survey involved four mailings to beneficiaries between June 3, 2004 and August 6, 2004. Targeted mailings and remailings have been integrated into the mailing administration in order to increase response rates. The mailings are as follows: notification letter, first survey mailing, reminder/thank you post card, and second survey mailing. The notification letter was a short letter of explanation encouraging beneficiaries to participate. The first and second surveys were mailed with a cover letter of explanation and an option to complete the survey on-line. The reminder/thank you post card was mailed between the first and second surveys reminding beneficiaries to complete the survey and thanking those beneficiaries who had completed the survey. Examples of these are available in Appendix B. All mailings have been completed. The field period closed on September 5, 2004. Survey responses were collected for several weeks after the close and were included in the final dataset. Chapter 2 describes fielding up to September 5.

B. ADDRESS UPDATE ACTIVITIES PRIOR TO AND DURING SURVEY ADMINISTRATION

The sample file was received from Mathematica Policy Research (MPR) via Standard Technology, Inc. (STI) on May 7, 2004. The file contained 35,000 records of DoD beneficiaries and 72 variables constructed from the Defense Enrollment Eligibility Reporting System (DEERS). The file was sent to an NCOA vendor for address updating on May 10, 2004. The NRC+Picker Group (NRCPicker) sent a copy of all sample records to an outside vendor to receive address hygiene services and to be interfaced with the National Change of Address (NCOA) database to obtain updated address information. The NCOA vendor returned the updated address file and this information, along with the sample file from MPR, were loaded into NRCPicker's proprietary software system known as Qualisys. Qualisys is NRCPicker's "quality process" software and business discipline that standardizes and automates the entire survey process from data quality checks to the scanning of returned surveys.

The Configuration Manager module in Qualisys contains the layout for all mail items (e.g., the survey, cover letters, thank you/reminder postcards), mail methodology, and cover letter personalization. Notification letters were mailed to one of the three DEERS addresses: residential address, sponsor address, and unit address. When possible, the residential address was given preference over the sponsor address and likewise the sponsor address was given preference over the unit address. When all records had been assigned an address for the notification letter mailing

step, Qualisys began generating the personalized letters. The notification letter was mailed on June 3, 2004.

The updating of addresses is a continuous process throughout the survey administration cycle. During survey administration, address updates are obtained from multiple sources:

- Self report by beneficiaries (via telephone, voice mail, or fax).
- Address correction information from the United States Postal Service (USPS).
- Out of date forwarding address information from the USPS.
- Mail items returned by the USPS as non-deliverable.

Updated address information was added to Qualisys through the use of the DoD Beneficiary Update System (DoDBUS), an interface created by NRCPicker developers to allow new address information to be entered into Qualisys and to track changes when using the DEERS addresses.

Address information received directly from the beneficiary was considered the most accurate and was the first address used whenever possible. Beneficiaries were provided with toll free telephone and toll free fax phone numbers and voice mail option to use in order to update their addresses. Collect calls were also available if a beneficiary could not access the toll free telephone number. The telephone and fax numbers were printed on the notification letter, the reminder/thank you card, and the cover letter that accompanied the first survey.

The United States Postal Service also provided address update information in the form of Address Correction Services. This service is accessed by the use of the "Address Service Requested" indicices on the notification letter and the outer envelopes of the first and second surveys. Many post offices returned updated address information on diskettes, which are loaded into Qualisys. Post offices that did not have access to this technology returned copies of the mail piece with the old and new addresses provided. This information was entered into Qualisys through the DoDBUS.

The DoDBUS also provided the interface to enter non-deliverable mail pieces and mark the address used for that mail step as invalid. If other addresses were available, the DoDBUS operator would choose the next available address for the next mail step. When all addresses had been exhausted, the record was marked as a "final non-deliverable" and no further mailings were attempted. Second surveys that were returned as non-deliverable were also marked as "final non-deliverable" as it was the final mail step in this methodology.

Based on data from the final returns data set, a total of 600 beneficiaries did not have sufficient address information and were not included in any of the mail steps. The remaining beneficiaries were mailed the notification letter. Prior to mailing the first survey, NRCPicker removed any beneficiaries who were marked as "final non-deliverable" or any beneficiary who contacted NRC and refused to participate or was found to be ineligible. First surveys were mailed on July 2, 2004. The reminder/thank you card was mailed on July 26, 2004. The reminder card was sent to all beneficiaries who received the first survey, with the exception of those beneficiaries whose first mail survey was returned, or their record marked as "final non-deliverable". Second surveys were mailed on August 6, 2004. Second surveys were mailed to all beneficiaries who did not return a first mail survey, and whose records had not been marked as "final non-deliverable".

Table 2.1 summarizes address sources by each of the four beneficiary categories. This table shows the source of the last address used in sending a mailing piece to a beneficiary.

TABLE 2.1

FREQUENCY OF ADDRESS SOURCE BY BENEFICIARY CATEGORY
(N = 35,000)

	Active Duty	Active Duty Dependents	Retirees and Family Members < 65	Retirees and Family Members 65+	Total
No Valid Address	0 0.00%	3 0.01%	7 0.02%	0 0.00%	10 0.03%
Bad Address	1 0.00%	390 1.11%	172 0.49%	0 0.00%	563 1.61%
Phone call/Voice Mail	0 0.00%	51 0.15%	27 0.08%	0 0.00%	78 0.22%
ACR	1 0.00%	188 0.54%	58 0.17%	0 0.00%	247 0.71%
Fax	0 0.00%	14 0.04%	12 0.03%	0 0.00%	26 0.07%
NCOA	2 0.01%	1,912 5.46%	961 2.75%	0 0.00%	2,875 8.21%
DEERS Unit	15 0.04%	0 0.00%	0 0.00%	0 0.00%	15 0.04%
DEERS Residential	14 0.04%	19,747 56.42%	10,216 29.19%	0 0.00%	29,977 85.65%
DEERS Sponsor	0 0.00%	723 2.07%	468 1.34%	0 0.00%	1,191 3.40%
ODF	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Electronic ACR	0 0.00%	11 0.03%	7 0.02%	0 0.00%	18 0.05%
Total	33 0.09%	23,039 65.83%	11,928 34.08%	0 0.00%	35,000 100.00%

Table 2.2 summarizes the address sources for returned surveys included in the 2004 Child HCSDB data file. The data shows that almost 91**%** of the returned surveys were mailed to the residential beneficiary address supplied by DEERS.

TABLE 2.2

FREQUENCY OF ADDRESS SOURCES FOR RETURNED SURVEYS
(N = 10,650)

Address Type	**Frequency (n)**	**Percent of Returns**
DEERS Residential	9,666	90.76%
DEERS Sponsor	95	0.89%
DEERS Unit	0	0.00%
Phone/Voice Mail	35	0.33%
Fax	15	0.14%
NCOA	804	7.55%
ACR & ODF	35	0.33%
Electronic ACR	0	0.00%
Total	10,650	100.00%

Note: If beneficiaries returned more than one completed survey, both surveys were included in the numbers in Table 2.2. Web surveys are included in these returns.

C. LETTER PROCESSING PROCEDURES

A vital component to effective management and monitoring of the data collection process is the Survey Control System (SCS). The SCS ensures that data are accurate, integrated, and available during all phases of the survey administration. NRCPicker's unique identifier known as a "lithocode" links all records in the SCS to the original sample file. The lithocode is a unique identification number assigned by Qualisys at the time that letters or surveys are generated. A new lithocode number is created for each mail step. These lithocodes are stored for each beneficiary in a table in the SCS. This allows NRCPicker staff to determine whether a returned survey is a first or second survey and identify instances where a beneficiary may return both the first and second survey. The lithocode also allows the surveys to be monitored without use of a beneficiary's social security number or other information that could identify the beneficiary. Lithocodes are used to identify the beneficiary when returned surveys are scanned, whenever beneficiaries are removed from future mailings due to refusal/ineligibility or no valid address, and when addresses are updated or changed in DoDBUS.

D. ON-LINE PROCESSING PROCEDURES

In addition to receiving a mail survey, beneficiaries are given the option of completing the survey via a secure internet web site. The cover letter that accompanies the first and second mail surveys contains an internet URL and unique password that allows beneficiaries to complete the survey on-line. All passwords provided to beneficiaries are randomly generated by NRCPicker and consist of three alpha and four numeric characters. Similar to lithocodes, the passwords are unique to each beneficiary and allow the Web surveys to be monitored without the use of a beneficiary's social security number or any other personal identifying information. Upon completion of the on-line survey, the beneficiary does not have the ability to access the on-line survey again. All questions on the on-line survey are identical to the mail survey. However, the questions on the on-line survey are presented individually on a screen by screen basis and skip patterns are programmed into the survey.

E. SURVEY ADMINISTRATION TIMELINE

The HCSDB mailing process was designed so that each beneficiary with a usable address could receive up to four documents: a notification letter, a first survey, a reminder/thank you card, and a second survey. A second survey was not sent if a beneficiary returned a first mail survey. If a beneficiary identified themselves as refusing to participate or as ineligible, they were removed from future mail steps as well. Beneficiaries who were marked as "final non-deliverable" were also removed from future mail steps.

A total of 34,400 notification letters were mailed on June 3, 2004. Immediately following this mailing, NRCPicker staff began entering address changes and updating records as appropriate and to indicate beneficiaries who identified themselves as refusing to participate or as ineligible to participate. There were 1,593 records marked as "final non-deliverable" or as refused/ineligible prior to mailing the first survey. The survey is a 16-page booklet accompanied by a cover letter of explanation and a postage paid return envelope. A total of 32,807 first surveys were mailed to beneficiaries on July 2, 2004.

The reminder/thank you card was sent to 28,213 beneficiaries on July 22, 2004. The number of reminder/thank you cards was reduced from the previous step by 2,081 records marked as "final non-deliverables" or as refused/ineligible, and 2,513 records marked due to beneficiaries who returned the first mail survey.

The second survey was mailed to 25,943 beneficiaries on August 6, 2004. This number was reduced from the previous step by 133 records marked as "final non-deliverable" or as refused/ineligible, and 2,137 records marked due to beneficiaries who returned the first survey.

Prior to the mailing of the first survey, 20 mail questionnaires were completed by NRCPicker staff and scanned into the SCS. Additionally, 10 on-line questionnaires were completed by NRCPicker staff. Copies of the mail questionnaires and a data set which included the mail and on-line test files were sent to MPR to determine if the file was readable, scanned correctly for the mail version and programmed correctly for the on-line version.

Table 2.3 summarizes the HCSDB mailings. Data includes the date of each mail step, the quantity mailed in each step, and the number of records that were removed prior to the next mail step.

TABLE 2.3

MAILING TIMELINE

Mail Step	**Action**	**Records Removed**	**Sample**
	Total Sample Size		**35,000**
	Subtract no address	10	
	Subtract bad address	563	
	Subtract no first name	27	
	Total		600
Notification Letter	Mailed on June 3, 2004		**34,400**
	Subtract PND or ineligible/refused	1,593	
	Total		1,593
First Survey	Mailed on July 2, 2004		**32,807**
	Subtract PND or ineligible/refused	2,081	
	Subtract 1st Surveys received	2,513	
	Total		4,594
Reminder/Thank You Post Card	Mailed on July 26, 2004		**28,213**
	Subtract PND or ineligible/refused	133	
	Subtract 1st Surveys received	2,137	
	Total		2,270
Second Survey	Mailed on August 6, 2004		**25,943**

F. PROCESSING AND CLASSIFICATION OF INCOMING SURVEYS

1. Mail Surveys

Returned surveys were visually checked for any written comments prior to scanning. Refusal or ineligibility comments were entered into Qualisys using the DoDBUS. Any other comments were referred to the Account Director to be forwarded to the DoD Task Manager.

Each morning, NRCPicker staff open non-deliverables and update address changes or "final non-deliverable" status for each record. Surveys are scanned using software called FAQSS. The Scanner Interface module of Qualisys receives the information from FAQSS and identifies the beneficiary and their responses to the survey questions.

Surveys must be imported from the Qualisys directory into the FAQSS System by running a "create text definitions files" from the scanner interface application. During the import process, the surveys are run through three passes. In the first pass, the lithocode is read. Any unread lithocodes are manually entered. The system then creates a lithocode list. From the complete lithocode list, Qualisys exports the text definition files to match the lithocodes. Lastly, FAQSS separates the files into batches and moves them into the processing queue.

The next step in scanning is batch processing. A template is used by the processor to find response areas and to read the responses as valid or spurious. If the system is not 99 percent certain of a response, it is sent to a data editing workstation.

Any questionable marks as detected by the processor are brought up at the data editing station for review by an editor. The editor decides if the mark is a valid response and enters the appropriate system instructions. If the editor is unable to determine the response, a "non-response" instruction is entered. From scanner interface, a transfer results application is applied which moves the scanning files into the Qualisys database and logs the transaction. A final check is then performed to ensure that all surveys have been entered in the Qualisys database.

Throughout the administration of HCSDB, all records are marked with a final disposition code known as FLAG_FIN. Some records (such as no valid addresses) can be marked prior to the first mail step. Other records cannot be marked until all mail steps have been completed. The FLAG_FIN variables and their descriptions are :

- FLAG_FIN=1
  Returned survey – survey was completed and returned.

- FLAG_FIN=2
  Returned ineligible – survey was returned with at least one question marked and information that the beneficiary was ineligible. The information indicating ineligibility may have come by phone, fax, or the survey itself.

- FLAG_FIN=3
  Returned blank – temporarily ill or incapacitated. Survey was returned blank along with information that the beneficiary was temporarily ill or incapacitated. These sample members were eligible.

- FLAG_FIN=4
  Returned blank – deceased. Survey was returned blank along with information that the beneficiary was deceased. These sample members were ineligible.

- FLAG_FIN=5
  Returned blank – incarcerated or permanently incapacitated. Survey was returned blank along with information that the beneficiary was incarcerated or permanently hospitalized. These sample members were ineligible.

- FLAG_FIN=6
  Returned blank – left military or divorced after 1/31/04, retired. Survey was returned blank along with information that the beneficiary left the military after 1/31/04, divorced after 1/31/04, or retired. These sample members were eligible.

- FLAG_FIN=7
  Returned blank – not eligible on 1/31/04. Survey was returned blank along with information that the beneficiary was not eligible for Military Health System Plan on 1/31/04. These sample members were ineligible.

- FLAG_FIN=8
  Returned blank – other eligible. Survey was returned blank along with a reason given by the sample member. These sample members were eligible.

- FLAG_FIN=9
  Returned blank – no reason. Survey was returned blank without an explanation.

- FLAG_FIN=10
  No return – temporarily ill or incapacitated. Survey was not returned and beneficiary was temporarily ill or incapacitated. These sample members were eligible.

- FLAG_FIN=11
  No return – active refuser. Survey was not returned and beneficiary refused to take part in the survey. These sample members were eligible.

- FLAG_FIN=12
  No return – deceased. Survey was not returned and beneficiary deceased. These sample members were ineligible.

- FLAG_FIN=13
  No return – incarcerated or permanently incapacitated. Survey was not returned, beneficiary was incarcerated or permanently hospitalized. These sample members were ineligible.

- FLAG_FIN=14
  No return – left military or divorced after 1/31/04, retired. Survey was not returned, beneficiary left service after 1/31/04, divorced after 1/31/04, or retired. These sample members were eligible.

- FLAG_FIN=15
  No return – not eligible on 1/31/04. Survey was not returned, beneficiary was not eligible for Military Health System Plan on 1/31/04. These sample members were ineligible.

- FLAG_FIN=16
  No return – other eligible. Survey was not returned, beneficiary gave other reason for not completing the survey. These sample members were eligible.

- FLAG_FIN=17
  No return – no reason. Survey was not returned, beneficiary gave no reason.

- FLAG_FIN=18
  PND – no address remaining. All addresses were attempted, mailing was returned PND.

- FLAG_FIN=19
  PND – address remaining at the close of field. At the close of field, the last address used was found invalid, next available was not attempted.

- FLAG_FIN=20
  Original Non-Locatable – no address at start of mailing. Substantially incomplete or blank address field before the survey was administered, no mailings attempted.

- FLAG_FIN=21
  Beneficiary provides written documentation declining to participate but doesn't specify a reason.

- FLAG_FIN=22
  Beneficiary indicates they are hospitalized but without providing any way to determine whether incapacity is temporary or permanent. Therefore, eligibility determination can not be made.

- FLAG_FIN=23
  Returned blank – deployed. Survey was returned blank along with information that the beneficiary was deployed.

- FLAG_FIN=24
  No return – deployed. Survey was not returned, beneficiary was deployed.

Table 2.4 documents the final disposition of the survey sample by each beneficiary group. The ENBGSMPL variable was used to create the beneficiary groups. The ENBGSMPL variable has values 1-10. The value of 1 is = Active Duty; values of 2, 3, & 4 = Active Duty Dependents, values of 5, 6, & 7 = Retired and Family Members < 65; and values of 8, 9, & 10 = Retired and Family Members > 65.

2. On-Line Surveys

At the conclusion of the fielding period, all on-line data is transferred into a database format file. A data check program using SAS statistical software is run to ensure that all values in the file correspond with the values in the annotated questionnaire sent by the DoD. The file is then matched back to the original sample file to obtain the beneficiaries MPRID identifier using the unique passwords generated by NRCPicker. A value of 1 is then assigned to the FLAG_FIN field as the on-line surveys are all considered returned. Next, the on-line data is merged with the mail data and a field is created to identify the two surveys. Finally, in cases where beneficiaries completed both the mail survey and on-line survey, the on-line survey is always considered a second returned survey.

TABLE 2.4

FREQUENCY AND PERCENT DISTRIBUTION OF FINAL DISPOSITION OF SURVEY SAMPLE BY BENEFICIARY GROUP

Final Survey Disposition	Active Duty	Active Duty Dependents	Retirees and Family Members < 65	Retirees and Family Members 65 +	Total
Returned non blank survey	4 0.01%	6,039 17.25%	4,353 12.44%	0 0.00%	10,396 29.70%
Returned – ineligible	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - temp ill or incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank – deceased	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank – incarcerated or perm incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - left military or divorced after 1/31/04	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - not eligible for MHS on 1/31/04	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - other eligible	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - no reason	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
No return - temp ill or incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
No return - active refuser	0 0.00%	9 0.03%	9 0.03%	0 0.00%	18 0.05%
No return - deceased	0 0.00%	3 0.01%	1 0.00%	0 0.00%	4 0.01%
No return - incarcerated or perm incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
No return - left military or divorced after 1/31/04	0 0.00%	1 0.00%	2 0.01%	0 0.00%	3 0.01%
No return - not eligible on 1/31/04	0 0.00%	7 0.02%	11 0.03%	0 0.00%	18 0.05%
No return - other eligible	0 0.00%	5 0.01%	1 0.00%	0 0.00%	6 0.02%
No return – no reason given	15 0.04%	14,149 40.43%	6,292 17.98%	0 0.00%	20456 58.45%
PND – no address remaining	12 0.03%	256 0.73%	179 0.51%	0 0.00%	447 1.28%
PND - address remaining	1 0.00%	2154 6.15%	894 2.55%	0 0.00%	3049 8.71%
Original Non-Locatable - no address at start	1 0.00%	414 1.18%	185 0.53%	0 0.00%	600 1.71%
Beneficiary writes and refuses participation	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Hospitalized - unknown if temp or perm Incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - deployed	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
No return - deployed	0 0.00%	2 0.01%	1 0.00%	0 0.00%	3 0.01%
Total	33 0.09%	23,039 65.83%	11,928 34.08%	0 0.00%	35,000 100.00%

Note: This table includes Web returns, but does not include duplicate surveys.

The data in Table 2.5 displays the number of first and second surveys returned.

TABLE 2.5

RETURNED SURVEYS BY SURVEY TYPE

Survey Indicator	First Survey	Second Survey	Web Survey	Total
Returned non-blank survey	6,937 65.14%	2,502 23.49%	957 8.99%	10,396 97.61%
Returned non-blank duplicate survey	1 0.01%	181 1.70%	72 0.68%	254 2.39%
Total	6,938 65.15%	2,683 25.19%	1,029 9.66%	10,650 100.00%

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Chapter
3

Database

This chapter explains the process of developing the raw survey data into a final database free of inconsistencies and ready for analysis. We discuss the design of the database; cleaning, editing, and implementing the Coding Scheme; record selection; and constructing variables.

A. DATABASE DESIGN

The 2004 Child HCSDB consists of variables from various sources. When NRC delivered the file to MPR after fielding the sample, the following types of variables were present:

- DEERS information on beneficiary group, social security number, sex, age, etc.
- Sampling variables used to place beneficiaries in appropriate strata
- Questionnaire responses
- NRC information from fielding the sample, such as scan date and flags developed during the fielding to assist us in determining eligibility

MPR added the following types of variables to the database:

- Updated DEERS variables from the time of data collection to be used for post-stratification
- Coding Scheme flags
- Constructed variables for analysis
- Weights

In addition, MPR updated and cleaned the questionnaire responses using the Coding Scheme tables found in Appendix D. This year the final file does not include both the original and recoded responses, but only the cleaned responses; this will help users to avoid using an uncleaned response for analysis. We structured the final database so that all variables from a particular source are grouped by position. Table 3.1 lists all variables in the database by source and briefly describes each variable. For specific information on variable location within the database, refer to the "2004 Health Care Survey of DoD Beneficiaries: Child Codebook and User's Guide."

1. Data Sources

a. DEERS

The sampling frame was provided to MPR prior to the selection of the sample. DEERS information such as sex, date of birth, and service are retained in the database; this data is current as of the time of sample selection.

b. Sampling Variables

MPR developed variables during the sample selection procedure that were instrumental in placing beneficiaries in appropriate strata. Many of the variables are retained on the database.

c. Questionnaire Responses

These variables represent the cleaned values for all responses to the questionnaire. The original values scanned in by NRC are cleaned and recoded as necessary to ensure that responses are consistent throughout the questionnaire. The Coding Scheme tables found in Appendix D are the basis for insuring data quality.

d. Survey Fielding Variables

In the process of fielding the survey, NRC created a number of variables that we retain in the database. Certain of these variables, information that came in by phone, for example, assist us in determining eligibility.

e. Coding Scheme Flags

Each table of the Coding Scheme (see Appendix D) has a flag associated with it that indicates the pattern of original responses and any recodes that were done. For example, the table for Note 5 has a flag N5.

f. Constructed Variables

MPR constructed additional variables that were used in the child report cards. Often these variables were regroupings of questionnaire responses or the creation of a binary variable to indicate whether or not a TRICARE standard was met. Complete information on each constructed variable is found in section 3.D.

g. Weights

MPR developed weights for each record in the final database. Weights are required for the following reasons:

- To compensate for variable probabilities of selection
- To adjust for differential response rates
- To improve the precision of survey-based estimates through post-stratification

Weighting procedures are discussed in section 3.E.

TABLE 3.1

VARIABLES IN THE 2004 CHILD HCSDB DATA FILE

SAMPLING VARIABLES	
MPRID	- Unique MPR Identifier
MPCSMPL	- MPCSMPL - Military Personnel Category
SVCSMPL	- SVCSMPL - Branch of Service
SEXSMPL	- SEXSMPL - Sex
AGESMPL	- AGESMPL - Age
BGCSMPL	- BGCSMPL - Beneficiary Group
REGSMPL	- REGSMPL - Region
ENBGSMPL	- Enrollment by beneficiary category
STRATUM	- Sampling STRATUM
SUPREG	- SUPREG - Super Region
E1	- Eligibility indicator for period = 1
E2	- Eligibility indicator for period = 2
E3	- Eligibility indicator for period = 3
E4	- Eligibility indicator for period = 4
DEERS VARIABLES	
MRTLSTAT	- Marital Status
RACEETHN	- Race/Ethnic Code
DAGEQY	- Age (As of 28 February 2004)
FIELDAGE	- Age (As of 1 July 2004)
PCM	- Primary Manager Code (CIV or MIL)
LEGDDSCD	- DDS Code
PNLCATCD	- Personnel Category Code (Duty Status)
MBRRELCD	- Member Relationship Code
DBENCAT	- Beneficiary Category
DMEDELG	- Medical Privlege Code
DSPONSVC	- Derived Sponsor Branch of Service
MEDTYPE	- Medicare Type
PATCAT	- Aggregated Beneficiary Category
ENRID	- Enrollment DMISID
DCATCH	- Catchment Area
ULOCDMIS	- Unit DMISID
DHSRGN	- Health Service Region
POST STRATIFICATION	
ENLSMPL	- ENLSMPL - Enrollment Sampling Group
FNSTATUS	- Final Status
KEYCOUNT	- # of Key Questions Answered
POSTSTR	- Post Stratification Cell
QUESTIONNAIRE RESPONSES	
C04001	- Are you adult responsible for child
C04002	- Which hlth plan did you use most
C04003	- Last 12 mnths:# months in a row child enrolled in health plan
C04004A	- Child covered by TRICARE Prime
C04004B	- Child covered by TRICARE Extra/Standard
C04004C	- Child covered by civilian HMO
C04004D	- Child covered by other civilian insurance
C04004E	- Child covered by Medicaid
C04004F	- Child covered by Uniform Services Family Health Plan(USFHP)
C04004G	- Child covered by Federal Employee Health Benefit Program (FEHBP)
C04004H	- Child not use health plan last 12 months
C04004I	- Not sure who child is covered by
C04005	- Does child have personal Dr/Nurse
C04006	- Rating of child's personal Dr/Nurse

C04007 - Had same personal doctor/nurse before joining this health plan
C04008 - How much problem to get personal Dr/Nurse
C04009 - Talk about feeling/growing/behaving
C04010 - Child has medical/behavioral/other condition lasting >3mnths
C04011 - Dr understands med/behvrl/othr cndtn's effect on child's daily life
C04012 - Dr understands med/behvrl/othr cndtn's effect on family's daily life
C04013 - Does child have primary care manager
C04014 - Know name of child's Primary care mgr
C04015 - In last 12 mos how much prblm to see PCM
C04016 - Is primary care mgr military or civilian
C04017 - Did you think child needed to see spclst
C04018 - How much problem to get referral to specialist that child needed to see
C04019 - In last 12 mos did child see specialist
C04020 - Rating of specialist seen most often
C04021 - Specialist same as personal Dr
C04022 - Call during reg. Hrs to get help/advice
C04023 - Called during reg Hrs did you get hlp
C04024 - Have illness/injury need care right away
C04025 - Get needed care as soon as wanted
C04026 - Make appt for regular/routine hlthcre
C04027 - How oftn child got apptmnt for regular/routine care as soon as wanted
C04028 - Times to ER
C04029 - Times to Dr office/Clinic (excluding ER)
C04030 - Parent/Dr believed child needed care/tests/treatment
C04031 - Problem to get necessary care
C04032 - Needed approval from child's health plan for any care/tests/treatment
C04033 - Problem wait for approval
C04034 - Taken to exam room within 15 minutes
C04035 - How oftn staff treat w/courtesy &respect
C04036 - How oftn were staff helpful
C04037 - How oftn did staff listen carefully
C04038 - How oftn did staff explain things to you
C04039 - How oftn staff respect what had to say
C04040 - Child able to talk to Dr
C04041 - Dr explain in way for child to undrstnd
C04042 - How oftn spend enough time w/child
C04043 - Have questions about child's health or health care
C04044 - How oftn child's Dr made it easy to discuss concerns
C04045 - How oftn you got specific info needed from child's Dr
C04046 - How oftn you had your questions answered by child's Dr
C04047 - Were any decisions made about your child's health care
C04048 - How oftn child's Dr offer you choices about child's health care
C04049 - How oftn child's Dr discuss good and bad of diffrnt choices
C04050 - How oftn child's Dr ask you to tell them what choice you prefer
C04051 - How oftn child's Dr involved you when decisions were made
C04052 - Rating of child's healthcare
C04053 - Type of facility child used most often
C04054 - Child enrolled in any kind of school or daycare
C04055 - Needed child's Dr to contact school about child's health
C04056 - Got help needed from child's Dr in contacting child's school
C04057 - Got special medical devices for child: eg walker, oxygen equipmnt
C04058 - Problem getting special medical equipment for child
C04059 - Someone from health plan/Dr's office helped get special med equipment
C04060 - Got special therapy for child: eg physcl, occuptnl, spch therapy
C04061 - Problem getting special therapy for child
C04062 - Someone from health plan/Dr's office helped get special therapy for child
C04063 - Got treatmnt/cnseling for child's emotnl/develpmnt/behavrl prblm

C04064	- Problem getting treatment or counseling for child
C04065	- Someone from health plan/Dr's office helped get treatmnt/counseling
C04066	- Child got care from more than one kind of health care provider
C04067	- Someone from hlth plan/Dr's offc helped coordnt chld's care frm dif srvcs
C04068	- Send in any claims
C04069	- Handle claim in reasonable time
C04070	- Handle claim correctly
C04071	- Plan make clear how much to pay
C04072	- Look for info/written material
C04073	- Problem to find/understand info in written material
C04074	- Call customer service to get info
C04075	- Problem get help when call customer svc
C04076	- Experience with paperwork
C04077	- Problem with paperwork
C04078	- Rating of exprience with child hlth plan
C04079	- Child get prescripton or you refilled child's prescription
C04080	- Problem getting child's prescription medicine
C04081	- Someone from health plan/Dr's office helped get child's prescription
C04082	- Rate child's overall health
C04083A	- Child's height in feet
C04083B	- Child's height in inches
C04084	- Child's weight in pounds
C04085	- Past 7 days: Days child exercised for at least 20 min with exertion
C04086	- Past 7 days: Days child exercised for at least 30 min without exertion
C04087	- Past 7 days: Days child watched TV
C04088	- Past 7 days: Days child eat fast food
C04089	- Child use medicine prescribed by Dr
C04090	- Medicine b/c medical,behavioral,other
C04091	- Medicine b/c cndtn expected last>=12 mos
C04092	- Child needs/uses more medical,mntl,eductnl services than is usual
C04093	- Use services b/c of medical/behavioral/other health condition
C04094	- Svcs b/c condition expected to last>=12 mos
C04095	- Limited/prevented in ability
C04096	- Limited b/c medical, behavioral, other
C04097	- Limited b/c condition expected last>=1yr
C04098	- Get special therapy
C04099	- Therapy b/c medical, behavioral, other condition
C04100	- Therapy b/c condition expected to last>=1yr
C04101	- Problem for which gets trtmnt/counseling
C04102	- Trtmnt/counseling b/c conditn last>=1yr
C04103	- Is child male or female
C04104	- Is child Hispanic/Latino
C04105A	- Child race: White
C04105B	- Child race: Black
C04105C	- Child race: Asian
C04105D	- Child race: Native Hawaiian/Pacific Islander
C04105E	- Child race: Am. Indian/Alaskan
C04105F	- Child race: Other
C04106	- Your age now
C04107	- Are you male or female
C04108	- Highest grade/level you completed
C04109	- How are you related to the policy holder
C04110	- How related to child
NRC SURVEY FIELDING VARIABLES	
ONTIME	- On time indicator
FLAG_FIN	- Final Disposition
DUPFLAG	- Multiple Response Indicator

WEB	- Web/mail-out survey indicator
TRICKDUP	- Ontime and after fielding period indicat
CODING SCHEME FLAGS AND COUNTS	
N1	- Coding Scheme Note 1
N2	- Coding Scheme Note 2
N3	- Coding Scheme Note 3
N4	- Coding Scheme Note 4
N5	- Coding Scheme Note 5
N6	- Coding Scheme Note 6
N7	- Coding Scheme Note 7
N8	- Coding scheme Note 8
N9	- Coding scheme Note 9
N10	- Coding Scheme Note 10
N11	- Coding Scheme Note 11
N12	- Coding Scheme Note 12
N13	- Coding Scheme Note 13
N14	- Coding Scheme Note 14
N15	- Coding Scheme Note 15
N16	- Coding Scheme Note 16
N17	- Coding Scheme Note 17
N18	- Coding Scheme Note 18
N19	- Coding Scheme Note 19
N20	- Coding Scheme Note 20
N21	- Coding Scheme Note 21
N22	- Coding Scheme Note 22
N23	- Coding Scheme Note 23
N24	- Coding Scheme Note 24
N25	- Coding Scheme Note 25
N26	- Coding Scheme Note 26
N27	- Coding Scheme Note 27
N28	- Coding Scheme Note 28
N29	- Coding Scheme Note 29
N30	- Coding Scheme Note 30
MISS_1	- Count of: Violates Skip Pattern
MISS_4	- Count of: Incomplete grid error
MISS_5	- Count of: Dont know or not sure
MISS_6	- Count of: Not applicable - valid skip
MISS_7	- Count of: Out-of-range error
MISS_8	- Count of: Multiple response error
MISS_9	- Count of: No response - invalid skip
MISS_TOT	- Total number of missing responses
CONSTRUCTED VARIABLES	
CONUS	- CONUS - CONUS/OCONUS Indicator
XENRLLMT	- Enrollment in TRICARE Prime
XENR_PCM	- Enrollment by PCM type
XINS_COV	- Insurance Coverage
XBNFGRP	- Constructed Beneficiary Group
XBMIPCT	- Body Mass Index Child Percentile
XBMICAT	- Body Mass Index Category
XTNEXREG	- TRICARE Next Generation of Contracts Region grouping
KMILOFFC	- Office wait of more than 15 minutes-Mil
KCIVOFFC	- Office wait of more than 15 minutes-Civ
KBGPRB1	- Big problem getting referrals to spclst
KBGPRB2	- Big problem getting necessary care
KMILOP	- Outpatient visits to Military facility
KCIVOP	- Outpatient visits to Civilian facility
KCIVINS	- Beneficiary covered by civilian insurance

WEIGHTS	
BWT	- BWT - Basic Sampling Weight
ADJWT	- ADJWT - Adjusted Weight
POP	- DEERS population by CELLNAME for weights
WRWT	- Final Weight
WRWT1	- Replicated/JackKnife Weight 1
WRWT2	- Replicated/JackKnife Weight 2
WRWT3	- Replicated/JackKnife Weight 3
WRWT4	- Replicated/JackKnife Weight 4
WRWT5	- Replicated/JackKnife Weight 5
WRWT6	- Replicated/JackKnife Weight 6
WRWT7	- Replicated/JackKnife Weight 7
WRWT8	- Replicated/JackKnife Weight 8
WRWT9	- Replicated/JackKnife Weight 9
WRWT10	- Replicated/JackKnife Weight 10
WRWT11	- Replicated/JackKnife Weight 11
WRWT12	- Replicated/JackKnife Weight 12
WRWT13	- Replicated/JackKnife Weight 13
WRWT14	- Replicated/JackKnife Weight 14
WRWT15	- Replicated/JackKnife Weight 15
WRWT16	- Replicated/JackKnife Weight 16
WRWT17	- Replicated/JackKnife Weight 17
WRWT18	- Replicated/JackKnife Weight 18
WRWT19	- Replicated/JackKnife Weight 19
WRWT20	- Replicated/JackKnife Weight 20
WRWT21	- Replicated/JackKnife Weight 21
WRWT22	- Replicated/JackKnife Weight 22
WRWT23	- Replicated/JackKnife Weight 23
WRWT24	- Replicated/JackKnife Weight 24
WRWT25	- Replicated/JackKnife Weight 25
WRWT26	- Replicated/JackKnife Weight 26
WRWT27	- Replicated/JackKnife Weight 27
WRWT28	- Replicated/JackKnife Weight 28
WRWT29	- Replicated/JackKnife Weight 29
WRWT30	- Replicated/JackKnife Weight 30
WRWT31	- Replicated/JackKnife Weight 31
WRWT32	- Replicated/JackKnife Weight 32
WRWT33	- Replicated/JackKnife Weight 33
WRWT34	- Replicated/JackKnife Weight 34
WRWT35	- Replicated/JackKnife Weight 35
WRWT36	- Replicated/JackKnife Weight 36
WRWT37	- Replicated/JackKnife Weight 37
WRWT38	- Replicated/JackKnife Weight 38
WRWT39	- Replicated/JackKnife Weight 39
WRWT40	- Replicated/JackKnife Weight 40
WRWT41	- Replicated/JackKnife Weight 41
WRWT42	- Replicated/JackKnife Weight 42
WRWT43	- Replicated/JackKnife Weight 43
WRWT44	- Replicated/JackKnife Weight 44
WRWT45	- Replicated/JackKnife Weight 45
WRWT46	- Replicated/JackKnife Weight 46
WRWT47	- Replicated/JackKnife Weight 47
WRWT48	- Replicated/JackKnife Weight 48
WRWT49	- Replicated/JackKnife Weight 49
WRWT50	- Replicated/JackKnife Weight 50
WRWT51	- Replicated/JackKnife Weight 51
WRWT52	- Replicated/JackKnife Weight 52

WRWT53 - Replicated/JackKnife Weight 53
WRWT54 - Replicated/JackKnife Weight 54
WRWT55 - Replicated/JackKnife Weight 55
WRWT56 - Replicated/JackKnife Weight 56
WRWT57 - Replicated/JackKnife Weight 57
WRWT58 - Replicated/JackKnife Weight 58
WRWT59 - Replicated/JackKnife Weight 59
WRWT60 - Replicated/JackKnife Weight 60

2. Variable Naming Conventions

To preserve continuity with survey data from previous years, MPR followed the same variable naming conventions used for the 1999, 2000, 2002, and 2003 Child survey data. Variable naming conventions for the 2004 Child HCSDB are shown in Table 3.2. The public use files for the child survey will contain only recoded variables.

TABLE 3.2

NAMING CONVENTIONS FOR 2004 CHILD HCSDB VARIABLES
(VARIABLES REPRESENTING SURVEY QUESTIONS)

1st Character: Survey Type	2nd – 3rd Characters: Survey Year	4th – 6th Characters: Question #	Additional Characters: Additional Information
C= Health Beneficiaries (17 and Younger, child questionnaire)	04	001 to 110	A to I are used to label responses associated with a multiple response question

(CONSTRUCTED VARIABLES)

1st Characters: Variable Group	Additional Characters: Additional Information
N=Coding scheme notes	Number referring to Note, e.g., N2
X=Constructed independent variable	Descriptive text, e.g., XENRLLMT
K=Constructed dependent variables	Descriptive text, e.g., KMILOP (total number of outpatient visits to military facility)

3. Missing Value Conventions

The 2004 conventions for missing variables are the same as the 2004 Adult HCSDB conventions. All missing value conventions used in the 2004 HCSDB are shown in Table 3.3

TABLE 3.3

CODING OF MISSING DATA AND "NOT APPLICABLE" RESPONSES

ASCII or Raw Source Data	Edited and Cleaned SAS Data	Description
Numeric	Numeric	
-9	.	No response
-8	.A	Multiple response error
-7	.O	Out of range error
-6	.N	Not applicable or valid skip
-5	.D	Scalable response of "Don't know" or "Not sure"
-4	.I	Incomplete grid error
-1	.C	Question should have been skipped, not answered

B. CLEANING AND EDITING

Data cleaning and editing procedures ensure that the data are free of inconsistencies and errors. Standard edit checks include the following:

- Checks for multiple surveys returned for any one person
- Checks for multiple responses to any question that should have one response
- Range checks for appropriate values within a single question
- Logic checks for consistent responses throughout the questionnaire

We computed frequencies and cross tabulations of values at various stages in the process to verify the accuracy of the data. Data editing and cleaning proceeded in the following way:

1. Scan Review

NRC spot checked the scanned results from the original survey to verify the accuracy of the scanning process and made any necessary corrections by viewing the returned survey.

2. Additional NRC Editing and Coding

- In preparing the database for MPR, NRC used variable names and response values provided by MPR in the annotated questionnaire (see Appendix A). NRC delivered to MPR a database in SAS format. In this database, any questions with no response were encoded with a SAS missing value code of '.'. Also, as part of the scanning procedure, NRC entered the SAS missing value of '.A' for any question with multiple responses where a single response was required.

3. Duplicate or Multiple Surveys

At this stage, NRC delivered to MPR a file containing one record for every beneficiary in the sample, plus additional records for every duplicate survey or multiple surveys received from any beneficiary. These duplicates and multiples were eliminated during record selection, and only the most complete questionnaire in the group was retained in the final database. Record selection is discussed in Section 3.C.

4. Removal of Sensitive or Confidential Information

The file that MPR received from NRC contained sensitive information such as social security number (SSN). Any confidential information was removed from the file. Each beneficiary had already been given a generic ID (MPRID) substitute during sample selection, the MPRID was retained as a means to uniquely identify each individual.

5. Initial Frequencies

MPR computed frequencies for all fields in the original data file. These tabulations served as a reference for the file in its original form and allowed comparison to final frequencies from previous years, helping to pinpoint problem areas that needed cleaning and editing. MPR examined these frequencies and cross-tabulations, using the results to adapt and modify the cleaning and editing specifications as necessary.

6. Data Cleaning and Recoding of Variables

MPR's plan for data quality for both versions of the child questionnaire is found in the 2004 Child Coding Scheme. It contains detailed instructions for all editing procedures used to correct data inconsistencies and errors. The Coding Scheme tables are found in Appendix D. These tables outline in detail the approach for recoding self-reported fields, doing range checks, logic checks, and skip pattern checks to insure that responses are consistent throughout the questionnaire. The Coding Scheme tables specify all possible original responses and any recoding, also indicating if backward coding or forward coding was used. Every skip pattern is assigned a note number shown in the annotated questionnaire (Appendix A). This note number defines the flag (for example, the Note 5 flag is N5) that is set to indicate the pattern of the original responses and any recoding. Thus, if the value of N5 is 2, the reader can look at line 2 in the Note 5 table for the original and recoded response values.

The SAS program implementing the Coding Scheme is found in Appendix E-2.

a. Skip Pattern Checks

At several points in the survey, the respondent should skip certain questions. If the response pattern is inconsistent with the skip pattern, each response in the series will be checked to determine which are most accurate, given the answers to other questions. Questions that are appropriately skipped were set to the SAS missing value of '.N'. Inconsistent responses, such as

answering questions that should be skipped or not answering questions that should be answered, were examined for patterns that could be resolved. Frequently, responses to subsequent questions provide the information needed to infer the response to a question that was left blank. 2004 Child Coding Scheme (see Appendix D) specifically addresses every skip pattern and shows the recoded values for variables within each pattern; we back coded and/or forward coded to ensure that all responses are consistent within a sequence.

b. Missing Values

NRC initially encoded any question with missing responses to a SAS missing value code of '.'. After verifying skip patterns, MPR recoded some of these responses to reflect valid skips (SAS missing value code of '.N'). The complete list of codes for types of missing values such as multiple responses, incomplete grids, and questions that should not have been answered is shown in Table 3.3.

Occasionally, missing questionnaire responses can be inferred by examining other responses. For example, if a respondent fails to answer Question 26 regarding appointments made by sponsors for their child for regular or routine care, but answers Question 27 about how often their child got an appointment for regular or routine care as soon as they wanted, we can reason that they did make an appointment in the past 12 months. Using this technique, we successfully recoded some missing questionnaire responses to legitimate responses.

c. Multiple Response Errors

If a respondent gives more than one answer to a question that should have only one answer, the response to that question was coded with a SAS missing value of '.A'.

Using an approach similar to that used for missing values, we examined other questionnaire responses in an attempt to infer what the respondent intended for those questions with multiple marks. For example, if there are multiple responses to Question 22 "In the last 12 months, did you call a doctor's office or clinic during regular office hours to get help or advice for your child?" and the response to Question 23 indicates that the respondent usually got help or advice they needed for their child, we assume that the response to Question 22 should have been yes.

7. Quality Assurance

MPR created an edit flag for each Coding Scheme table that indicates what, if any, edits were made in the cleaning and editing process. This logic was also used in previous years; variables such as N5 indicate exactly what pattern of the Coding Scheme was followed for a particular set of responses. These edit flags have a unique value for each set of original and recoded values, allowing us to match original values and recoded values for any particular sequence.

In order to validate the editing and cleaning process, MPR prepared cross-tabulations between the original variables and the recoded variables with the corresponding edit flag. This revealed any discrepancies that needed to be addressed. In addition, we compared unweighted frequencies of each variable with the frequencies from the original file to verify that each variable was accurately recoded. MPR reviewed these tabulations for each variable in the survey. If necessary, the earlier edit procedures were modified and the Coding Scheme program rerun. The resulting file was clean and ready for weighting adjustments and constructed variables.

C. RECORD SELECTION

To select final records, we first defined a code that classifies each sampled beneficiary as to his/her final response status. To determine this response status, we used postal delivery information

provided by NRC for each sampled beneficiary. This information is contained in the FLAG_FIN variable and is described in Table 3.4.

TABLE 3.4

FLAG_FIN VARIABLE

Value	Questionnaire Return Disposition	Reason/Explanation Given	Eligibility
1	Returned survey	Completed and returned	Eligible
2	Returned ineligible	Returned with at least one question marked and information that the beneficiary was ineligible	Ineligible
3	Returned blank	Information sent that beneficiary is temporarily ill or incapacitated	Eligible
4	Returned blank	Information sent that beneficiary is deceased	Ineligible
5	Returned blank	Information sent that beneficiary is incarcerated or permanently incapacitated	Ineligible
6	Returned blank	Information sent that beneficiary left military, or divorced after 1/31/03, or retired	Eligible
7	Returned blank	Information sent that beneficiary was not eligible on 1/31/04	Ineligible
8	Returned blank	Blank form accompanied by reason for not participating	Eligible
9	Returned blank	No reason given	----
10	No return	Temporarily ill or incapacitated. Information came in by phone	Eligible
11	No return	Active refuser. Information came in by phone	Eligible
12	No return	Deceased. Information came in by phone	Ineligible
13	No return	Incarcerated or permanently incapacitated. Information came in by phone	Ineligible
14	No return	Left military or divorced after 1/31/04, or retired. Information came in by phone	Eligible
15	No return	Not eligible on 1/31/04. Information came in by phone	Ineligible
16	No return	Other eligible. Information came in by phone	Eligible
17	No return	No reason	---
18	PND	No address remaining	---
19	PND	Address remaining at the close of field	---
20	Original Non-Locatable	No address at start of mailing	---
21	No return or returned blank	Written documentation declining participation, no reason given	Eligible
22	No return or returned blank	Hospitalized but no indication if temporary or permanent	---
23	Returned blank - deployed	Survey was returned blank along with information that the beneficiary was deployed.	Eligible
24	No return- deployed	Survey was not returned, beneficiary was deployed	Eligible
25	Deceased	Updating process identified beneficiary as deceased.	Ineligible
26	Ineligible	Updating process identified beneficiary as not eligible for Military Health System Plan	Ineligible

Using the above variables in Table 3.4, we classified all sampled beneficiaries into four groups:

- **Group 1**: Eligible, Questionnaire Returned. Beneficiaries who were eligible for the survey and returned a questionnaire with at least one question answered (FLAG_FIN = 1)
- **Group 2:** Eligible, Questionnaire Not Returned (or returned blank). Beneficiaries who did not complete a questionnaire but who were determined to be eligible for military health care on June 1, 2004, that is, not deceased, not incarcerated, and not permanently hospitalized (FLAG_FIN = 3, 6, 8, 10, 11, 14, 16, 21, 23, 24)
- **Group 3:** Ineligible Beneficiaries who were ineligible because of death, institutionalization, divorce, or no longer being in the MHS as of June 1, 2004 (FLAG_FIN = 2, 4, 5, 7, 12, 13, 15, 25, 26)
- **Group 4:** Eligibility Unknown. Beneficiaries who did not complete a questionnaire and for whom survey eligibility could not be determined (FLAG_FIN = 9, 17, 18, 19, 20, 22)

Group 1 was then divided into two subgroups according to the number of survey items completed (including legitimate skip responses):

- G1-1. Complete Questionnaire Returned
- G1-2. Incomplete Questionnaire Returned

G1-1 consists of eligible respondents who answered "enough" questions to be classified as having completed the questionnaire. G1-2 consists of eligible respondents who answered only a few questions. To determine if a questionnaire is complete, 23 key questions were adapted from the complete questionnaire rule for the CAHPS 3.0. The key questions are: 2, 3, 5, 13, 17, 22, 24, 26, 28, 29, 53, 68, 72, 74, 76, 78, 82, 103, 104, 106, 107, 108, and 110. If fourteen or more of these key items are completed, then the questionnaire can be counted as complete.

Group 3 was then divided into two subgroups according to how ineligible beneficiaries were identified:

- G3-1. Returned ineligible
- G3-2. Ineligible at time of STI address update

G3-1 consists of ineligible beneficiaries who responded to the survey request, but told us that they were ineligible. G3-2 consists of beneficiaries identified as ineligible during the updating process. Furthermore, we also subdivided Group 4 into the following:

- G4-1 for Locatable-blank return/no reason or no return/no reason (FLAG_FIN = 9, 17, 22)
- G4-2 for Nonlocatable-postal non-deliverable/no address, postal non-deliverable/had address, or original nonlocatable (FLAG_FIN = 18, 19, 20).

With this information, we can calculate the location rate (see Section 4.A).

With a code (FNSTATUS) for the final response/eligible status, we classified all sampled beneficiaries using the following values of FNSTATUS:

- 11 for G1-1
- 12 for G1-2
- 20 for Group 2
- 31 for G3-1

- 32 for G3-2
- 41 for G4-1
- 42 for G4-2

There were 620 duplicate questionnaires in the data set NRC delivered. All duplicates were classified into one of the above six groups. We then retained the one questionnaire for each beneficiary that had the most "valid" information for the usual record selection process. For example, if two returned questionnaires from the same beneficiary have FNSTATUS code values of 11, 12, 20, 41, or 42, we retained the questionnaire with the smaller value.If one of a pair of questionnaires belongs to Group 3 (FNSTATUS = 3, i.e., ineligible), then we regarded the questionnaire as being ineligible. However, if questionnaires from the same beneficiary have FNSTATUS code values of 31 and 32, we retained the value of 32.

Only beneficiaries with FNSTATUS = 11 were retained. All other records were dropped.

D. CONSTRUCTED VARIABLES

One of the most important aspects of database development is the formation of constructed variables and scale variables to support analysis. Constructed variables are formed when no single question in the survey defines the construct of interest. In Table 3.1 there is a list of all constructed variables for 2004. Each constructed variable is discussed in this section and the relevant piece of SAS code is shown. All SAS programs can be found in Appendix E.

1. Demographic Variables

a. Region (XTNEXREG)

This variable groups the CONUS regions into 4 regions: north, south, west, and overseas.

North contains regions 1, 2, and 5. South contains regions 3,4, and 6. West consists of regions 7, 8, 9, 10, 11, 12, and 16. Overseas is comprised of the remainder of the CONUS regions.

```
/* CREATE XTNEXREG. */
  IF REGSMPL IN (1,2,5) THEN XTNEXREG=1;
  ELSE IF REGSMPL IN (3,4,6) THEN XTNEXREG=2;
  ELSE IF REGSMPL IN (7,8,9,10,11,12,16) THEN XTNEXREG=3;
  ELSE IF REGSMPL IN (13,14,15) THEN XTNEXREG=4;
```

2. TRICARE Prime Enrollment and Insurance Coverage

a. TRICARE Prime Enrollment Status (XENRLLMT)

For reporting purposes, a person is considered enrolled in TRICARE Prime if the enrollment type (ENBGSMPL), based on DEERS data, indicates that they were enrolled at the time of data collection. The two categories for TRICARE Prime enrollment are as follows:

1 = Enrollees
2 = Not enrolled in TRICARE Prime

. = Unknown

```
/* XENRLLMT--ENROLLMENT STATUS */
IF ENBGSMPL IN ('01','02','03','05','06') THEN XENRLLMT = 1; /*   Enrolled  */
ELSE IF ENBGSMPL IN ('04','07') THEN XENRLLMT = 2;          /*   Not Enrolled */
```

b. TRICARE Prime Enrollment Status by Primary Care Manager (XENR_PCM)

This variable determines if a child has a civilian or a military primary care manager (PCM).

1 = Enrolled with a military PCM
2 = Enrolled with a civilian PCM
3 = Not enrolled

```
/* XENR_PCM--ENROLLMENT BY PCM TYPE */
IF ENBGSMPL IN ('01','03','06') THEN XENR_PCM=1;          /* 1=Enrolled  - mil PCM */
ELSE IF ENBGSMPL IN ('02','05') THEN XENR_PCM=2;      /* 2=Enrolled  - civ PCM */
ELSE IF ENBGSMPL IN ('04','07') THEN XENR_PCM=3;      /* 3=Not Enrolled       */
```

c. Most–Used Health Plan (XINS_COV)

The respondent's most–used health plan comes directly from Question 2. The three categories for this variable are as follows:

1 = TRICARE Prime
2 = TRICARE Standard/Extra (CHAMPUS)
3 = Other civilian health insurance or civilian HMO
. = Unknown

```
/* XINS_COV--INSURANCE COVERAGE */
IF C04002 = 1 THEN XINS_COV = 1;                    /* Prime */
ELSE IF C04002 = 3 THEN XINS_COV = 2;               /* Standard/Extra */
ELSE IF C04002 IN (5,6,7,8,9) THEN XINS_COV = 3;    /* Other Insurance */
```

d. Types of Coverage (KCIVINS)

A binary variable was created to indicate the types of insurance that respondents use:

- Is the respondent covered by Civilian insurance (KCIVINS)

This variable has the following values:

1 = Yes

2 = No

.= Unknown

```
/* KCIVINS--IS BENEFICIARY COVERED BY CIVILIAN INSURANCE */
 IF (C04004C=1 OR C04004D=1 OR C04004E=1 OR C04004G=1)
THEN KCIVINS=1;                                 /* YES  */
 ELSE KCIVINS=2;                                /* NO   */
```

e. Beneficiary group (XBNFGRP)

This variable is equal to the sampling variable BGCSMPL and has the following values:

1 = Active duty

2 = Family of active duty

3 = Family of retirees or survivors

.= Unknown

```
/* XBNFGRP-Beneficiary Group that excludes those 65 and over-
Active Duty and Family Members of Active Duty */
XBNFGRP=BGCSMPL;
```

3. Access to Care (KMILOFFC, KCIVOFFC, KBGPRB1, KBGPRB2)

Many of the survey questions on access relate directly to a TRICARE performance standard. The questions in the Section "Your Child's Healthcare in the Last 12 Months" of the questionnaire refer to all healthcare received in the last 12 months. For these questions, we constructed binary variables, separately for respondents who used military and civilian facilities the most, indicating whether the TRICARE standard was met. Table 3.5 presents those standards that were analyzed in the reports. The new variables have the following values:

1 = Standard was met

2 = Standard was not met

. = Missing information

TABLE 3.5

TRICARE STANDARDS FOR ACCESS

Access Measure	TRICARE Standard	Variable Name	Relevant Question
Waiting Room Wait	Within 15 minutes	KMILOFFC, KCIVOFFC	34

```
 /* KMILOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT MILITARY FACILITES
KCIVOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT CIVILIAN FACILITES */
IF C04053  = 1 THEN DO;                          /* Military */
  IF C04034  IN (1,2) THEN KMILOFFC = 1;             /* Yes */
  ELSE IF C04034  IN (3,4) THEN KMILOFFC = 2;        /* No  */
END;
  ELSE IF C04053  = 2 THEN DO;                     /* Civilian */
     IF C04034  IN (1,2) THEN KCIVOFFC = 1;        /* Yes */
     ELSE IF C04034  IN (3,4) THEN KCIVOFFC = 2;   /* No */
               END;
```

Question 18 asks how much of a problem, if any, it was to get a referral to a specialist. The responses to this question are regrouped by a binary variable KBGPRB1. KBGPRB1 looks at these two categories:

1 = Those who reported a "big problem"

2 = Those who reported not a "big problem"

. = Missing response

```
/* KBGPRB1--BIG PROBLEM GETTING REFERRALS TO SPECIALISTS */
   IF C04018 = 1 THEN KBGPRB1 = 1;                    /* YES */
   ELSE IF C04018  IN (2,3) THEN KBGPRB1 = 2;         /* NO  */
```

Similarly, variable KBGPRB2 was constructed. Question 31 asks about how much of a problem, if any, it was to get the care you or a doctor believed necessary. The responses to this question are regrouped by a binary variable KBGPRB2. KBGPRB2 looks at these two categories:

1 = Those who reported a "big problem"

2 = Those who reported not a "big problem"

. = Missing response

```
/* KBGPRB2--BIG PROBLEM GETTING NECESSARY CARE */
   IF C04031 = 1 THEN KBGPRB2 = 1;                    /* YES */
   ELSE IF C04031  IN (2,3) THEN KBGPRB2 = 2;         /* NO  */
```

4. Utilization

a. Outpatient Utilization (KMILOP, KCIVOP)

Question 29 contains the total number of outpatient visits. This is renamed to KMILOP or KCIVOP depending on the answer to Question 53. The new variables have the following values:

1 = no visits
2 = 1 visit
3 = 2 visits
4 = 3 visits
5 = 4 visits
6 = 5 to 9 visits
7 = 10 or more visits

```
/* KMILOP--OUTPATIENT VISITS TO MILITARY FACILITY
   KCIVOP--OUTPATIENT VISITS TO CIVILIAN FACILITY */
   IF C04053  = 1 THEN KMILOP=C04029;
   ELSE IF (C04053=. AND C04029=.) THEN KMILOP=.;
   ELSE KMILOP = 1 ;
   IF C04053  = 2 THEN KCIVOP=C04029;
   ELSE IF (C04053=. AND C04029=.) THEN KCIVOP=.;
   ELSE KCIVOP = 1 ;
```

5. Child Body Mass Index

a. Percentile for Child Body Mass Index (XBMIPCT)

The reported body mass index of children over age 24 months is assigned a percentile based on the 2000 CDC growth charts. The body mass index is equal to the child's weight in kilograms divided by the square of his or her height in meters. The program Create BMI.sas (Appendix E.4) first creates a dataset with the variables needed to call gc-calculate.sas (Appendix E.4). Gc-calculate calculates the percentiles for child body mass index (BMIPCT) based on the CDC growth charts. If a child is in the 70^{th} Percentile, this means compared to children of the same age and gender, 70 percent have a lower BMI. BMIPCT is renamed to XBMIPCT. Note: Qc-calculate.sas uses two variables, BMI and the child's age in months, not contained in the public use file.

b. Child Body Mass Index Category (XBMICAT)

First, certain observations are excluded as extreme height or weight outliers by comparison with CDC's growth charts. Then the variable OVER is defined by comparing BMIPCT to cutoff points identifying underweight and overweight children. It is renamed XBMICAT. This new variable has the following values:

1 = underweight
2 = at - risk
3 = normal
4 = underweight

```
IF exclude NE 2 THEN DO;
  if BMIPCT ge 95 then over = 4;
  else if 85 le BMIPCT lt 95 then over = 3;
  else if 5 lt BMIPCT lt 85 then over = 2;
  else if 0 le BMIPCT le 5 then over = 1;
END;
```

E. WEIGHTING PROCEDURES

Estimates based on the 2004 HCSDB must account for the survey's complex sample design and for the potential biasing effects due to nonresponse. As a part of sample selection, MPR constructed sampling weights (BWT) that reflect the differential selection probabilities used to sample beneficiaries across strata. Nonresponse can also lead to distortions of the respondent sample with respect to the total population of DoD health care beneficiaries. Adjustments were made to these sampling weights, BWT, to compensate for such distortions, using a weighting class method. These adjusted weights were also adjusted through the poststratification procedure to form the analysis weights, which we included in the final deliverable database. We also generated replicate weights for the final database so that users have the option of obtaining variance estimates with a replication method as well as the Taylor series method. This section presents these weighting procedures for the 2004 Child HCSDB.

1. Constructing the Sampling Weight

The sampling weight was constructed on the basis of the sample design. In the 2004 Child HCSDB, stratified sampling was used to select the samples that would receive the questionnaire. Sampling for the Child survey was independently executed within strata defined by combinations of the three domains: enrollment status groups; age groups; and geographic areas.

The sample was selected with differential probabilities of selection across strata. Sample sizes were driven by predetermined precision requirements. For further details of the 2004 child sample design, see the *2004 Health Care Survey of DoD Beneficiaries: HCSDB Child Sample Report*. Our first step in weighting was to construct sampling weights that reflect these unequal sampling rates. These sampling weights can be viewed as the number of population elements that each sampled beneficiary represents. The sampling weight was defined as the inverse of the beneficiary's selection probability or:

(1) $$W_s(h,i) = \frac{N(h)}{n(h)}$$

where:

$W_s(h,i)$ is the sampling weight for the i-th sampled beneficiary within the h-th stratum,
$N(h)$ is the total number of beneficiaries in the h-th stratum, and

$n(h)$ is the number of sampled beneficiaries from stratum h.

The sum of the sampling weights over selections from the h-th stratum equals the total population size of the h-th stratum or $N(h)$.

2. Adjustment for Total Nonresponse

Survey estimates obtained from respondent data only can be biased with respect to describing characteristics of the total population (Lessler and Kalsbeek 1992). To reduce this bias, we developed procedures to deal with the problems caused by nonresponse. Two types of nonresponse were associated with the 2004 Child HCSDB:

- Unit or total nonresponse occurs when a sampled beneficiary did not respond to the survey questionnaire (e.g., refusals, no questionnaire returned, blank questionnaire returned, bad address).
- Item nonresponse occurs when a question that should have been answered is not answered (e.g., refusal to answer, no response).

With high item response rates observed in previous Adult HCSDB surveys, statistical imputation was not used to compensate for item nonresponse in the 2004 Child HCSDB. To account for total nonresponse, we implemented a weighting class adjustment followed by a poststratification adjustment.

Weighting class adjustments were made by partitioning the sample into groups, called *weighting classes*, and then adjusting the weights of respondents within each class so that they sum to the weight total for nonrespondents and respondents from that class. Implicit in the weighting class adjustment is the assumption that — had the nonrespondents responded — their responses would have been distributed in the same way as the responses of the other respondents in their class.

The 2004 Child HCSDB weighting classes were defined on the basis of the stratification variables: TRICARE Prime enrollment status, age group, and geographic area. To avoid excessive variance inflation, we required that each weighting class have at least 20 eligible respondents and that the adjustment factor not exceed 4.

Nonresponse adjustment factors for the 2004 Child HCSDB were calculated in two steps. First, we adjusted the sampling weights to account for sampled beneficiaries for whom eligibility status could not be determined. Sampled beneficiaries were then grouped as follows according to their response status d:

d=1 Eligible — completed questionnaire returned (FNSTATUS = 11)

d=2 Eligible — incomplete or no questionnaire returned (FNSTATUS = 12 or 20)

d=3 Ineligible — deceased, incarcerated, or permanently incapacitated beneficiary (FNSTATUS = 31)

d=4 Eligibility unknown — no questionnaire or eligibility data (FNSTATUS = 41 or 42)

d=5 Ineligible — Ineligible at time of STI address update (FNSTATUS = 32)

Within weighting class c, the weights of the d=4 nonrespondents with unknown eligibility were redistributed to the cases for which eligibility was known (d=1,2,3), using an adjustment factor $A_{wc1}(c,d)$ that was defined to be zero for d=4 and defined to be one for d=5 and defined as:

(2) $$A_{wc1}(c,d) = \frac{\sum_{i \in S(c)} W_s(c,i)}{\sum_{i \in S(c)} I_1(i) W_s(c,i) + \sum_{i \in S(c)} I_2(i) W_s(c,i) + \sum_{i \in S(c)} I_3 W_s(c,i)}$$ for d = 1, 2, 3

where:

$A_{wc1}(c,d)$ is the eligibility-status adjustment factor for weighting class c and response status code d,

$I_d(i)$ is the indicator function that has a value of 1 if sampled unit i has a response status code of d and 0 otherwise,

$S(c)$ is the set of sample members belonging to weighting class c, and

$W_s(c,i)$ is the sampling weight (BWT) for the i-th sample beneficiary from weighting class c before adjustment.

The adjustment $A_{wc1}(c,d)$ was then applied to the sampling weights to obtain the eligibility-status adjusted weight. Beneficiaries in weighting class c with response status code of d were assigned the eligibility-status adjusted weight:

(3) $$W_{wc1}(c,d,i) = A_{wc1}(c,d)\, W_s(c,i)$$

Note that since d=5 cases have an adjustment factor of one, they have an adjusted weight equal to the sampling weight. Moreover, note that since d=4 cases have adjustment factors of zero, they also have adjusted weights of zero.

The next step in weighting was to adjust for the loss of completed questionnaires from beneficiaries known to be eligible. For this adjustment, the weighting class c from the previous step was again partitioned into groups according to the beneficiary's response status code d. Within weighting class c, the weights of the d=2 nonresponding eligibles were redistributed to the responding eligibles d=1, using an adjustment factor $A_{wc2}(c,d)$ that was defined to be zero for d=2,4. For Group 1 (d=1), the questionnaire-completion adjustment or $A_{wc2}(c,1)$ factor for class c was computed as:

(4) $$A_{wc2}(c,1) = \frac{\sum_{i \in S(c)} I_1(i) W_{wc1}(c,i) + \sum_{i \in S(c)} I_2(i) W_{wc1}(c,i)}{\sum_{i \in S(c)} I_1(i) W_{wc1}(c,i)}$$

By definition, all d=3 and d=5 ineligible beneficiaries "respond," so the d=3 and d=5adjustment factor is 1, or $A_{wc2}(c,3)$=1. The questionnaire-completion adjusted weight was calculated as the product of the questionnaire-completion adjustment $A_{wc2}(c,d)$ and the previous eligibility-status adjusted weight $W_{wc1}(c,d,i)$, or:

(5) $$W_{wc2}(c,d,i) = A_{wc2}(c,d)\, W_{wc1}(c,d,i)$$

As a result of this step, all nonrespondents (d=2,4) had questionnaire-completion adjusted weights of zero, while the weight for ineligible cases (d=3,5) remained unchanged.

3. Poststratification

To minimize selecting more than one child per household, we assigned all children from a household to the same sampling stratum. Therefore, we needed to compensate for the resulting discrepancy in population totals by using poststratification for the 2004 HCSDB. Poststratification

adjustments forced the adjusted weight totals to the DEERS population totals for the specified population groups that formed the *poststrata*. We used DEERS data as of March 31, 2004 as poststratification values for certain variables. Like stratum variables, poststratum variables are also a combination of three key domain variables: enrollment group, age group, and geographic area (super regions). Construction of age and super region groups is the same as in sampling strata variables except for the reference date.

After creating the cross-classification of the three poststrata variables, enrollment group, age group, and super regions, an additional usual poststratification adjustment was implemented. To illustrate the use of poststratification, let *g* index poststrata, where *g* = 1, 2, ..., *G*. The poststratification adjustment factor for the *g*-th poststrata was defined as:

(6) $$A_{ps}(g) = \frac{N(g)}{\sum_{h,i \in S(g)} W_{wc2}(h,i)}$$

where:

N(*g*) is the total number of beneficiaries in the DEERS frame associated with the *g*-th post-stratum, and

S(*g*) is the set of sample records that are found in the *g*-th poststratum.

The poststratified adjusted weight for the *i*-th sample record from the *h*-th design stratum and the *g*-th poststratum was then calculated as:

(7) $$W_{ps}(g,h,i) = A_{ps}(g)\, W_{wc2}(h,i)$$

When summed over members of poststratum *g*, the poststratified weights now total *N*(*g*). This poststratified weight is the final analysis weight used for all reporting and analysis.

4. Calculation of Jackknife Replicates

We constructed the 60 jackknife replicates as follows. First, the entire file of sampled beneficiaries was sorted according to stratification variables. Next, 60 mutually exclusive and exhaustive systematic sub-samples of the full sample was identified in the sorted file.[5] A jackknife replicate was then obtained by dropping one subsample from the full sample. By dropping each subsample in turn, the same number of different jackknife replicates as subsamples was defined. The entire weighting process as applied to the full sample was then applied separately to each of the jackknife replicates to produce a set of replicate weights for each record. A series of jackknife replicate weights (WRWT01-WRWT60) was then attached to each beneficiary record in the final database. Given jackknife replicate weights, WesVarPC® (Brick et al. 1996) can be used to construct jackknife replication variance estimates.

[5]With 60 replicates, further statistical analyses such as confidence intervals and hypothesis tests can be based on approximate normal distribution. Inferences with finite replicate number *k* are based on the student *t* distribution with *k*-1 degrees of freedom. Thus, with 60 replicates, normal approximation can be used in constructing confidence intervals or hypothesis testing.

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Chapter
4

Analysis

This chapter explains how the Child HCSDB variables were processed during the analysis phase of the project. It covers the procedure for calculating response rates, the method for estimating the variance of the statistics, significance tests, demographic adjustment, development of the dependent and independent variables for the analysis, and report production.

This year's results are being presented in an electronic format.

A. RESPONSE RATES

In this section, we present the procedures for response rate calculation along with a brief analysis of response rates for domains of interest. Response rates for the 2004 Child HCSDB were calculated in the same way as they were calculated for the 2004 Adult HCSDB. The procedure is based on the guidelines established by the Council of American Survey Research Organizations (CASRO 1982) in defining a response rate.

1. Definition of Response Rates

In calculating response rates and related measures, we considered two different rates: *unweighted* and *weighted*. The unweighted version of the response rate represents the counted proportion of respondents among all sampled units, and the weighted version indicates the estimated proportion of respondents among all population units. When sampling rates across all strata are equal, these two approaches give the same result. However, the 2004 HCSDB used different sampling rates across strata. So, it is useful to show both "unweighted" and "weighted" response rates. We calculated these two response rates in the same way. As presented in Chapter 3.C, all sampled beneficiaries were completely classified into these four main (six detailed) groups: Group 1 (G1-1 and G1-2), Group 2, Group 3, and Group 4 (G4-1 and G4-2):

- Group 1 (G1-1): eligible and complete questionnaire returned;
- Group 1 (G1-2): eligible and incomplete questionnaire returned;
- Group 2: eligible and questionnaire not returned;
- Group 3 (G3-1): ineligible
- Group 3 (G3-2): ineligible
- Group 4 (G4-1): eligibility unknown and locatable; and
- Group 4 (G4-2): eligibility unknown and unlocatable.

The unweighted counts reflect the number of sampled cases (n_i for Group i, where i =1,2,3,4), and the weighted counts reflect the estimated population size[1] ($\hat{N}_i$ for Group i, where i =1,2,3,4) for the four main response categories.

[1]The weighted sum of sampled units can be regarded as an estimated population size. The base weight (BWT) was used in calculating weighted counts, where BWT is the inverse of selection probability.

These weighted and unweighted counts were also calculated for the subgroups G1-1, G1-2, G3-1, G3-2, G4-1, and G4-2, where we denote the unweighted counts by $n_{1,1}$, $n_{1,2}$, $n_{3,1}$, $n_{3,2}$, $n_{4,1}$, and $n_{4,2}$, and the weighted counts by $\hat{N}_{1,1}$, $\hat{N}_{1,2}$, $\hat{N}_{3,1}$, $\hat{N}_{3,2}$, $\hat{N}_{4,1}$, and $\hat{N}_{4,2}$. With these values, we calculated response rates as follows. Response rates can be partitioned into two measures: the location rate and the completion rate. To calculate the location rate, we first estimated the number of Group 4 "located" beneficiaries who were expected to be eligible for the survey:

(1)

$$l = \left(\frac{n_1 + n_2}{n_1 + n_2 + n_{3,1}} \right) n_{4,1} \qquad \text{and} \qquad l_w = \left(\frac{\hat{N}_1 + \hat{N}_2}{\hat{N}_1 + \hat{N}_2 + \hat{N}_{3,1}} \right) \hat{N}_{4,1}$$

where l and l_w are unweighted and weighted estimates of the number of "located" beneficiaries among Group 4. Then, the unweighted and weighted "location rates" are defined by:

(2)

$$LR = \frac{n_1 + n_2 + l}{n_1 + n_2 + n_4 \left(\frac{n_1 + n_2}{n_1 + n_2 + n_{3,1}} \right)} \qquad \text{and} \qquad LR_w = \frac{\hat{N}_1 + \hat{N}_2 + l}{\hat{N}_1 + \hat{N}_2 + \hat{N}_4 \left(\frac{\hat{N}_1 + \hat{N}_2}{\hat{N}_1 + \hat{N}_2 + \hat{N}_{3,1}} \right)}.$$

And the corresponding unweighted and weighted "completion rates" are defined by:

(3)

$$CR = \frac{n_{1,1}}{n_1 + n_2 + l} \qquad \text{and} \qquad CR_w = \frac{\hat{N}_{1,1}}{\hat{N}_1 + \hat{N}_2 + l_w}.$$

The final response rates can be obtained by multiplying the location rate in Equation (2) by the completion rate in Equation (3).

(4)

$$FRR = LRxCR \; and \; FRR_w = LR_w xCR_w$$

In the definitions in Equations (1) through (4), the subscript "*w*" indicates that all calculations involve weighted counts. The method that we used to calculate response rates is consistent with the CASRO guidelines.

2. Reporting

We examined response rates to identify patterns across different domains or characteristics. While analysts prefer weighted rates that reflect the estimated proportion of respondents among all population beneficiaries, operational staff are often interested in getting unweighted measures. All tables include unweighted and weighted values under columns headed "Unweighted" and "Weighted", respectively. In the following, we focus on discussing unweighted response rates for

domains of interest. Table 4.1 includes response rates for the 2004 Child HCSDB as a whole, by enrollment status by age groups, and by super regions.

- Overall: The overall unweighted response rate for the 2004 Child HCSDB was about 31 percent (which is found in Table 4.1 in the row of "Overall" under the column of "RR" in "Unweighted").
- Enrollment status: Nonenrollees had an unweighted response rate of 29 percent, which is less than the rate for children enrolled in Prime (33 percent).
- Age group: Unweighted response rates according to age groups are: Sponsors of children younger than 6 years old - 29 percent; between 6 and 12 years old - 31 percent; between 13 and 17 years old - 34 percent
- Geographic area: Unweighted response rates according to region are: New regions – 33 percent; mature regions – 29 percent; and other regions – 32 percent.

TABLE 4.1

UNWEIGHTED AND WEIGHTED RESPONSE RATES OVERALL, BY ENROLLMENT GROUP, BY AGE GROUP, AND SUPER REGION

		RR (unweighted) (%)	**RR_W (weighted)** (%)
Overall		31.3	32.1
Enrollment Group	Enrolled	33.4	33.2
	Not enrolled	28.9	29.6
Age Group	Younger than 6 years old	28.8	30.0
	Between 6 and 12 years old	30.7	31.5
	Between 13 and 17 years old	34.3	34.8
Super Region	New Regions (regions 1, 2, 5)	32.7	33.0
	Mature regions (regions 6, 9-12 and 16)	29.4	30.5
	Other regions (regions 3, 4, 7, 8)	31.7	32.5

B. VARIANCE ESTIMATION

To calculate the standard errors (the squared roots of variances) of estimates for the 2004 HCSDB analyses, we used SUDAAN™ (Shah et al. 1996) and the Taylor series linearization method. For analysts who prefer a replication method, 60 replicate weights for jackknife replication are provided in the public use file. Here we describe variance estimation methods for the Taylor series linearization method and the jackknife replication method.

1. Taylor Series Linearization

MPR uses Taylor series linearization to produce standard errors for the estimates from the 2004 HCSDB for adults and children. For most sample designs, including the 2004 HCSDB, design-based variance estimates for linear estimators of totals and means can be obtained with explicit formulas. Estimators for nonlinear parameters such as ratios do not have exact expressions for the variance. The Taylor series linearization method approximates the variance of a nonlinear estimator with the variances of the linear terms from the Taylor series expansion for the estimator (Woodruff 1971). To calculate variance estimates based on the Taylor series linearization method, given HCSDB's stratified sampling design, we need to identify the stratum as well as the final analysis weight for each data record. We included these variables on the final database. For variance estimation, we use the general purpose statistical software package SUDAAN to produce Taylor series variance estimates. SUDAAN is the most widely used of the publicly available software packages based on the Taylor series linearization method. In SUDAAN, the user specifies the sampling design and includes variables recording stratum and the analysis weight for each record. MPR uses SAS to make camera-ready tables for numerical results from SUDAAN. There is no restriction to the number of strata in SUDAAN, so stratification effects can be incorporated in calculating standard errors.

Some of the reported estimates are composite scale scores that are linear functions of individual estimates. The sampling variance for these scale estimates can be directly obtained from the usual design-based variance estimation formula by incorporating the covariance terms among individual items within the scale.

(5)

$$\text{Let } \bar{y} = \frac{\sum_{h=1}^{L}\sum_{i=1}^{n_h} W_{hi} Y_{hi}}{\sum_{h}\sum_{i} W_{hi}}$$

denote an estimator of a composite scale where individual composite measure for beneficiary (*h*, *i*) consists of *r* items is thus denoted as:

(6)

$$Y_{hi} = \sum_{j=1}^{r} X_{hi,j} / r \quad .$$

Then, a customary variance estimator of $\bar{y}$ is the sum of the item variances and covariances among item estimates:

(7)

$$v(\bar{y}) = \frac{1}{r^2}\left\{\sum_{j=1}^{r} v_j + \sum_{j \neq j'} \operatorname{cov}(\bar{x}_j, \bar{x}_{j'})\right\} \quad ,$$

where v_j is a variance estimator of $\bar{x}_j$.

All of the variance components can be obtained from the usual survey specific software such as SUDAAN and WesVarPC, which are described above.

2. Jackknife Replication

Jackknife replicate weights can be used to calculate the standard errors of estimates. An estimate of a characteristic of interest is calculated (with the same formula as the full sample estimate) using each set of replicate weights; these replicate estimates are used to derive the variance of the full sample statistic.

a. Calculation of Jackknife Replicates

A series of jackknife replicate weights are calculated and attached to each beneficiary record in the database. In jackknife replication, a prescribed number of replicates are generated by deleting selected cases from the full sample. Given jackknife replicate weights, WesVarPC® (Brick et al. 1996) can be used to produce variance estimates. WesVarPC allows jackknife variance estimation for two primary sampling units per stratum up to 100 strata, or up to 256 replicates without stratification. The 2004 HCSDB for children involves 27 strata. To use WesVarPC, we must modify the actual design to create appropriate replicates. The two options for doing this are to (1) form fewer than 256 replicates by ignoring stratification or (2) form replicates by assigning each unit to one of two pseudo primary sampling units (PSUs) within each of the 27 strata. For either option, the entire weighting process as described in the previous sections must be applied for each jackknife replicate.

To be consistent with the adult survey, we use option 1 to construct the jackknife replicates as follows. First, the entire file of sampled beneficiaries is sorted in sample selection order in which stratification variables are only used in the sorting process. Next, 60 mutually exclusive and exhaustive systematic subsamples[1] of the full sample are identified in the sorted file. A jackknife replicate is then obtained by dropping one subsample from the full sample. As each subsample is dropped in turn, the same number of different jackknife replicates as subsamples is defined. The entire weighting process as applied to the full sample is then applied separately to each of the jackknife replicates to produce a set of replicate weights for each record. Then, the series of jackknife replicate weights (WRWT01 – WRWT60) is attached to the final data in order to construct jackknife replication variance estimates.

b. Software for Jackknife Replication

The jackknife variance of the full sample statistic of interest is estimated from the variability among the replicated estimates. When the replicate weights are produced according to the above procedure, jackknife replicate standard errors can be produced using custom written software or publicly available statistical software. For instance, WesVarPC is a popular software package that calculates standard errors based on replication methods. It produces standard errors for functions

[1]With 60 replicates, further statistical analyses such as confidence intervals and hypothesis tests can be based on an approximate normal distribution. Inferences with finite replicate numbers *k* are based on the student *t* distribution with *k*-1 degrees of freedom. Thus, with 60 replicates, normal approximation can be used in constructing confidence intervals or hypothesis testing.

of survey estimates such as differences and ratios as well as simple estimates such as mean, proportion, and totals. Additional details about the jackknife replication approach are given in Wolter (1985). Like other replication methods, the jackknife variance estimation can be easily implemented for any form of estimate without further algebraic work.

C. SIGNIFICANCE TESTS

In the child TRICARE Consumer Report statistical testing is done to show whether values in the report cards are statistically different from external benchmarks.

The null hypothesis for this significance test is that a mean value is essentially equal to the benchmark, and the alternative is that a mean value is different from the benchmark. That is, we are testing:

$$H_0: \mu_1 = \mu_2 \quad \text{vs. } H_a: \mu_1 \neq \mu_2$$

For instance, μ_1 might represent the characteristic of interest for mature regions while μ_2 might represent the benchmark.

With large sample sizes, the estimator $\overline{y_1} - \overline{y_2}$ is approximately distributed as a normal distribution with mean zero and variance $\sigma^2_{\overline{y_1}-\overline{y_2}}$ under the null hypothesis. In testing the hypothesis, a test Statistic T is thus calculated as:

$$T = \frac{\overline{y_1} - \overline{y_2}}{\hat{\sigma}_{\overline{y_1}-\overline{y_2}}}.$$

With $\alpha = 0.05$, the null hypothesis should be rejected if $|T| > 1.96$. The denominator of T, the standard error of $\overline{y_1} - \overline{y_2}$, can be calculated as the square root of the variance estimator $\sigma^2_{\overline{y_1}-\overline{y_2}}$:

$$\hat{\sigma}^2_{\overline{y_1}-\overline{y_2}} = \text{var}(\overline{y_1}) + \text{var}(\overline{y_2}) - 2\,\text{cov}(\overline{y_1}, \overline{y_2}).$$

If $\overline{y_1}$ and $\overline{y_2}$ are independent, then the covariance term equals zero and thus the variance estimator can be easily obtained as the sum of two individual variance estimators. With an external benchmark, the covariance can be assumed to be zero.

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APPENDIX A

ANNOTATED QUESTIONNAIRE

RCS: DD-HA(A) 1942
Expires: 25 July 2006

Health Care Survey of DoD Beneficiaries

Child Questionnaire

July 2004

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SURVEY INSTRUCTIONS

Answer all the questions by checking the circle to the left of your answer. You are sometimes told to skip over some questions in this survey. When this happens you will see a note that tells you what question to answer next, like this:

○ Yes **Go to Question 1**
○ No

Please return the completed questionnaire in the enclosed postage-paid envelope within ***seven days***. If you have misplaced the envelope, our address is:

Office of the Assistant Secretary of Defense (Health Affairs)
c/o Survey Processing Center
PO Box 82660
Lincoln, NE 68501-9462

According to the Privacy Act of 1974 (Public Law 93-579), the Department of Defense is required to inform you of the purposes and use of this survey. Please read it carefully.

Authority: 10 U.S.C., Chapter 55, Section 572, Public Law 102-484, E.O. 9397.

Purpose: This survey helps health policy makers gauge beneficiary satisfaction with the current military healthcare system and provides valuable input from beneficiaries that will be used to improve the Military Health System.

Routine Uses: None

Disclosure: Voluntary. Failure to respond will not result in any penalty to the respondent. However, maximum participation is encouraged so that data will be as complete and representative as possible.

0O7ZTC2N
40683792 4176

----------SURVEY STARTS HERE----------

Please answer the questions for the child whose name appears on the envelope. Please do not answer for any other children.

1. Are you an adult responsible for the child listed on the envelope?

C04001

1 ○ Yes → Go to Question 2
2 ○ No **Please give this questionnaire to a person responsible for that child.**

2. Which health plan did you use for all or most of your child's health care in the last 12 months? MARK ONLY ONE.

C04002

1 ○ TRICARE Prime
3 ○ TRICARE Extra/Standard (CHAMPUS)
5 ○ Federal Employees Health Benefit Program (FEHBP)
6 ○ Medicaid
7 ○ A civilian HMO (such as Kaiser)
8 ○ Other civilian health insurance (such as Blue Cross)
9 ○ Uniform Services Family Health Plan (USFHP)
-5 ○ Not sure
-6 ○ My child did not use any health plan in the last 12 months.

For the remainder of this questionnaire, the term health plan refers to the plan you marked in Question 2.

3. In the last 12 months, how many months <u>in a row</u> was your child enrolled in this health plan?

C04003

2 ○ Less than 2 months
3 ○ 2-6 months
4 ○ 7-12 months
-6 ○ Not enrolled in a health plan in the last 12 months.

4. By which of the following healthcare plans is your child currently covered? MARK ALL THAT APPLY.

C04004

A ○ TRICARE Prime
B ○ TRICARE Extra/Standard (CHAMPUS)
C ○ A civilian HMO (such as Kaiser)
D ○ Other civilian insurance (such as Blue Cross)
E ○ Medicaid
F ○ Uniform Services Family Health Plan (USFHP)
G ○ Federal Employees Health Benefit Program (FEHBP)
H ○ My child did not use any health plan in the last 12 months
I ○ Not sure

-YOUR CHILD'S PERSONAL DOCTOR OR NURSE-

The next questions ask you about <u>your child's</u> health care. <u>Do not</u> include care your child got when he or she stayed overnight in a hospital. <u>Do not</u> include the times your child went for dental care visits.

5. A <u>personal doctor or nurse</u> is the health provider who knows your child best. This can be a general doctor, a specialist doctor, a nurse practitioner, or a physician assistant.

Do you have one person you think of as your child's personal doctor or nurse? If your child has more than one personal doctor or nurse, choose the person your child sees most often.

C04005

See Note 1

1 ○ Yes
2 ○ No → Go to Question 8

6. **Using any number from 0 to 10 where 0 is the worst personal doctor or nurse possible and 10 is the best personal doctor or nurse possible, what number would you use to rate your child's personal doctor or nurse?**

C04006
See Note 1

0 ○ 0 Worst personal doctor or nurse possible
1 ○ 1
2 ○ 2
3 ○ 3
4 ○ 4
5 ○ 5
6 ○ 6
7 ○ 7
8 ○ 8
9 ○ 9
10 ○ 10 Best personal doctor or nurse possible
-6 ○ My child doesn't have a personal doctor or nurse.

7. **Did you have the same personal doctor or nurse before you joined this health plan?**

C04007
See Note 1 and 2

1 ○ Yes → Go to Question 9
2 ○ No

8. **Since you joined your health plan, how much of a problem, if any, was it to get a personal doctor or nurse you are happy with?**

C04008
See Note 2

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem

9. **In the last 12 months, did your child's personal doctor or nurse talk with you about how your child is feeling, growing or behaving?**

C04009

1 ○ Yes
2 ○ No

10. **Does your child have any medical, behavioral or other health conditions that have lasted for more than 3 months?**

C04010
See Note 3

1 ○ Yes
2 ○ No → Go to Question 13

11. **Does your child's personal doctor or nurse understand how these medical, behavioral or other health conditions affect your child's day-to-day life?**

C04011
See Note 3

1 ○ Yes
2 ○ No

12. **Does your child's personal doctor or nurse understand how your child's medical, behavioral or other health conditions affect your family's day-to-day life?**

C04012
See Note 3

1 ○ Yes
2 ○ No

13. **For members of TRICARE Prime, the primary point of contact regarding your child's health is called a primary care manager or PCM. This may be the same person as your child's personal doctor or nurse. Does your child have a TRICARE primary care manager?**

C04013
See Note 4

1 ○ Yes → Go to Question 14
2 ○ No → Go to Question 17
-5 ○ I don't know → Go to Question 17
-6 ○ My child is not enrolled in TRICARE Prime. → Go to Question 17

14. **Do you know the name of your child's TRICARE Prime primary care manager?**

C04014
See Note 4

1 ○ Yes
2 ○ No
-6 ○ My child doesn't have a TRICARE primary care manager. → Go to Question 17

15. **In the last 12 months, how much of a problem was it for your child to see his or her TRICARE primary care manager?**

C04015
See Note 4

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ My child doesn't have a TRICARE primary care manager. → Go to Question 17

16. Is your child's TRICARE Prime primary care manager (PCM) based in a military or civilian facility?

1 ○ A primary care manager based at a military facility
2 ○ A primary care manager based at a civilian facility
-5 ○ Not sure
-6 ○ Not a member of TRICARE Prime

C04016 | See Note 4

--GETTING HEALTHCARE FROM A SPECIALIST--

When you answer the next questions, do not include dental visits.

17. Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and others who specialize in one area of health care.

In the last 12 months, did you or a doctor think your child needed to see a specialist?

C04017 | See Note 5

1 ○ Yes
2 ○ No → Go to Question 19

18. In the last 12 months, how much of a problem, if any, was it to see a specialist that your child needed to see?

C04018 | See Note 5

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ My child did not see a specialist in the last 12 months.

19. In the last 12 months, did your child see a specialist?

C04019 | See Note 6

1 ○ Yes
2 ○ No → Go to Question 22

20. We want to know your rating of the specialist your child saw most often in the last 12 months. Using any number from 0 to 10 where 0 is the worst specialist possible and 10 is the best specialist possible, what number would you use to rate your child's specialist?

C04020 | See Note 6

0 ○ 0 Worst specialist possible
1 ○ 1
2 ○ 2
3 ○ 3
4 ○ 4
5 ○ 5
6 ○ 6
7 ○ 7
8 ○ 8
9 ○ 9
10 ○ 10 Best specialist possible
-6 ○ My child didn't see a specialist in the last 12 months.

21. In the last 12 months, was the specialist your child saw most often the same doctor as your child's personal doctor?

C04021 | See Note 6

1 ○ Yes
2 ○ No
-6 ○ My child doesn't have a personal doctor or didn't see a specialist in the last 12 months.

YOUR CHILD'S HEALTH CARE IN THE LAST 12 MONTHS

A health provider could be a general doctor, a specialist doctor, a nurse practitioner, a physician assistant, a nurse, or anyone else your child would see for health care.

22. In the last 12 months, did you call a doctor's office or clinic during regular office hours to get help or advice for your child?

C04022 | See Note 7

1 ○ Yes
2 ○ No → Go to Question 24

23. In the last 12 months, when you called during regular office hours, how often did you get the help or advice you needed for your child?

C04023

See Note 7

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ I didn't call for help or advice for my child during regular office hours in the last 12 months.

24. In the last 12 months, did your child have an illness, injury or condition that needed care right away in a clinic, emergency room or doctor's office?

C04024

See Note 8

1 ○ Yes
2 ○ No → Go to Question 26

25. In the last 12 months, when your child needed care right away for an illness, injury or condition, how often did your child get care as soon as you wanted?

C04025

See Note 8

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child didn't need care right away for an illness or injury in the last 12 months.

26. A health provider could be a general doctor, a specialist doctor, a nurse practitioner, a physician assistant, a nurse, or anyone else your child would see for health care.

In the last 12 months, not counting the times you needed health care right away, did you make any appointments for your child with a doctor or other health provider for health care?

C04026

See Note 9

1 ○ Yes
2 ○ No → Go to Question 28

27. In the last 12 months, not counting the times you needed health care right away, how often did your child get an appointment for health care as soon as you wanted?

C04027

See Note 9

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child didn't need an appointment in the last 12 months

28. In the last 12 months, how many times did your child go to an emergency room?

C04028

1 ○ None
2 ○ 1
3 ○ 2
4 ○ 3
5 ○ 4
6 ○ 5 to 9
7 ○ 10 or more

29. In the last 12 months (not counting times your child went to an emergency room), how many times did your child go to a doctor's office or clinic?

C04029

See Note 10

1 ○ None → Go to Question 54
2 ○ 1
3 ○ 2
4 ○ 3
5 ○ 4
6 ○ 5-9
7 ○ 10 or more

30. In the last 12 months, did you or a doctor believe your child needed any care, tests, or treatment?

C04030

See Note 10 and 11

1 ○ Yes
2 ○ No → Go to Question 32

31. In the last 12 months, how much of a problem, if any, was it to get the care, tests, or treatment you or a doctor believed necessary?

C04031

See Note 10 and 11

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ My child had no visits in the last 12 months.

32. In the last 12 months, did you need approval from your child's health plan for any care, tests, or treatment?

C04032

See Note 10 and 12

1 ○ Yes
2 ○ No → Go to Question 34

33. In the last 12 months, how much of a problem, if any, were delays in your child's health care while you waited for approval from your child's health plan?

C04033

See Note 10 and 12

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ My child had no visits in the last 12 months.

34. In the last 12 months, how often was your child taken to the exam room within 15 minutes of his or her appointment?

C04034

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

35. In the last 12 months, how often did office staff at your child's doctor's office or clinic treat you and your child with courtesy and respect?

C04035

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

36. In the last 12 months, how often were office staff at your child's doctor's office or clinic as helpful as you thought they should be?

C04036

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

37. In the last 12 months, how often did your child's doctors or other health providers listen carefully to you?

C04037

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

38. In the last 12 months, how often did your child's doctors or other health providers explain things in a way you could understand?

C04038

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

39. In the last 12 months, how often did your child's doctors or other health providers show respect for what you had to say?

C04039

See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-6 ○ My child had no visits in the last 12 months

40. Is your child able to talk with doctors about his or her health care?

C04040

See Note 10 and 13

1 ○ Yes
2 ○ No → Go to Question 42

41. In the last 12 months, how often did doctors or other health providers explain things in a way your child could understand?

C04041
See Note 10 and 13

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-5 ○ Don't Know
-6 ○ My child had no visits in the last 12 months or my child is not old enough to talk with doctors.

42. In the last 12 months, how often did doctors or other health providers spend enough time with your child?

C04042
See Note 10

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-5 ○ Don't Know
-6 ○ My child had no visits in the last 12 months

43. In the last 12 months, did you have any questions or concerns about your child's health or health care?

C04043
See Note 10 and 14

1 ○ Yes
2 ○ No → Go to Question 47

44. In the last 12 months, how often did your child's doctors or other health providers make it easy for you to discuss your questions or concerns?

C04044
See Note 10 and 14

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

45. In the last 12 months, how often did you get the specific information you needed from your child's doctors or other health providers?

C04045
See Note 10 and 14

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

46. In the last 12 months, how often did you have your questions answered by your child's doctors or other health providers?

C04046
See Note 10 and 14

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

We want to know how you, your child's doctors and other health providers make decisions about your child's health care.

47. In the last 12 months, were any decisions made about your child's health care?

C04047
See Note 10 and 15

1 ○ Yes
2 ○ No → Go to Question 52

48. When decisions were made in the last 12 months, how often did your child's doctors or other health providers offer you choices about your child's health care?

C04048
See Note 10 and 15

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

49. When decisions were made in the last 12 months, how often did your child's doctors or other health providers discuss with you the good and bad things about each of the different choices for your child's health care?

C04049
See Note 10 and 15

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

50. When decisions were made in the last 12 months, how often did your child's doctors or other health providers ask you to tell them what choices you prefer?

C04050
See Note 10 and 15

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

51. When decisions were made in the last 12 months, how often did your child's doctors or other health providers involve you as much as you wanted?

C04051
See Note 10 and 15

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always

52. Using any number from 0 to 10 where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your child's health care in the last 12 months?

C04052
See Note 10

0 ○ 0 Worst health care possible
1 ○ 1
2 ○ 2
3 ○ 3
4 ○ 4
5 ○ 5
6 ○ 6
7 ○ 7
8 ○ 8
9 ○ 9
10 ○ 10 Best health care possible
-6 ○ My child had no visits last 12 months.

53. In the last 12 months, what type of facility did your child go to most often for health care? Select the facility your child used most often.

Please mark only one answer

C04053
See Note 10

1 ○ A military facility - This includes: Military clinic, Military hospital, PRIMUS clinic, NAVCARE clinic
2 ○ A civilian facility - This includes: Civilian doctor's office, Civilian clinic, Hospital, Civilian TRICARE contractor
3 ○ Uniformed Services Family Plan Facility (USFHP)
-6 ○ My child went to none of the listed types of facility in the last 12 months.

54. Is your child now enrolled in any kind of school or daycare?

C04054
See Note 16

1 ○ Yes
2 ○ No → Go to Question 57

55. In the last 12 months, did you need your child's doctors or other health providers to contact a school or daycare center about your child's health or health care?

C04055
See Note 16

1 ○ Yes
2 ○ No → Go to Question 57

56. In the last 12 months, did you get the help you needed from your child's doctors or other health providers in contacting your child's school or daycare?

C04056
See Note 16

1 ○ Yes
2 ○ No

----------SPECIALIZED SERVICES----------

57. In the last 12 months, did you get or try to get any special medical equipment or devices for your child, such as a walker, wheelchair, nebulizer, feeding tubes, or oxygen equipment?

C04057
See Note 17

1 ○ Yes
2 ○ No → Go to Question 60

58. In the last 12 months, how much of a problem, if any, was it to get special medical equipment for your child?

C04058 | See Note 17

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem → Go to Question 60

59. Did anyone from your child's health plan, doctor's office or clinic help you with this problem?

C04059 | See Note 17

1 ○ Yes
2 ○ No

60. In the last 12 months, did you get or try to get special therapy for your child, such as physical, occupational, or speech therapy?

C04060 | See Note 18

1 ○ Yes
2 ○ No → Go to Question 63

61. In the last 12 months, how much of a problem, if any, was it to get special therapy for your child?

C04061 | See Note 18

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem → Go to Question 63

62. Did anyone from your child's health plan, doctor's office or clinic help you with this problem?

C04062 | See Note 18

1 ○ Yes
2 ○ No

63. In the last 12 months, did you get or try to get treatment or counseling for your child for an emotional, developmental or behavioral problem?

C04063 | See Note 19

1 ○ Yes
2 ○ No → Go to Question 66

64. In the last 12 months, how much of a problem, if any, was it to get this treatment or counseling for your child?

C04064 | See Note 19

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem → Go to Question 66

65. Did anyone from your child's health plan, doctor's office or clinic help you with this problem?

C04065 | See Note 19

1 ○ Yes
2 ○ No

66. In the last 12 months, did your child get care from more than one kind of health care provider or use more than one kind of health care service?

C04066 | See Note 20

1 ○ Yes
2 ○ No → Go to Question 68

67. In the last 12 months, did anyone from your child's health plan, doctor's office or clinic help coordinate your child's care among these different providers or services?

C04067 | See Note 20

1 ○ Yes
2 ○ No

----------YOUR CHILD'S HEALTH PLAN----------

The next questions ask about your experience with your child's health plan.

68. Claims are sent to a health plan for payment. You may send in the claims yourself, or doctors, hospitals, or others may do this for your child. In the last 12 months, did you or anyone send in any claims for your child to your child's health plan?

C04068 | See Note 21

1 ○ Yes
2 ○ No → Go to Question 72
-5 ○ Don't Know → Go to Question 72

69. In the last 12 months, how often did your child's health plan handle your child's claims in a reasonable time?

C04069

See Note 21

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-5 ○ Don't know.
-6 ○ No claims were sent to my child's health plan in the last 12 months.

70. In the last 12 months, how often did your child's health plan handle your child's claims correctly?

C04070

See Note 21

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-5 ○ Don't know.
-6 ○ No claims were sent to my child's health plan in the last 12 months.

71. In the last 12 months, before your child went for care, how often did your child's health plan make it clear how much you would have to pay?

C04071

See Note 21

1 ○ Never
2 ○ Sometimes
3 ○ Usually
4 ○ Always
-5 ○ Don't know.
-6 ○ No claims were sent to my child's health plan in the last 12 months.

72. In the last 12 months, did you look for any information about how your health plan works in written material or on the Internet?

C04072

See Note 22

1 ○ Yes
2 ○ No → Go to Question 74

73. In the last 12 months, how much of a problem, if any, was it to find or understand this information?

C04073

See Note 22

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ I didn't look for information from my child's health plan in the last 12 months.

74. In the last 12 months, did you call the health plan's customer service to get information or help for your child?

C04074

See Note 23

1 ○ Yes
2 ○ No → Go to Question 76

75. In the last 12 months, how much of a problem, if any, was it to get the help you needed when you called your child's health plan's customer service?

C04075

See Note 23

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ I didn't call my child's health plan's customer service in the last 12 months.

76. In the last 12 months, did you have to fill out any paperwork for your child's health plan?

C04076

See Note 24

1 ○ Yes
2 ○ No → Go to Question 78

77. In the last 12 months, how much of a problem, if any, did you have with paperwork for your child's health plan?

C04077

See Note 24

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem
-6 ○ I didn't have any experience with paperwork for my child's health plan in the last 12 months.

78. Using any number from 0 to 10 where 0 is the worst health plan possible, and 10 is the best health plan possible, what number would you use to rate your child's health plan?

C04078

0 ○ 0 Worst health plan possible
1 ○ 1
2 ○ 2
3 ○ 3
4 ○ 4
5 ○ 5
6 ○ 6
7 ○ 7
8 ○ 8
9 ○ 9
10 ○ 10 Best health plan possible

----------PRESCRIPTION MEDICATIONS----------

79. In the last 12 months, did your child get a prescription for medicine or did you refill a prescription for your child?

C04079

See Note 25

1 ○ Yes
2 ○ No → Go to Question 82

80. In the last 12 months, how much of a problem, if any, was it to get your child's prescription medicine?

C04080

See Note 25

1 ○ A big problem
2 ○ A small problem
3 ○ Not a problem → Go to Question 82

81. Did anyone from your child's health plan, doctor's office or clinic help you with this problem?

C04081

See Note 25

1 ○ Yes 2 ○ No

----------ABOUT YOUR CHILD AND YOU----------

Information in this section will be used to study how different kinds of people view our health care system. This information will not be used to identify you or your child personally.

82. In general, how would you rate your child's overall health now?

C04082

5 ○ Excellent
4 ○ Very Good
3 ○ Good
2 ○ Fair
1 ○ Poor

83. How tall is your child without his/her shoes on? Write the number on the line and then fill in the bubble below.

a. Feet _____

C04083A

1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○

b. Inches _____

C04083B

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○

84. How much does your child weigh without his/her shoes on? Please write the number of pounds on the line below.

C04084

○ _____ pounds

85. On how many of the past 7 days did your child exercise or participate in physical activity for at least 20 minutes that made him/her sweat and breathe hard such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities?

C04085

1 ○ 0 days
2 ○ 1 day
3 ○ 2 days
4 ○ 3 days
5 ○ 4 days
6 ○ 5 days
7 ○ 6 days
8 ○ 7 days

86. On how many of the past 7 days did your child participate in physical activity for at least 30 minutes that did not make him/her sweat and breathe hard such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

C04086

1 ○ 0 days
2 ○ 1 day
3 ○ 2 days
4 ○ 3 days
5 ○ 4 days
6 ○ 5 days
7 ○ 6 days
8 ○ 7 days

87. In the past 7 days, how many hours did your child watch TV?

C04087

1 ○ My child did not watch any TV
2 ○ Less than 1 hour per day
3 ○ 1 or more hours per day but less than 2 hours per day
4 ○ 2 or more hours per day but less than 3 hours per day
5 ○ 3 or more hours per day but less than 4 hours per day
6 ○ 4 or more hours per day but less than 5 hours per day
7 ○ 5 or more hours per day

88. In the past 7 days, how many times did your child eat fast food? Fast food is the kind of food served at the following or similar types of restaurants: McDonald's, Burger King, Wendy's, Dairy Queen, Hardees, Jack in the Box, KFC, Popeye's, Taco Bell.

C04088

1 ○ Never
2 ○ 1 or 2 times
3 ○ 3 or 4 times
4 ○ 5 or 6 times
5 ○ 7 or more times

89. Does your child currently need or use <u>medicine prescribed by a doctor</u> (other than vitamins)?

C04089

1 ○ Yes
2 ○ No → Go to Question 92

See Note 26

90. Is this because of any medical, behavioral, or other health condition?

C04090

1 ○ Yes
2 ○ No → Go to Question 92

See Note 26

91. Is this a condition that has lasted or is expected to last for <u>at least</u> 12 months?

C04091

1 ○ Yes
2 ○ No

See Note 26

92. Does your child need or use more medical care, mental health, or educational services than is usual for most children of the same age?

C04092

1 ○ Yes
2 ○ No → Go to Question 95

See Note 27

93. Is this because of any medical, behavioral, or other health condition?

C04093

1 ○ Yes
2 ○ No → Go to Question 95

See Note 27

94. Is this a condition that has lasted or is expected to last for at least 12 months?

C04094

1 ○ Yes
2 ○ No

See Note 27

95. Is your child limited or prevented in any way in his or her ability to do the things most children of the same age can do?

C04095

1 ○ Yes
2 ○ No → Go to Question 98

See Note 28

96. Is this because of any medical, behavioral, or other health condition?

C04096

1 ○ Yes
2 ○ No → Go to Question 98

See Note 28

97. Is this a condition that has lasted or is expected to last for at least 12 months?

C04097

1 ○ Yes
2 ○ No

See Note 28

98. Does your child need or get special therapy, such as physical, occupational, or speech therapy?

C04098

1 ○ Yes
2 ○ No → Go to Question 101

See Note 29

99. Is this because of any medical, behavioral, or other health condition?

C04099

1 ○ Yes
2 ○ No → Go to Question 101

See Note 29

100. Is this a condition that has lasted or is expected to last for at least 12 months?

C04100

1 ○ Yes
2 ○ No

See Note 29

101. Does your child have any kind of emotional, developmental, or behavioral problem for which he or she needs or gets treatment or counseling?

C04101

1 ○ Yes
2 ○ No → Go to Question 103

See Note 30

102. Has this problem lasted or is it expected to last for at least 12 months?

C04102

1 ○ Yes
2 ○ No

See Note 30

103. Is your child male or female?

C04103

1 ○ Male 2 ○ Female

104. Is your child of Hispanic or Latino origin or descent?

C04104

1 ○ Yes, Hispanic or Latino
2 ○ No, not Hispanic or Latino

105. What is your child's race? Please mark one or more.

C04105A-C04105F

A ○ White
B ○ Black or African-American
C ○ Asian
D ○ Native Hawaiian or other Pacific Islander
E ○ American Indian or Alaska Native
F ○ Other

106. What is your age now?

C04106

1 ○ Under 18
2 ○ 18 to 24
3 ○ 25 to 34
4 ○ 35 to 44
5 ○ 45 to 54
6 ○ 55 to 64
7 ○ 65 to 74
8 ○ 75 or older

107. Are you male or female?

C04107

1 ○ Male 2 ○ Female

108. What is the highest grade or level of school that you have completed?

C04108

1 ○ 8th grade or less
2 ○ Some high school, but did not graduate
3 ○ High school graduate or GED
4 ○ Some college or 2-year degree
5 ○ 4-year college graduate
6 ○ More than 4-year college degree

109. How are you related to the policyholder?

C04109

1 ○ I am the policyholder
2 ○ Spouse or partner of policyholder
3 ○ Child of policyholder
4 ○ Other family member
5 ○ Friend
6 ○ Someone else

110. How are you related to the child?

C04110

1 ○ Mother or father
2 ○ Grandparent
3 ○ Aunt or uncle
4 ○ Older sibling
5 ○ Other relative
6 ○ Legal guardian

THANK YOU FOR TAKING THE TIME TO COMPLETE THE SURVEY. Your generous contribution will aid efforts to improve the health of our military community.

Return your survey in the postage-paid envelope. If envelope is missing, send to: NRC/Survey Processing Center, PO BOX 82660, Lincoln, NE 68501-9465

APPENDIX B

CHILD SURVEY FIELDING MATERIALS

Sample Notification Letter

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
HEALTH AFFAIRS

TRICARE MANAGEMENT ACTIVITY
HEALTH PROGRAM ANALYSIS AND EVALUATION

June 3, 2004

DIRECT PRODUCT TYPE
** 0075973-A12345 **
TO THE PARENT OR GUARDIAN OF
CHRISTOPHER JOHNSON I
1245 Q ST STE 400
LINCOLN, NE 68508-1430

Dear Parent/Guardian:

We need your help! The Department of Defense (DoD) is requesting your cooperation in completing a worldwide survey of all DoD health care beneficiaries aimed at understanding and improving your health care experiences. In a few weeks, we will mail you the ***Health Care Survey of Department of Defense Beneficiaries for Children*** that includes questions about the health care services your child has received in the past 12 months. Your views are important to us and your opinions count. By completing the survey, you will provide important information that will help us improve the health care services for the entire DoD health care community. Please take advantage of this opportunity to share your opinions by participating in the survey.

Taking part in this survey is voluntary. You are among only a few beneficiaries randomly selected to participate. As an eligible military beneficiary, your benefits under TRICARE include both civilian care and care you receive within our military facilities. **Even if your child did not receive health care from a military facility, please still complete the survey.** All the information from the survey is private.

If your address above is incorrect, please telephone the Survey Operations Center at 1-800-866-1821 (within the U.S.) or call collect at 1-402-475-5003 (outside the U.S.) between the hours of 9:00 AM and 7:00 PM EST to give your correct address. You also can send this letter via facsimile with your correct address to 1-800-733-5751. All calls to these numbers are free.

Thank you for your service to our country, and thank you in advance for your help!

Sincerely,

Richard D. Guerin, Ph.D.
Director
Health Program Analysis and Evaluation

Sample First Survey Cover Letter

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
HEALTH AFFAIRS

TRICARE MANAGEMENT ACTIVITY
HEALTH PROGRAM ANALYSIS AND EVALUATION

July 3, 2003

DIRECT PRODUCT TYPE
** 0122629-A12345 **
TO THE PARENT OR GUARDIAN OF
CHRISTOPHER JOHNSON I
1245 Q ST STE 400
LINCOLN, NE 68508-1430

Dear Parent/Guardian:

We need your help! The Department of Defense (DoD) needs your cooperation in completing this survey. The TRICARE Health Plan manages health care coverage for over 8.5 million military personnel and their families worldwide. You are among only a few TRICARE members who were randomly selected to receive this survey. Your responses will provide important information that will help us improve the health care services for the entire DoD health care community. Please take advantage of this opportunity.

The enclosed survey asks about your child's experiences receiving health care services in the past 12 months. This survey is also available on the Web. Access the web version by using this address: **http://iquest.telesage.com/dod-ben-child** and the password **123ABC** is assigned for your exclusive use. Return the completed survey by mail in the enclosed postage-paid envelope or via the web site to avoid a reminder and additional survey. As an eligible military beneficiary, your child's benefits include both civilian care and care your child receives within our military facilities. **Even if your child did not receive health care from a military facility, we still ask that you complete the survey.**

Remember to answer either the mail survey enclosed OR access the Web survey and submit it electronically. **Do not answer both.** Bear in mind that on July 16, 2004 a reminder will be mailed to you if we have not received your completed survey by then. If we still don't hear from you, we will send you another survey on August 6, 2004. The Web survey will only be available until September 1, 2004.

If your address above is incorrect, please telephone the Survey Operations Center at 1-800-866-1821 (within the U.S.) or call collect at 1-402-475-5003 (outside the U.S.) between the hours of 9:00 AM and 7:00 PM EST to give your correct address. You also can send this letter via facsimile with your correct address to 1-800-733-5751. All calls to these numbers are free.

Taking part in this survey is voluntary. Your contact information and how you respond is kept private. Thank you for your service to our country. Your experience as a military beneficiary needs to be heard. Thank you for your help.

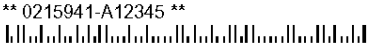
Richard D. Guerin, Ph.D.
Director
Health Program Analysis and Evaluation

Sample Reminder/Thank You Postcard

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
HEALTH AFFAIRS
SURVEY PROCESSING CENTER
c/o NATIONAL RESEARCH CORPORATION
PO BOX 82660
LINCOLN, NE 68501

PRESORTED
1ST CLASS
U.S. POSTAGE
PAID
LINCOLN, NE
PERMIT #1116

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

DIRECT PRODUCT TYPE
** 0215941-A12345 **

TO THE PARENT OR GUARDIAN OF
CHRISTOPHER JOHNSON I
1245 Q ST STE 400
LINCOLN, NE 68508-1430

WE NEED YOUR HELP!

HELLO!

Recently, we mailed you the *Health Care Survey of DoD Beneficiaries for Children*, a DoD-sponsored survey of all TRICARE members. You are among only a few randomly selected to receive this survey and her have not heard from you yet! As an eligible military beneficiary, your benefits include both civilian care and care you receive within our military facilities. **Even if your child did not receive health care from a military facility, please complete the survey.**

Taking part in this survey is voluntary and the information you provide us is kept private. The end of the survey period is September 1, 2004 so return your copy today!

If you did not receive the survey or if you need another copy, please call 1-800-866-1821 (within the U.S.) or call collect at 1-402-475-5003 (outside the U.S.). All calls to this number are free.

THANK YOU!

Richard D. Guerin, Ph.D.
Director, Health Program Analysis and Evaluation

Sample Second Survey Cover Letter

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
HEALTH AFFAIRS

TRICARE MANAGEMENT ACTIVITY
HEALTH PROGRAM ANALYSIS AND EVALUATION

August 6, 2004

#BWNHNMP
** 0153733-A12345 **
TO THE PARENT OR GUARDIAN OF
CHRISTOPHER JOHNSON I
1245 Q ST STE 400
LINCOLN, NE 68508-1430

Dear Parent/Guardian:

We need your help! The Department of Defense (DoD) is requesting your cooperation in completing a worldwide survey of all members aimed at understanding and improving your health care experiences. Only a few have been randomly selected to receive this survey and you are one of them but we haven't heard from you yet! Enclosed is another copy of the survey. Please take advantage of this opportunity by responding to it and returning it right away! By doing so, you provide important information that helps us improve the health care services for the entire DoD health care community. The survey asks about your child's experiences receiving health care services, whether in a military or civilian facility, over the past 12 months.

We have established a Web site for you to use if you choose. The questionnaire is found at **http://iquest.telesage.com/dod-ben-child.** Your own personal password is **123ABC.** The last day of the survey period is September 1, 2004 so please respond promptly. Send us only one response; either complete the mail survey enclosed, or access the Web site and submit your responses electronically. Your views are important to us and your opinions count. Taking part in this survey is voluntary. All your contact information and how you respond is kept private.

Your feedback is important to help us improve our services and to provide you with the best possible health care. Although we made every attempt to ensure that our information is correct, we apologize if you received this mailing in error. If you have received this in error, if the address above is incorrect, or if you have questions about the survey, please contact us by using the pre-addressed envelope provided or by calling the Survey Processing Department at 1-800-866-1821 (within the U.S.) or call collect at 1-402-475-5003 (outside the U.S.) between the hours of 9:00 AM and 7:00 PM ET. If you call you will be asked to provide your name, address, and the 8-digit number above your address on this cover letter. You also can send this letter via facsimile to 1-800-733-5751. All calls to these numbers are toll free.

Thank you for your service to our country. Your experience as a military beneficiary needs to be heard. Please take the time to respond.

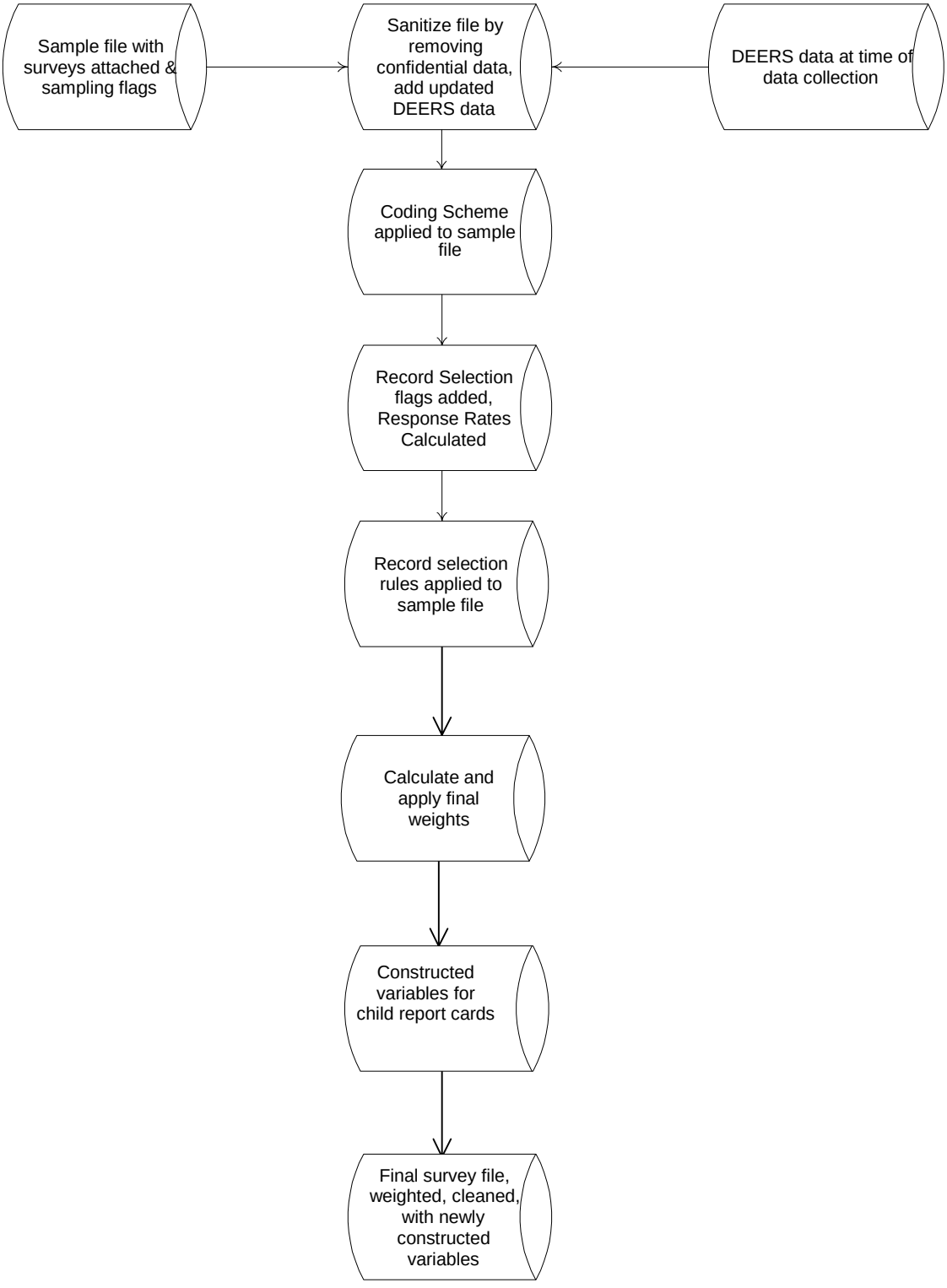
Richard D. Guerin, Ph.D.
Director
Health Program Analysis and Evaluation

RCS: DD-HA(A) 1942
Expires: 25 July 2006

APPENDIX C

DATA PROCESSING ARCHITECTURE

DATA PROCESSING ARCHITECTURE



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APPENDIX D

CHILD CODING SCHEME AND CODING TABLES

BASIC SAS AND ASCII/EBCDIC MISSING DATA AND NOT APPLICABLE CODES

SAS	ASCII/EBCDIC	
Numeric	Numeric	Description
.	-9	No response
.A	-8	Multiple response error
.O	-7	Out of range error
.N	-6	Not Applicable or valid skip
.D	-5	Scalable response of “Don’t know” or “not sure”
.I	-4	Incomplete grid error
.C	-1	Question should not have been answered. It should have been skipped

Missing values ‘.’, multiple responses ‘.A’, and incomplete grids ‘.I’ are encoded prior to implementation of the Coding Scheme Notes (see below).

Coding Table for Note 1:
C04005, C04006 – C04007

N1	C04005 is:	C04006 – C04007 are:	C04005 is coded as:	C04006 – C04007 are coded as:	*
1	1: yes	At least one is "marked" or "all are blank"	Stands as original Value	Stand as original Value	
2	1: yes, missing, or multiple response	"Blank or NA"	2: No	.N, valid skip if missing; .C, question should be skipped if marked	B F
3	2: no, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
4	2: no	"Blank or NA" or "all are blank"	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	"All are blank"	Stands as original value	Stand as original value	
6	Multiple response	"All are blank"	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 1:
All responses to questions C04006 through C04007 are missing.

Definition of "blank or NA" in Coding Table for Note 1:
Responses to C04006 through C04007 are a combination of missing and not applicable (-6).

Definition of "marked" in Coding Table for Note 1:
Any pattern of marks outside the definitions "all are blank," and "blank or NA."

Coding Table for Note 2:
H04007, H04008

N2	H04007 is:	H04008 is:	H04007 is coded as:	H04008 is coded as:	*
1	.N, valid skip, or .C, question should be skipped	Any Value	Stands as original value	Stands as original value	
2	1:yes, missing, or multiple response	1- 3, multiple response	2: no	Stands as original value	B
3	1: yes	Missing	Stands as original value	.N, valid skip if missing	F
4	2: no	1-3, missing, or multiple response	Stands as original value	Stands as original value	
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	1: yes	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 3:
C04010, C04011, C04012

N3	C04010 is:	C04011, C04012 Are:	C04010 is coded as:	C04011, C04012 Are coded as:	*
1	1: yes	"All are blank" or at least one is "marked"	Stands as original value	Stand as original value	
2	2: no, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
3	2: no	"All are blank"	Stands as original value	.N, valid skip if missing	F
4	Missing response	"All are blank"	Stands as original value	Stand as original value	
5	Multiple response	"All are blank"	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 3:
C04011 and C04012 are both missing.

Definition of "marked" in Coding Table for Note 3:
Any pattern of marks outside the definitions "all are blank".

Coding Table for Note 4:
C04013 – C04016

N4	C04013 is:	C04014 – C04016 are :	C04013 is coded as:	C04014 – C04016 Are:	*
1	1: yes	"All are blank"	Stands as original value	Stand as original value	
2	1: yes, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
3	1: yes, missing, or multiple response	"Blank or NA"	2: no	.N, valid skip if missing; .C, question should be skipped if marked	B F
4	2: no, -5: I don't know, or -6: not enrolled in Tricare Prime	"All are blank"	Stands as original value	.N, valid skip	F
5	2: no, -5: I don't know, or –6: not enrolled in Tricare Prime	At least one is "marked"	1: yes	Stand as original value	B
6	2: no, -5: I don't know, -6: not enrolled in Tricare Prime	"Blank or NA or Not sure"	2: no	.N, valid skip if missing; .C, question should be skipped if marked	B F
7	Multiple response	"All are blank"	-5: I don't know	.N, valid skip if missing; .C, question should be skipped if marked	B F
8	Missing response	"All are blank"	Stands as original value	Stand as original value	

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 4:
All responses to questions C04014 through C04016 are missing.

Definition of "blank or NA" in Coding Table for Note 4:
Responses to questions C04014 and C04016 are a combination of missing and not applicable (-6).

Definition of "marked" in Coding Table for Note 4:
Any pattern of marks outside of "all are blank" and "blank or NA."

Coding Table for Note 5:
C04017, C04018

N5	C04017 is:	C04018 is:	C04017 is coded as:	C04018 is coded as:	*
1	1: yes	1-3, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: child didn't see a specialist	2: No	.C question should be skipped	B F
3	2: no, missing, or multiple response	1- 3, multiple response	1: yes	Stands as original value	B
4	2: no	Missing, or –6: child didn't see a specialist	Stands as original value	.N, valid skip if missing, .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 6:
C04019, C04020-C04021

N6	C04019 is:	C04020, C04021 Are:	C04019 is coded as:	C04020, C04021 Are coded as:	*
1	1: yes	"All are blank" or at least one is "marked"	Stands as original value	Stand as original value	
2	1: yes, missing, or multiple response	"Blank or NA"	2:no	.N, valid skip if missing; .C, question should be skipped if marked	B F
3	2: no, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
4	2: no	"All are blank" or "blank or NA"	Stands as original value	.N, valid skip if missing	F
5	Missing response	"All are blank"	Stands as original value	Stand as original value	
6	Multiple response	"All are blank"	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 6:
C04020 and C04021 are both missing.

Definition of "blank or NA" in Coding Table for Note 6:
C04020 and C04021 are either not applicable (-6), or a combination of not applicable (-6) and missing.

Definition of "marked" in Coding Table for Note 6:
Any pattern of marks outside the definitions "all are blank" and "blank or NA."

Coding Table for Note 7:
C04022, C04023

N7	C04022 is:	C04023 is :	C04022 is coded as:	C04023 is coded as:	*
1	1: yes	1-4: how often, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: no calls	2: no	.C, question should be skipped	B F
3	2: no, missing or multiple response	1-4: how often or multiple response	1: yes	Stands as original value	B
4	2: no	-6: no calls, or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 8:
C04024, C04025

N8	C04024 is:	C04025 is :	C04024 is coded as:	C04025 is coded as:	*
1	1: yes	1-4: how often, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: no urgent care	2: no	.C, question should be skipped	B F
3	2: no, missing or multiple response	1-4: how often or multiple response	1: yes	Stands as original value	B
4	2: no	-6: no urgent care, or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 9:
C04026, C04027

N9	C04026 is:	C04027 is :	C04026 is coded as:	C04027 is coded as:	*
1	1: yes	1-4: how often, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: no appointments	2: no	.C, question should be skipped	B F
3	2: no, missing or multiple response	1-4: how often or multiple response	1: yes	Stands as original value	B
4	2: no	-6: no appointments, or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 10:
C04029, C04030 – C04053

N10	C04029 is:	C04030 – C04053 are:	C04029 is coded as:	C04030 – C04053 are coded as:	*
1	1: none	"Blank or NA" or "all are blank" or At least one is "marked"	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
2	Missing or multiple response	At least one is "marked"	Stands as original value	missing, if -6; Stands as original value, otherwise	F
3	>=2	At least one is "marked" or "all are blank"	Stands as original value	missing, if -6; Stands as original value, otherwise	F
4	>=2, missing, or multiple response	"Blank or NA"	1: none	.N, valid skip if missing; .C, question should be skipped if marked	B F
5	Missing response	"All are blank"	Stands as original value	Stand as original value	
6	Multiple response	"All are blank"	1: none	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 10:
All responses to questions C04030 through C04053 are missing.

Definition of "blank or NA" in Coding Table for Note 10:
C04030 – C04053 are a combination of not applicable (-6) and missing.

Definition of "marked" in Coding Table for Note 10:
Any pattern of marks outside the definitions "all are blank" and "blank or NA."

Coding Table for Note 11:
C04030, C04031

N11	C04030 is:	C04031 is :	C04030 is coded as:	C04031 is coded as:	*
1	.N, valid skip, or .C, question should be skipped	Any Value	Stands as original value	Stands as original value	
2	1: yes	1-3: problem, missing, or multiple response	Stands as original value	Stands as original value	
3	1: yes, missing, or multiple response	-6: no visits	2: no	.C, question should be skipped	B F
4	2: no, missing or multiple response	1-3: problem or multiple response	1: yes	Stands as original value	B
5	2: no	-6: no visits, or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing response	Missing response	Stands as original value	Stands as original value	
7	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 12:
C04032, C04033

N12	C04032 is:	C04033 is :	C04032 is coded as:	C04033 is coded as:	*
1	.N, valid skip, or .C, question should be skipped	Any Value	Stands as original value	Stands as original value	
2	1: yes	1-3: problem, missing, or multiple response	Stands as original value	Stands as original value	
3	1: yes, missing, or multiple response	-6: no visits	2: no	.C, question should be skipped	B F
4	2: no, missing or multiple response	1-3: problem or multiple response	1: yes	Stands as original value	B
5	2: no	-6: no visits, or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing response	Missing response	Stands as original value	Stands as original value	
7	Multiple response	Missing response	2: no	.N, valid skip	B F

- Indication of backward coding (B) or forward coding (F).

Coding Table for Note 13:
C04040, C04041

N13	C04040 is:	C04041 is:	C04040 is coded as:	C04041 is coded as:	*
1	.N, valid skip or .C, question should not have been answered	Any Value	Stands as original value	Stands as original value	
2	1: yes	1-4, missing, multiple response, or –5: don't know	Stands as original value	Stands as original value	
3	1: yes, missing, or multiple response	–6: no visits	2: no	.C, question should be skipped	B F
4	2: no, missing, or multiple response	1-4, missing, multiple response	1: yes	Stands as original value	B
5	2: no	Missing or –6: no visits	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing	Missing, -5: don't know	Stands as original value	Stands as original value	
7	Multiple response	Missing, -5: don't know	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 14:
C04043, C04044 – C04046

N14	C04043 is:	C04044 – C04046 are:	C04044 is coded as:	C04044 – C04046 are coded as:	*
1	.N, valid skip or .C, question should not have been answered	.N, valid skip or .C, question should not have been answered	Stands as original value	Stands as original value	
2	1: yes	"All are blank" or at least one is "marked"	Stands as original value	Stand as original value	
3	2: no, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
4	2: no	"All are blank"	Stands as original value	.N, valid skip if missing	F
5	Missing response	"All are blank"	Stands as original value	Stand as original value	
6	Multiple response	"All are blank"	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 14:
All responses to questions C04044 through C04046 are missing.

Definition of "marked" in Coding Table for Note 14:
Any pattern of marks outside the definition "all are blank".

Coding Table for Note 15:
C04047, C04048 – C04051

N15	C04047 is:	C04048 – C04051 are:	C04048 is coded as:	C04048 – C04051 are coded as:	*
1	.N, valid skip or .C, question should not have been answered	.N, valid skip or .C, question should not have been answered	Stands as original value	Stands as original value	
2	1: yes	"All are blank" or at least one is "marked"	Stands as original value	Stand as original value	
3	2: no, missing, or multiple response	At least one is "marked"	1: yes	Stand as original value	B
4	2: no	"All are blank" or "blank or NA"	Stands as original value	.N, valid skip if missing, .C, question should be skipped if marked	F
5	Missing response	"All are blank"	Stands as original value	Stand as original value	
6	Multiple response	"All are blank"	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of "all are blank" in Coding Table for Note 15:
All responses to questions C04047 through C04051 are missing.

Definition of "marked" in Coding Table for Note 15:
Any pattern of marks outside the definition "all are blank".

Coding Table for Note 16:
C04054, C04055 & C04056

N16	C04054 is:	C04055 is:	C04056 is:	C04054 is coded as:	C04055 is coded as:	C04056 is coded as:	*
1	1: Yes	1: Yes	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	2: No	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	1: Yes	missing, or multiple response	1-2, or multiple response	Stands as original value	1: Yes	Stands as original value	B
4	1: Yes	missing, or multiple response	missing response	Stands as original value	Stands as original value	Stands as original value	
5	2: No	1-2, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	1: Yes	Any Value	1: Yes	Stands as original value	Stands as original value	B
7	Missing, Multiple response	2: No	Any Value	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
8	Missing, Multiple response	Missing, Multiple response	Marked	1: Yes	1: Yes	.N, valid skip if missing; .C, question should be skipped if marked	B
9	Missing, Multiple response	Missing, Multiple response	Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 17:
C04057, C04058 & C04059

N17	C04057 is:	C04058 is:	C04059 is:	C04057 is coded as:	C04058 is coded as:	C04059 is coded as:	*
1	1: Yes	1-2: problem, missing, or multiple response	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	3: Not a problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	2: No, missing, multiple response	1-2: problem	1-2, or multiple, Missing response	1: Yes	Stands as original value	Stands as original value	B
4	2: No	3: no problem, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing, Multiple response	3: no problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	Multiple, Missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 18:
C04060, C04061 & C04062

N18	C04060 is:	C04061 Is:	C04062 is:	C04060 is coded as:	C04061 is coded as:	C04062 is coded as:	*
1	1: Yes	1-2: problem, missing, or multiple response	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	3: Not a problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	2: No, missing, multiple response	1-2: problem	1-2, or multiple, Missing response	1: Yes	Stands as original value	Stands as original value	B
4	2: No	3: no problem, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing, Multiple response	3: no problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	Multiple, Missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 19:
C04063, C04064 & C04065

N19	C04063 is:	C04064 Is:	C04065 is:	C04063 is coded as:	C04064 is coded as:	C04065 is coded as:	*
1	1: Yes	1-2: problem, missing, or multiple response	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	3: Not a problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	2: No, missing, multiple response	1-2: problem	1-2, or multiple, Missing response	1: Yes	Stands as original value	Stands as original value	B
4	2: No	3: no problem, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing, Multiple response	3: no problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	Multiple, Missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 20:
C04066, C04067

N20	C04066 is:	C04067 is :	C04066 is coded as:	C04067 is coded as:	*
1	1: yes	1-2, missing, or multiple response	Stands as original value	Stands as original value	
2	2: no, missing or multiple response	1-2, or multiple response	1: yes	Stands as original value	B
3	2: no	missing response	Stands as original value	.N, valid skip	F
4	Missing response	Missing response	Stands as original value	Stands as original value	
5	Multiple response	Missing response	2: no	.N, valid skip	B F

*Indication of backward coding (B) or forward coding (F).

Coding Table for Note 21:
C04068, C04069 -- C04071

N21	C04068 Is:	C04069 – C04071 are:	C04068 is coded as:	C04069 – C04071 are coded as:	*
1	1: yes	At least one is “marked”, “all are blank” or “blank or don’t know”	Stands as original value	missing, if -6; Stands as original value, otherwise	F
2	1: yes, -5: don’t know, missing, or multiple response	“Blank or NA”	2: no	.N, valid skip if missing; .C, question should be skipped if marked	B F
3	-5: don’t know	At least one is “marked”	1:yes	missing, if -6; Stands as original value, otherwise	B F
4	-5: don’t know	“Blank or don’t know”	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	-5: don’t know	“All are blank”	Stands as original value	.N, valid skip	F
6	2: no, missing, or multiple response	At least one is “marked” or “blank or don’t know”	1: yes	missing, if -6; Stands as original value, otherwise	B F
7	2: no	“Blank or NA” or “all are blank”	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
8	Missing response	“All are blank”	Stands as original value	Stand as original value	
9	Multiple response	“All are blank”	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Definition of “all are blank” in Coding Table for Note 21:
Responses to C04069-C04071 are all missing.

Definition of “blank or NA” in Coding Table for Note 21:
Responses to C04069-C04071 are either all not applicable (-6) or a combination of missing and not applicable (-6).

Definition of “blank or don’t know” in Coding Table for Note 21:
Responses to C04069-C04071 are either all don’t know (-5) or a combination of missing and don’t know (-5).

Definition of “marked” in Coding Table for Note 21:
Any pattern of marks outside the definitions “all are blank,” “blank or NA,” or “blank or don’t know.”

Coding Table for Note 22:
C04072, C04073

N22	C04072 is:	C04073 is:	C04072 is coded as:	C04073 is coded as:	*
1	1: yes	1-3: categorize problem, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: not applicable	2: no	.C, question should be skipped	B F
3	2: no, missing, or multiple response	1-3: categorize problem, or multiple response	1: yes	Stands as original value	B
4	2: no	-6: not applicable or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F)

Coding Table for Note 23:
C04074, C04075

N23	C04074 is:	C04075 is :	C04074 is coded as:	C04075 is coded as:	*
1	1: yes	1-3: categorize problem, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: not applicable	2: no	.C, question should be skipped	B F
3	2: no, missing, or multiple response	1-3: categorize problem, or multiple response	1: yes	Stands as original value	B
4	2: no	-6: not applicable or missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 24:
C04076, C04077

N24	C04076 is:	C04077 is :	C04076 is coded as:	C04077 is coded as:	*
1	1: yes	1-3: categorize problem, missing, or multiple response	Stands as original value	Stands as original value	
2	1: yes, missing, or multiple response	-6: not applicable	2: no	.C, question should be skipped	B F
3	2: no, missing, or multiple response	1-3: categorize problem, or multiple response	1: yes	Stands as original value	B
4	2: no	-6: not applicable or missing response	Stands as original value	.N, valid skip if missing, .C, question should be skipped if marked	F
5	Missing response	Missing response	Stands as original value	Stands as original value	
6	Multiple response	Missing response	2: no	.N, valid skip	B F

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 25:
C04079, C04080 & C04081

N25	C04079 is:	C04080 is:	C04081 is:	C04079 is coded as:	C04080 is coded as:	C04081 is coded as:	*
1	1: Yes	1-2: problem, missing, or multiple response	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	3: Not a problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	2: No, missing, multiple response	1-2: problem	1-2, or multiple, Missing response	1: Yes	Stands as original value	Stands as original value	B
4	2: No	3: no problem, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
5	Missing, Multiple response	3: no problem	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	Multiple, Missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 26:
C04089, C04090 & C04091

N26	C04089 is:	C04090 is:	C04091 is:	C04089 is coded as:	C04090 is coded as:	C04091 is coded as:	*
1	1: Yes	1: Yes	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	2: No	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	1: Yes	missing, or multiple response	1-2, or multiple response	Stands as original value	1: Yes	Stands as original value	B
4	1: Yes	missing, or multiple response	missing response	Stands as original value	Stands as original value	Stands as original value	
5	2: No	1-2, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	2	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
7	Missing, Multiple response	1, multiple, missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 27:
C04092, C04093 & C04094

N27	C04092 is:	C04093 is:	C04094 is:	C04092 is coded as:	C04093 is coded as:	C04094 is coded as:	*
1	1: Yes	1: Yes	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	2: No	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	1: Yes	missing, or multiple response	1-2, or multiple response	Stands as original value	1: Yes	Stands as original value	B
4	1: Yes	missing, or multiple response	missing response	Stands as original value	Stands as original value	Stands as original value	
5	2: No	1-2, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	2	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
7	Missing, Multiple response	1, multiple, missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 28:
C04095, C04096 & C04097

N28	C04095 is:	C04096 is:	C04097 is:	C04095 is coded as:	C04096 is coded as:	C04097 is coded as:	*
1	1: Yes	1: Yes	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	2: No	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	1: Yes	Missing, or multiple response	1-2, or multiple response	Stands as original value	1: Yes	Stands as original value	B
4	1: Yes	Missing, or multiple response	missing response	Stands as original value	Stands as original value	Stands as original value	
5	2: No	1-2, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	2	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
7	Missing, Multiple response	1, multiple, missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 29:
C04098, C04099 & C04100

N29	C04098 is:	C04099 is:	C04100 is:	C04098 is coded as:	C04099 is coded as:	C04100 is coded as:	*
1	1: Yes	1: Yes	1-2, multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	
2	1: Yes	2: No	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
3	1: Yes	missing, or multiple response	1-2, or multiple response	Stands as original value	1: Yes	Stands as original value	B
4	1: Yes	missing, or multiple response	missing response	Stands as original value	Stands as original value	Stands as original value	
5	2: No	1-2, multiple response, Missing response	1-2, or multiple, Missing response	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	.N, valid skip if missing; .C, question should be skipped if marked	F
6	Missing, Multiple response	2	1-2, or multiple, Missing response	Stands as original value	Stands as original value	.N, valid skip if missing; .C, question should be skipped if marked	F
7	Missing, Multiple response	1, multiple, missing response	1-2, or multiple, Missing response	Stands as original value	Stands as original value	Stands as original value	

* Indication of backward coding (B) or forward coding (F).

Coding Table for Note 30:
C04101, C04102

N30	C04101 is:	C04102 is :	C04101 is coded as:	C04102 is coded as:	*
1	1: yes	1-2 , missing, or multiple response	Stands as original value	Stands as original value	
2	2: no	Missing response	Stands as original value	.N, valid skip	F
3	2: no, missing or multiple response	1: yes, 2: no, or multiple response	1: yes	Stands as original value	B
4	Missing	Missing	Stands as original value	Stands as original value	
5	Multiple response	Missing	2: no	.N, valid skip	B F

*Indication of backward coding (B) or forward coding (F).

APPENDIX E

SAS CODE

E.1 WEIGHTING\MERGNRCC.SAS - COMBINE ITEM RESPONSE DATA FROM NRC WITH THE MPR SAMPLING AND DEERS VARIABLES.

```
*************************************************************************
*
* PROGRAM:  MERGNRCC.SAS
* TASK:     QUARTERLY DOD HEALTH CARE SURVEY ANALYSIS (6077-300)
* PURPOSE:  COMBINE ITEM RESPONSE DATA FROM NRC WITH THE MPR SAMPLING AND
*           DEERS VARIABLES.  ALSO, CONSTRUCT XREGION AND CONUS.
* WRITTEN:  01/31/2001 BY KEITH RATHBUN
*
* MODIFIED: 1) 08/31/2001 BY KEITH RATHBUN, Adapted from MERGENRC.SAS to
*              accommodate the child survey for 2000.
*           2) 09/13/2002 BY KEITH RATHBUN, Small changes to accommodate the
*              the child survey for 2002.  Removed ENBGSMPL creation include
*              since it is now created at time of sampling.  Removed TSPSITE
*              since it is no longer available in the DEERS system.
*           3) 10/20/2004 BY KEITH RATHBUN: Recode unknown values of
*              MRTLSTAT into one group.
*
* INPUTS:   1) QnyyC.SD2 - 2003 Child DOD Health Survey Data from NRC
*              where n = Quarter Number
*                   yy = Survey Administration Year
*           2) SAMPLC01.SD2 - MPR Sampling variables
*           3) SAMPLC02.SD2 - DEERS and MPR Sampling variables
*           4) FRAMEC.SD2 - More MPR Sampling variables
*
* OUTPUTS:  1) MERGNRCC.SD2 - 2003 Child DOD Health Survey Data
*              (Combined NRC, MPR, and DEERS variables)
*
*************************************************************************;
LIBNAME  IN    V612 "..\..\DATA\cfinal";
LIBNAME  OUT   v612 "..\..\DATA\cfinal";

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER ERRORS=1;

*************************************************************************
* Define fielding start date so AGE can be recalculated based on DOB.
*************************************************************************;
%LET FIELDATE = 07012004; * mmddyyyy;
%LET FIELDLBL = July 1st 2004;
%LET NUMYRS   = 4; *Add 1 to number of years processed each year;

*************************************************************************
* SORT the RETURNS and the original sample (BWT).
*************************************************************************;
PROC SORT DATA=IN.Q304CFIN OUT=NRCFILE; BY MPRID; RUN;
DATA NRCFILE;
   LENGTH MPRID $8;
   SET NRCFILE;
RUN;

PROC SORT DATA=IN.SAMPLC01 OUT=SAMPLC01; BY MPRID; RUN;


*************************************************************************
* Attach the original sampling variables to the combined file.
*************************************************************************;
DATA MERGNRCC;
   MERGE SAMPLC01(IN=IN1) NRCFILE(IN=IN2);
   BY MPRID;
   FLAG_FIN = COMPRESS(FLAG_FIN); *Trim off the blanks;
   ************************************************************************
   * DROP variables that are not needed.
   ************************************************************************;
   DROP SEL_PROB AGE_N FAMCODE;
   ************************************************************************
   * Assign indicator of CONUS based on REGSMPL.  CONUS stands for
   * Contential United States it but includes both Alaska and Hawaii.
   ************************************************************************;
   IF      REGSMPL IN (1,2,3,4,5,6,7,8,9,10,11,12,16) THEN CONUS=1;
   ELSE IF REGSMPL IN (13,14,15)                      THEN CONUS=0;
```

```
   ELSE IF REGSMPL = .                                THEN CONUS=.;

   LENGTH CONUS   3. ;

   LABEL  CONUS    = 'CONUS - CONUS/OCONUS Indicator'
          BWT      = 'BWT - Basic Sampling Weight'
          FLAG_FIN = 'Final Disposition'
         ;
   IF IN2;
   IF IN2 AND NOT IN1 THEN
      PUT "ERROR: MPRID Not Found in both the NRC and MPR files, MPRID = " MPRID;
RUN;

PROC SORT DATA=IN.FRAMEC OUT=FRAMEC
     (KEEP=MPRID SUPREG SVCSMPL AGESMPL BGCSMPL);
   BY MPRID;
RUN;

DATA MERGNRCC;
   MERGE MERGNRCC(IN=IN1) FRAMEC(IN=IN2);
   BY MPRID;
   IF IN1 AND IN2;
RUN;

*************************************************************************
* Attach the DEERS variables to the combined file.
*************************************************************************;
DATA OUT.MERGNRCC;
   MERGE MERGNRCC   (IN=IN1)
         IN.SAMPLC02(IN=IN2
               KEEP=MPRID ENBGSMPL ENRID ULOCDMIS DCATCH DAGEQY DBENCAT DMEDELG
                    DSPONSVC LEGDDSCD MBRRELCD
                    MEDTYPE MRTLSTAT PATCAT PCM RACEETHN
                    PNTYPCD PNLCATCD PAYPLNCD PNBRTHDT E1-E&NUMYRS);
   BY MPRID;
   DROP LITHOCD PAYPLNCD PNTYPCD SURVTYPE BOTHSURV PNBRTHDT;
   ************************************************************************
   * MPCSMPL follows the recode for the 1999 data.  If the individuals can
   * be classified as an officer or a warrant officer, they are.  Otherwise, the
   * individuals are classified as enlisted.
   ************************************************************************;
   IF PAYPLNCD = 'MO' then
      MPCSMPL = 2;
   ELSE IF PAYPLNCD = 'MW' then
      MPCSMPL = 3;
   ELSE
      MPCSMPL = 1;
   LABEL MPCSMPL  = "MPCSMPL - Military Personnel Category";
   ************************************************************************
   * Relabel ENBGSMPL variable for consistency with prior releases.
   ************************************************************************;
   LABEL ENBGSMPL = "Enrollment by beneficiary category";
   POSTSTR = STRATUM;
   STRATUM = SAMPSTR;
   DROP SAMPSTR;
   LABEL POSTSTR = "Post Stratification Cell";
   LABEL STRATUM = "Sampling STRATUM";
   ************************************************************************
   * Calculate FIELDAGE based on PNBRTHDT using fielding period
   * starting date.
   ************************************************************************;
   FIELDATE = INPUT("&FIELDATE",mmddyy8.);
   DOB = SUBSTR(PNBRTHDT,5,2) || SUBSTR(PNBRTHDT,7,2) || SUBSTR(PNBRTHDT,1,4);
   BRTHDATE = INPUT(DOB,mmddyy8.);
   FIELDAGE = PUT(INT((FIELDATE - BRTHDATE)/365.25),Z3.);
   LABEL FIELDAGE = "Age as of &FIELDLBL";

   ************************************************************************
   * Recode unknown values of MRTLSTAT into one 'Unknown' group (Z).
   ************************************************************************;
   IF MRTLSTAT NOT IN ("A","D","I","L","M","N","S","W","Z"," ") THEN MRTLSTAT = "Z";

   DROP FIELDATE DOB BRTHDATE;
```

```
   IF IN2;
RUN;

TITLE1 "Annual Child DOD Health Survey - Combine NRC, MPR and DEERS variables (6077-300)";
TITLE2 "Program Name: MERGNRCC.SAS By Keith Rathbun";
TITLE3 "Program Inputs: Q304CFIN.SD2, FRAMEC/SAMPLC01/C02.SD2 -- Program Output: MERGNRCC.SD2";

PROC CONTENTS; RUN;

PROC FREQ DATA=OUT.MERGNRCC(DROP=MPRID);
TABLES E1*E2*E3*E4 FLAG_FIN ONTIME TRICKDUP WEB DAGEQY*FIELDAGE REGSMPL*CONUS _ALL_ /MISSING LIST;
RUN;
```

E.2 CODINGSCHEME\CSCHM04C.SAS - IMPLEMENT CODING SCHEME AND CODING TABLES.

```
*****************************************************************
*
*  PROGRAM:  CSCHM04C.SAS
*  PURPOSE:  APPLY CODING SCHEME TO DATA.
*  WRITTEN:  09/04/01 Rankin
* MODIFIED:  10/23/2001 C.Rankin recoded select variables
*                       to 1=marked, 2=missing
*         :  09/23/2003 J.Agufa- Updated program for 2003 survey
*         :  09/15/2004 J.Agufa- Updated program for 2004 survey
*
* PREVIOUS PROGRAM: MERGNRCC.SAS
*
*    INPUT: MERGNRCC.SD2
*   OUTPUT: CSCHM04C.SD2
*
*****************************************************************;

OPTIONS /*OBS=100*/ PS=79 LS=132 PAGENO=1;

LIBNAME LIBRARY V612 '..\..\DATA\CFINAL\FMTLIB';
LIBNAME IN      V612 '..\..\DATA\CFINAL';
LIBNAME OUT     V612 '..\..\DATA\CFINAL';


%LET INDATA=MERGNRCC;
%LET OUTDATA=CSCHM04C;


/* Vairable names in survey -- become recoded varibles               */
/* Note: Includes questions from both versions of the questionnaire  */

%Let varlist1 =
C04001  C04002  C04003
C04004A C04004B C04004C C04004D C04004E C04004F C04004G C04004H C04004I
C04005  C04006  C04007  C04008  C04009  C04010  C04011  C04012  C04013
C04014  C04015  C04016  C04017  C04018  C04019  C04020  C04021  C04022
C04023  C04024  C04025  C04026  C04027  C04028  C04029  C04030  C04031
C04032  C04033  C04034  C04035  C04036  C04037  C04038  C04039  C04040
C04041  C04042  C04043  C04044  C04045  C04046  C04047  C04048  C04049
C04050  C04051  C04052  C04053  C04054  C04055  C04056  C04057  C04058
C04059  C04060  C04061  C04062  C04063  C04064  C04065  C04066  C04067
C04068  C04069  C04070  C04071  C04072  C04073  C04074  C04075  C04076
C04077  C04078  C04079  C04080  C04081  C04082  C04083A C04083B
C04084  C04085  C04086  C04087  C04088  C04089  C04090  C04091  C04092
C04093  C04094  C04095  C04096  C04097  C04098  C04099  C04100  C04101
C04102  C04103  C04104
C04105A C04105B C04105C C04105D C04105E C04105F
C04106  C04107  C04108  C04109  C04110
;

/*  _O variables are the original values from the survey response */

%Let varlist2 =
C04001_O   C04002_O   C04003_O   C04004AO   C04004BO   C04004CO   C04004DO
C04004EO   C04004FO   C04004GO   C04004HO   C04004IO   C04005_O   C04006_O
C04007_O   C04008_O   C04009_O   C04010_O   C04011_O   C04012_O   C04013_O
C04014_O   C04015_O   C04016_O   C04017_O   C04018_O   C04019_O   C04020_O
C04021_O   C04022_O   C04023_O   C04024_O   C04025_O   C04026_O   C04027_O
C04028_O   C04029_O   C04030_O   C04031_O   C04032_O   C04033_O   C04034_O
C04035_O   C04036_O   C04037_O   C04038_O   C04039_O   C04040_O   C04041_O
C04042_O   C04043_O   C04044_O   C04045_O   C04046_O   C04047_O   C04048_O
C04049_O   C04050_O   C04051_O   C04052_O   C04053_O   C04054_O   C04055_O
C04056_O   C04057_O   C04058_O   C04059_O   C04060_O   C04061_O   C04062_O
C04063_O   C04064_O   C04065_O   C04066_O   C04067_O   C04068_O   C04069_O
C04070_O   C04071_O   C04072_O   C04073_O   C04074_O   C04075_O   C04076_O
C04077_O   C04078_O   C04079_O   C04080_O   C04081_O   C04082_O   C04083AO
C04083BO   C04084_O   C04085_O   C04086_O   C04087_O   C04088_O   C04089_O
C04090_O   C04091_O   C04092_O   C04093_O   C04094_O   C04095_O   C04096_O
C04097_O   C04098_O   C04099_O   C04100_O   C04101_O   C04102_O   C04103_O
C04104_O   C04105AO   C04105BO   C04105CO   C04105DO   C04105EO   C04105FO
C04106_O   C04107_O   C04108_O   C04109_O   C04110_O
```

```
;


TITLE 'DoD 2004 Child Survey';
TITLE2 'Apply Coding Scheme';

DATA OUT.&OUTDATA;

  %INCLUDE "CSCHM04C.FMT"; /* label and format statements */

  SET IN.&INDATA;


  /** This correction is for 2004 data  */
  /** Corrected C04041, C04042 */
  /** Value of 5 should be -5  */
  IF C04041= 5 THEN C04041= -5;
  IF C04042= 5 THEN C04042= -5;
  /** This correction is for 2004 data  */


  /** This correction is for 2004 data  */
  tC04082= C04082;

  IF tC04082=1 THEN C04082=5;
  IF tC04082=2 THEN C04082=4;
  IF tC04082=3 THEN C04082=3;
  IF tC04082=4 THEN C04082=2;
  IF tC04082=5 THEN C04082=1;


  DROP TC04082;
  /** This correction is for 2004 data  */



  IF C04083A= 10 THEN C04083A=-7;


  ARRAY RECODE &VARLIST1;
  ARRAY ORIG &VARLIST2;

  DO I = 1 to DIM(ORIG);
     ORIG(I) = RECODE(I);
     IF ORIG(I) < 0 THEN DO;
              IF ORIG(I)= -9 THEN RECODE(I)=.;
         ELSE IF ORIG(I)= -8 THEN RECODE(I)=.A;
         ELSE IF ORIG(I)= -7 THEN RECODE(I)=.O;
         ELSE IF ORIG(I)= -6 THEN RECODE(I)=.N;
         ELSE IF ORIG(I)= -5 THEN RECODE(I)=.D;
         ELSE IF ORIG(I)= -4 THEN RECODE(I)=.I;
         ELSE IF ORIG(I)= -1 THEN RECODE(I)=.C;
         ELSE RECODE(I)=RECODE(I);
     END;
  END;
  DROP I;


  /* recode selected responses to be 1=marked, 2=unmarked */

  ARRAY   MARKED(*) C04004A  C04004B  C04004C  C04004D C04004E C04004F
                    C04004G  C04004H  C04004I
                    C04105A  C04105B  C04105C  C04105D  C04105E  C04105F
                             ;

  ARRAY INFORMAT(*) C04004AO C04004BO C04004CO C04004DO C04004EO C04004FO
                    C04004GO C04004HO C04004IO
                    C04105AO C04105BO C04105CO C04105DO C04105EO C04105FO
                        ;

  DO J=1 TO DIM(INFORMAT);
     IF INFORMAT(J) NOT IN (.,-9) THEN MARKED(J)=1;
     ELSE MARKED(J)=2;
  END;
```

```
  DROP J;

  /*  skip coding scheme for all surveys not returned  **/

  IF FLAG_FIN NE '1' THEN GOTO NOSURVEY;


/* NOTE 1: C04005, C04006--C04007: Personal doctor or nurse*/

  ARRAY NOTE1 C04006-C04007;
  N1NMISS=0;
  N1MARK=0;

  DO OVER NOTE1;
     IF NOTE1 NE . THEN N1NMISS+1;
     IF NOTE1 NOT IN (.,.N) THEN N1MARK+1;
  END;

  IF C04005=1 AND (N1MARK >0 OR N1NMISS=0) THEN N1=1;
  ELSE IF C04005 IN (1,.,.A) AND (N1NMISS>0 AND N1MARK=0) THEN DO;
     N1=2;
     C04005=2;
     DO OVER NOTE1;
        IF NOTE1=. THEN NOTE1=.N;
        ELSE NOTE1=.C;
     END;
  END;
  ELSE IF C04005 IN (2,.,.A) AND N1MARK>0 THEN DO;
     N1=3;
     C04005=1;
  END;
  ELSE IF C04005=2 AND (N1NMISS=0 OR (N1NMISS>0 AND N1MARK=0)) THEN DO;
     N1=4;
     DO OVER NOTE1;
        IF NOTE1=. THEN NOTE1=.N;
        ELSE NOTE1=.C;
     END;
  END;
  ELSE IF C04005=.  AND N1NMISS=0 THEN N1=5;
  ELSE IF C04005=.A AND N1NMISS=0 THEN DO;
     N1=6;
     C04005=2;
     DO OVER NOTE1;
        NOTE1=.N;
     END;
  END;
  DROP N1MARK N1NMISS;


/** Note2  -- C04007, C04008: Personal doctor or nurse **/

  IF C04007 IN (.N, .C) THEN N2=1;
  ELSE IF C04007 IN (1,.,.A) AND (C04008 GT 0 OR C04008 IN(.A)) THEN DO;
     C04007=2;
     N2=2;
  END;
  ELSE IF C04007=1 AND C04008 IN (.) THEN DO;
     C04008=.N;
     N2=3;
  END;
  ELSE IF C04007=2 AND C04008 IN (1,2,3,.,.A) THEN N2=4;
  ELSE IF C04007=. AND C04008=. THEN N2=5;
  ELSE IF C04007=.A AND C04008=. THEN DO;
     C04007=1;
     C04008=.N;
     N2=6;
  END;


/** Note 3 -- C04010, C04011, C04012: Personal doctor or nurse **/

  ARRAY NOTE3 C04011 C04012;
  N3MARK=0;
  N3NMISS=0;
```

```
  DO OVER NOTE3;
     IF NOTE3 NE . THEN N3NMISS+1;
     IF NOTE3 NOT IN (.N,.) THEN N3MARK+1;
  END;

  IF C04010=1 AND (N3NMISS=0 OR N3MARK>0) THEN N3=1;
  ELSE IF C04010 IN (2,.,.A) AND N3MARK>0 THEN DO;
     C04010=1;
      N3=2;
  END;
  ELSE IF C04010=2 AND (N3NMISS=0) THEN DO;
     N3=3;
     DO OVER NOTE3;
        IF NOTE3=. THEN NOTE3=.N;
        ELSE NOTE3=.C;
     END;
  END;
  ELSE IF C04010=. AND  N3NMISS=0 THEN N3=4;
  ELSE IF C04010=.A AND N3NMISS=0 THEN DO;
     C04010=2;
     N3=5;
     DO OVER NOTE3;
        NOTE3=.N;
     END;
  END;
  DROP N3NMISS N3MARK;


/* NOTE 4: C04013, C04014-C04016: Primary Care Manager */
  ARRAY NOTE4 C04014-C04016;
  N4MARK=0;
  N4NMISS=0;

  DO OVER NOTE4;
     IF NOTE4 NE . THEN N4NMISS+1 ;
     IF NOTE4 NOT IN (.N, .) THEN N4MARK+1;
  END;

  IF C04013=1 AND N4NMISS=0 THEN N4=1;
  ELSE IF C04013 IN (1,.A,.) AND N4MARK > 0 THEN DO;
     C04013=1;
     N4=2;
  END;
  ELSE IF C04013 IN (1,.A,.) AND N4NMISS>0 AND N4MARK=0 THEN DO;
     C04013=2;
     N4=3;
     DO OVER NOTE4;
        IF NOTE4= . THEN NOTE4 = .N;
        ELSE NOTE4= .C;
     END;
  END;
  ELSE IF C04013 IN (2,.D,.N) AND N4NMISS=0 THEN DO;
     N4=4;
     DO OVER NOTE4;
        NOTE4 = .N;
     END;
  END;
  ELSE IF C04013 IN (2,.D,.N) AND N4MARK>0 THEN DO;
     N4=5;
     C04013=1;
  END;
  ELSE IF C04013 IN (2,.D,.N) AND N4NMISS>0 AND N4MARK=0 THEN DO;
     N4=6;
     C04013=2;
     DO OVER NOTE4;
        IF NOTE4=. THEN NOTE4=.N;
        ELSE NOTE4=.C;
     END;
  END;
  ELSE IF C04013=.A AND N4NMISS=0 THEN DO;
     N4=7;
     C04013=.D;
     DO OVER NOTE4;
```

```
      IF NOTE4=. THEN NOTE4=.N;
      ELSE NOTE4=.C;
   END;
END;
ELSE IF C04013=. AND N4NMISS=0 THEN N4=8;

DROP N4MARK N4NMISS;



/** Note5  -- C04017, C04018: Specialist **/

IF C04017=1 AND C04018 IN (1,2,3,.,.A) THEN N5=1;
ELSE IF C04017 IN (1,.,.A) AND C04018=.N THEN DO;
   C04017=2;
   C04018=.C;
   N5=2;
END;
ELSE IF C04017 IN (2,.,.A) AND (C04018 GT 0 OR C04018 IN(.A)) THEN DO;
   C04017=1;
   N5=3;
END;
ELSE IF C04017=2 AND C04018 IN (.N,.) THEN DO;
   IF C04018=. THEN C04018=.N;
   ELSE C04018=.C;
   N5=4;
END;
ELSE IF C04017=. AND C04018=. THEN N5=5;
ELSE IF C04017=.A AND C04018=. THEN DO;
   C04017=2;
   C04018=.N;
   N5=6;
END;



/** Note 6 -- C04019, C04020, C04021: Child See Specialist **/

ARRAY NOTE6 C04020 C04021;
N6MARK=0;
N6NMISS=0;

DO OVER NOTE6;
   IF NOTE6 NE . THEN N6NMISS+1;
   IF NOTE6 NOT IN (.N,.) THEN N6MARK+1;
END;

IF C04019=1 AND (N6NMISS=0 OR N6MARK>0) THEN N6=1;
ELSE IF C04019 IN (1,.,.A) AND N6NMISS>0 AND N6MARK=0 THEN DO;
   C04019=2;
   N6=2;
   DO OVER NOTE6;
      IF NOTE6=. THEN NOTE6=.N;
      ELSE NOTE6=.C;
   END;
END;
ELSE IF C04019 IN (2,.,.A) AND N6MARK>0 THEN DO;
   C04019=1;
    N6=3;
END;
ELSE IF C04019=2 AND (N6NMISS=0 OR (N6NMISS>0 AND N6MARK=0)) THEN DO;
   N6=4;
   DO OVER NOTE6;
      IF NOTE6=. THEN NOTE6=.N;
      ELSE NOTE6=.C;
   END;
END;
ELSE IF C04019=. AND  N6NMISS=0 THEN N6=5;
ELSE IF C04019=.A AND N6NMISS=0 THEN DO;
   C04019=2;
   N6=6;
   DO OVER NOTE6;
      NOTE6=.N;
   END;
```

```
END;
DROP N6NMISS N6MARK;



/** Note 7 -- call during regular office hours:  C04022, C04023 **/

IF C04022 = 1 AND (C04023 GE 1 OR C04023 IN (., .A)) THEN N7=1;
ELSE IF C04022 IN (1,.,.A) AND C04023=.N THEN DO;
   N7=2;
   C04022=2;
   C04023=.C;
END;
ELSE IF C04022 IN (2,.,.A) AND (C04023 GE 1 OR C04023=.A) THEN DO;
   N7=3;
   C04022=1;
END;
ELSE IF C04022=2 AND C04023 IN (.N,.) THEN DO;
   N7=4;
   IF C04023=. THEN C04023=.N;
   ELSE C04023=.C;
END;
ELSE IF C04022=.  AND C04023=. THEN N7=5;
ELSE IF C04022=.A AND C04023=. THEN DO;
   N7=6;
   C04022=2;
   C04023=.N;
END;



/** Note 8 -- Needed care right away:  C04024, C04025 **/

IF C04024 = 1 AND (C04025 GE 1 OR C04025 IN (., .A)) THEN N8=1;
ELSE IF C04024 IN (1,.,.A) AND C04025=.N THEN DO;
   N8=2;
   C04024=2;
   C04025=.C;
END;
ELSE IF C04024 IN (2,.,.A) AND (C04025 GE 1 OR C04025=.A) THEN DO;
   N8=3;
   C04024=1;
END;
ELSE IF C04024=2 AND C04025 IN (.N,.) THEN DO;
   N8=4;
   IF C04025=. THEN C04025=.N;
   ELSE C04025=.C;
END;
ELSE IF C04024=.  AND C04025=. THEN N8=5;
ELSE IF C04024=.A AND C04025=. THEN DO;
   N8=6;
   C04024=2;
   C04025=.N;
END;



/** Note 9 -- Needed care right away:  C04026, C04027 **/

IF C04026 = 1 AND (C04027 GE 1 OR C04027 IN (., .A)) THEN N9=1;
ELSE IF C04026 IN (1,.,.A) AND C04027=.N THEN DO;
   N9=2;
   C04026=2;
   C04027=.C;
END;
ELSE IF C04026 IN (2,.,.A) AND (C04027 GE 1 OR C04027=.A) THEN DO;
   N9=3;
   C04026=1;
END;
ELSE IF C04026=2 AND C04027 IN (.N,.) THEN DO;
   N9=4;
   IF C04027=. THEN C04027=.N;
   ELSE C04027=.C;
```

```
END;
ELSE IF C04026=.  AND C04027=. THEN N9=5;
ELSE IF C04026=.A AND C04027=. THEN DO;
   N9=6;
   C04026=2;
   C04027=.N;
END;



/** Note 10 - doctor's office or clinic:  C04029 -- C04053 **/

ARRAY NOTE10  C04030-C04053;

N10NMISS=0;
N10MARK=0;

DO OVER NOTE10;
   IF NOTE10 NE . THEN N10NMISS+1;
   IF NOTE10 NOT IN (., .N) THEN N10MARK+1;
END;

IF C04029=1 THEN DO;
   N10=1;
   DO OVER NOTE10;
      IF NOTE10 =.  THEN NOTE10=.N;
      ELSE NOTE10=.C;
   END;
END;
ELSE IF C04029 IN (.,.A) AND N10MARK>0 THEN DO;
   N10=2;
   DO OVER NOTE10;
      IF NOTE10 =.N  THEN NOTE10=.;
   END;
END;
ELSE IF C04029 GE 2 AND (N10NMISS=0 OR N10MARK>0) THEN DO;
   N10=3;
   DO OVER NOTE10;
      IF NOTE10 =.N  THEN NOTE10=.;
   END;
END;
ELSE IF C04029 IN (2,3,4,5,6,7,.,.A) AND N10NMISS> 0 AND N10MARK=0 THEN DO;
   N10=4;
   C04029=1;
   DO OVER NOTE10;
      IF NOTE10=. THEN NOTE10=.N;
      ELSE NOTE10=.C;
   END;
END;
ELSE IF C04029=.  AND N10NMISS= 0 THEN N10=5;
ELSE IF C04029=.A AND N10NMISS= 0 THEN DO;
   N10=6;
   C04029 = 1;
   DO OVER NOTE10;
      NOTE10=.N;
   END;
END;

DROP N10NMISS N10MARK;


/** Note 11 -- Needed care, tests, or treatment :  C04030, C04031 **/

IF C04030 IN (.N, .C) THEN  N11=1;
ELSE IF C04030 = 1 AND (C04031 GE 1 OR C04031 IN (., .A)) THEN N11=2;
ELSE IF C04030 IN (1,.,.A) AND C04031=.N THEN DO;
   N11=3;
   C04030=2;
   C04031=.C;
END;
ELSE IF C04030 IN (2,.,.A) AND (C04031 GE 1 OR C04031=.A) THEN DO;
   N11=4;
   C04030=1;
END;
```

```
  ELSE IF C04030=2 AND C04031 IN (.N,.) THEN DO;
     N11=5;
     IF C04031=. THEN C04031=.N;
     ELSE C04031=.C;
  END;
  ELSE IF C04030=.  AND C04031=. THEN N11=6;
  ELSE IF C04030=.A AND C04031=. THEN DO;
     N11=7;
     C04030=2;
     C04031=.N;
  END;



  /** Note 12 -- Approval for child's health care :  C04032, C04033 **/

  IF C04032 IN (.N, .C) THEN  N12=1;
  ELSE IF C04032 = 1 AND (C04033 GE 1 OR C04033 IN (., .A)) THEN N12=2;
  ELSE IF C04032 IN (1,.,.A) AND C04033=.N THEN DO;
     N12=3;
     C04032=2;
     C04033=.C;
  END;
  ELSE IF C04032 IN (2,.,.A) AND (C04033 GE 1 OR C04033=.A) THEN DO;
     N12=4;
     C04032=1;
  END;
  ELSE IF C04032=2 AND C04033 IN (.N,.) THEN DO;
     N12=5;
     IF C04033=. THEN C04033=.N;
     ELSE C04033=.C;
  END;
  ELSE IF C04032=.  AND C04033 IN (.) THEN N12=6;
  ELSE IF C04032=.A AND C04033 IN (.) THEN DO;
     N12=7;
     C04032=2;
     C04033=.N;
  END;


  /** NOTE13 - child able to talk with doctors: C04040, C04041  **/
  IF C04040 IN (.N, .C) THEN  N13=1;
  ELSE IF C04040 = 1 AND (C04041 GE 1 OR C04041 IN (., .A, .D)) THEN N13=2;
  ELSE IF C04040 IN (1,.,.A) AND C04041=.N THEN DO;
     N13=3;
     C04040=2;
     C04041=.C;
  END;
  ELSE IF C04040 IN (2,.,.A) AND (C04041 GE 1 OR C04041=.A) THEN DO;
     N13=4;
     C04040=1;
  END;
  ELSE IF C04040=2 AND C04041 IN (.N,.,.D) THEN DO;
     N13=5;
     IF C04041=. THEN C04041=.N;
     ELSE C04041=.C;
  END;
  ELSE IF C04040=.  AND C04041 IN (.,.D) THEN N13=6;
  ELSE IF C04040=.A AND C04041 IN (.,.D) THEN DO;
     N13=7;
     C04040=2;
     C04041=.N;
  END;



/** Note 14 -- C04043, C04044,C04046: Questions or concerns about child's health **/

  ARRAY NOTE14 C04044-C04046;
  N14MARK=0;
  N14NMISS=0;

IF C04043 IN (.C,.N) THEN N14=1;
ELSE DO;
```

```
  DO OVER NOTE14;
     IF NOTE14 NE . THEN N14NMISS+1;
     IF NOTE14 NOT IN (.N,.) THEN N14MARK+1;
  END;

  IF C04043=1 AND (N14NMISS=0 OR N14MARK>0) THEN N14=2;
  ELSE IF C04043 IN (2,.,.A) AND N14MARK>0 THEN DO;
     C04043=1;
      N14=3;
  END;
  ELSE IF C04043=2 AND (N14NMISS=0) THEN DO;
     N14=4;
     DO OVER NOTE14;
        IF NOTE14=. THEN NOTE14=.N;
        ELSE NOTE14=.C;
     END;
  END;
  ELSE IF C04043=. AND  N14NMISS=0 THEN N14=5;
  ELSE IF C04043=.A AND N14NMISS=0 THEN DO;
     C04043=2;
     N14=6;
     DO OVER NOTE14;
        NOTE14=.N;
     END;
  END;

  DROP N14NMISS N14MARK;

END;


/** Note 15 -- C04047, C04048-C04051: Decisions made about child's healthcare **/

  ARRAY NOTE15 C04048-C04051;
  N15MARK=0;
  N15NMISS=0;

IF C04047 IN (.C,.N) AND C04048 IN (.C,.N) AND C04049 IN (.C,.N) AND
   C04050 IN (.C,.N) AND C04051 IN (.C,.N)
THEN N15=1;
ELSE DO;
  DO OVER NOTE15;
     IF NOTE15 NE . THEN N15NMISS+1;
     IF NOTE15 NOT IN (.N,.) THEN N15MARK+1;
  END;

  IF C04047=1 AND (N15NMISS=0 OR N15MARK>0) THEN N15=2;
  ELSE IF C04047 IN (2,.,.A) AND N15MARK>0 THEN DO;
     C04047=1;
      N15=3;
  END;
  ELSE IF C04047=2 AND (N15NMISS=0) THEN DO;
     N15=4;
     DO OVER NOTE15;
        IF NOTE15=. THEN NOTE15=.N;
        ELSE NOTE15=.C;
     END;
  END;
  ELSE IF C04047=. AND  N15NMISS=0 THEN N15=5;
  ELSE IF C04047=.A AND N15NMISS=0 THEN DO;
     C04047=2;
     N15=6;
     DO OVER NOTE15;
        NOTE15=.N;
     END;
  END;

  DROP N15NMISS N15MARK;

END;


/** Note 16 -- C04054, C04055-C04056: Child enrolled in school **/
```

```
  IF C04054=1 THEN DO;
     IF C04055=1 THEN N16=1;
     ELSE IF C04055=2 THEN DO;
        IF C04056 NE . THEN C04056=.C;
        ELSE C04056 = .N;
        N16=2;
     END;
     ELSE IF C04055 IN (.A, .) THEN DO;
        IF C04056 NE . THEN DO;
           C04055=1;
           N16=3;
        END;
        ELSE N16=4;
     END;
  END;
  ELSE IF C04054=2 THEN DO;
     N16=5;
     IF C04055 NE . THEN C04055= .C;
     ELSE C04055= .N;
     IF C04056 NE . THEN C04056= .C;
     ELSE C04056= .N;
  END;
  ELSE IF C04054 IN (., .A) THEN DO;
     IF C04055=1 THEN DO;
        C04054 = 1;
        N16=6;
     END;
     IF C04055=2 THEN DO;
        IF C04056 NE . THEN C04056=.C;
        ELSE C04056 = .N;
        N16=7;
     END;
     ELSE IF C04055 IN (.A, .) THEN DO;
        IF C04056 NE . THEN DO;
           C04054=1;
           C04055=1;
           N16=8;
        END;
        ELSE N16=9;
     END;
  END;


/* NOTE 17 C04057, C04058-C04059: Special medical equipment or devices*/

  IF C04057=1 THEN DO;
     IF C04058 IN (1,2, ., .A) THEN N17=1;
     ELSE IF C04058=3 THEN DO;
        IF C04059 NE . THEN C04059=.C;
        ELSE C04059 = .N;
        N17=2;
     END;
  END;
  ELSE IF C04057 IN (2, ., .A) AND C04058 IN (1, 2) THEN DO;
     C04057= 1;
     N17=3;
  END;
  ELSE IF C04057=2 THEN DO;
     N17=4;
     IF C04058 NE . THEN C04058= .C;
     ELSE C04058= .N;
     IF C04059 NE . THEN C04059= .C;
     ELSE C04059= .N;
  END;
  ELSE IF C04057 IN (., .A) THEN DO;
     IF C04058=3 THEN DO;
        IF C04059 NE . THEN C04059=.C;
        ELSE C04059 = .N;
        N17=5;
     END;
     ELSE N17=6;
  END;
```

```
/* NOTE 18 C04060, C04061-C04062: Special therapy */

  IF C04060=1 THEN DO;
     IF C04061 IN (1,2, .A, .) THEN N18=1;
     ELSE IF C04061=3 THEN DO;
        IF C04062 NE . THEN C04062=.C;
        ELSE C04062 = .N;
        N18=2;
     END;
  END;
  ELSE IF C04060 IN (2, ., .A) AND C04061 IN (1, 2) THEN DO;
     C04060= 1;
     N18=3;
  END;
  ELSE IF C04060=2 AND C04061 IN (3, ., .A) THEN DO;
     N18=4;
     IF C04061 NE . THEN C04061= .C;
     ELSE C04061= .N;
     IF C04062 NE . THEN C04062= .C;
     ELSE C04062= .N;
  END;
  ELSE IF C04060 IN (., .A)  AND C04061 IN (3, ., .A) THEN DO;
     IF C04061=3 THEN DO;
        IF C04062 NE . THEN C04062=.C;
        ELSE C04062 = .N;
        N18=5;
     END;
     ELSE N18=6;
  END;


/* NOTE 19 C04063, C04064-C04065: Emotional development */

  IF C04063=1 THEN DO;
     IF C04064 IN (1,2, .A, .) THEN N19=1;
     ELSE IF C04064=3 THEN DO;
        IF C04065 NE . THEN C04065=.C;
        ELSE C04065 = .N;
        N19=2;
     END;
  END;
  ELSE IF C04063 IN (2, ., .A) AND C04064 IN (1, 2) THEN DO;
     C04063= 1;
     N19=3;
  END;
  ELSE IF C04063=2  AND C04064 IN (3, ., .A) THEN DO;
     N19=4;
     IF C04064 NE . THEN C04064= .C;
     ELSE C04064= .N;
     IF C04065 NE . THEN C04065= .C;
     ELSE C04065= .N;
  END;
  ELSE IF C04063 IN (., .A)  AND C04064 IN (3, ., .A) THEN DO;
     IF C04064=3 THEN DO;
        IF C04065 NE . THEN C04065=.C;
        ELSE C04065 = .N;
        N19=5;
     END;
     ELSE N19=6;
  END;


/** Note20  -- C04066, C04067: More than 1 kind of health provider **/

  IF C04066=1 AND C04067 IN (1,2,.,.A) THEN N20=1;
  ELSE IF C04066 IN (2,.,.A) AND (C04067 GT 0 OR C04067 IN(.A)) THEN DO;
     C04066=1;
     N20=2;
  END;
  ELSE IF C04066=2 AND C04067 IN (.) THEN DO;
     C04067=.N;
     N20=3;
```

```
END;
ELSE IF C04066=. AND C04067=. THEN N20=4;
ELSE IF C04066=.A AND C04067=. THEN DO;
   C04066=2;
   C04067=.N;
   N20=5;
END;



/** Note 21 - send in any claims:  C04068 - C04071    **/


ARRAY NOTE21 C04069-C04071;

N21MARK=0;
N21NMISS=0;
N21NDK=0;

DO OVER NOTE21;
   IF NOTE21 NE . THEN N21NMISS+1;
   IF NOTE21 NOT IN (.N,.) THEN N21MARK+1;
   IF NOTE21 NOT IN (.,.D) THEN N21NDK+1;
END;

IF C04068=1 AND (N21NMISS=0 OR (N21MARK>0 and N21NDK>0) or N21NDK=0) THEN DO;
   N21=1;
   DO OVER NOTE21;
      IF NOTE21=.N THEN NOTE21=.;
   END;
END;
ELSE IF C04068 IN (1,.D,.,.A) AND N21NMISS>0 AND N21MARK=0 THEN DO;
   N21=2;
   C04068=2;
   DO OVER NOTE21;
      IF NOTE21=. THEN NOTE21=.N;
      ELSE NOTE21=.C;
   END;
END;
ELSE IF C04068=.D AND N21MARK>0 AND N21NDK>0 THEN DO;
   N21=3;
   C04068=1;
   DO OVER NOTE21;
      IF NOTE21=.N THEN NOTE21=.;
   END;
END;
ELSE IF C04068=.D AND (N21NDK=0) THEN DO;
   N21=4;
   DO OVER NOTE21;
      IF NOTE21=. THEN NOTE21=.N;
      ELSE NOTE21=.C;
   END;
END;
ELSE IF C04068=.D AND N21NMISS=0 THEN DO;
   N21=5;
   DO OVER NOTE21;
      NOTE21=.N;
   END;
END;
ELSE IF C04068 IN (2,.,.A) AND ((N21MARK>0 AND N21NDK>0) OR (N21NDK=0)) THEN DO;
   C04068=1;
   N21=6;
   DO OVER NOTE21;
      IF NOTE21=.N THEN NOTE21=.;
   END;
END;
ELSE IF C04068 IN (2) AND (N21NMISS=0 OR (N21NMISS>0 AND N21MARK=0)) THEN DO;
   N21=7;
   DO OVER NOTE21;
      IF NOTE21=. THEN NOTE21=.N;
      ELSE NOTE21=.C;
   END;
END;
```

```
ELSE IF C04068=.  AND N21NMISS=0 THEN N21=8;
ELSE IF C04068=.A AND N21NMISS=0 THEN DO;
   C04068=2;
   N21=9;
   DO OVER NOTE21;
      NOTE21=.N;
   END;
END;

DROP N21NMISS N21MARK N21NDK;



/** Note 22 - written materials: C04072, C04073       **/

IF C04072=1 AND C04073 IN (1,2,3,.,.A) THEN N22=1;
ELSE IF C04072 IN (1,.,.A) AND C04073=.N THEN DO;
   N22=2;
   C04072=2;
   C04073=.C;
END;
ELSE IF C04072 IN (2,.,.A) AND C04073 IN (1,2,3,.A) THEN DO;
   C04072=1;
   N22=3;
END;
ELSE IF C04072=2 AND C04073 IN (., .N) THEN DO;
   N22=4;
   IF C04073=. THEN C04073=.N;
   ELSE C04073=.C;
END;
ELSE IF C04072=.  AND C04073= . THEN N22=5;
ELSE IF C04072=.A AND C04073= . THEN DO;
   N22=6;
   C04072=2;
   C04073=.N;
END;



/** Note 23 - customer service:  C04074, C04075    **/

IF C04074=1 AND C04075 IN (1,2,3,.,.A) THEN N23=1;
ELSE IF C04074 IN (1,.,.A) AND C04075=.N THEN DO;
   N23=2;
   C04074=2;
   C04075=.C;
END;
ELSE IF C04074 IN (2,.,.A) AND C04075 IN (1,2,3,.A) THEN DO;
   N23=3;
   C04074=1;
END;
ELSE IF C04074=2 AND C04075 IN (.,.N) THEN DO;
   N23=4;
   IF C04075=. THEN C04075=.N;
   ELSE C04075 =.C;
END;
ELSE IF C04074=.  AND C04075=. THEN N23=5;
ELSE IF C04074=.A AND C04075=. THEN DO;
   N23=6;
   C04074=2;
   C04075=.N;
END;



/** Note 24 - paperwork:  C04076, C04077     **/

IF C04076=1 AND C04077 IN (1,2,3,.,.A) THEN N24=1;
ELSE IF C04076 IN (1,.,.A) AND C04077=.N THEN DO;
   N24=2;
   C04076=2;
   C04077=.C;
END;
ELSE IF C04076 IN (2,.,.A) AND C04077 IN (1,2,3,.A) THEN DO;
```

```
     N24=3;
     C04076=1;
  END;
  ELSE IF C04076=2 AND C04077 IN (.N,.) THEN DO;
     N24=4;
     IF C04077=. THEN C04077=.N;
     ELSE C04077=.C;
  END;
  ELSE IF C04076=.  AND C04077=. THEN N24=5;
  ELSE IF C04076=.A AND C04077=. THEN DO;
     N24=6;
     C04076=2;
     C04077=.N;
  END;



/* NOTE 25 C04079, C04080-C04081: Get a prescription*/

  IF C04079=1 THEN DO;
     IF C04080 IN (1,2, .A, .) THEN N25=1;
     ELSE IF C04080=3 THEN DO;
        IF C04081 NE . THEN C04081=.C;
        ELSE C04081 = .N;
        N25=2;
     END;
  END;
  ELSE IF C04079 IN (2, ., .A) AND C04080 IN (1, 2) THEN DO;
     C04079= 1;
     N25=3;
  END;
  ELSE IF C04079=2  AND C04080 IN (3, ., .A)  THEN DO;
     N25=4;
     IF C04080 NE . THEN C04080= .C;
     ELSE C04080= .N;
     IF C04081 NE . THEN C04081= .C;
     ELSE C04081= .N;
  END;
  ELSE IF C04079 IN (., .A)   AND C04080 IN (3, ., .A) THEN DO;
     IF C04080=3 THEN DO;
        IF C04081 NE . THEN C04081=.C;
        ELSE C04081 = .N;
        N25=5;
     END;
     ELSE N25=6;
  END;


/* NOTE 26 C04089, C04090-C04091: Medicine prescribed by doctor*/

  IF C04089=1 THEN DO;
     IF C04090=1 THEN N26=1;
     ELSE IF C04090=2 THEN DO;
        IF C04091 NE . THEN C04091=.C;
        ELSE C04091 = .N;
        N26=2;
     END;
     ELSE IF C04090 IN (.A, .) THEN DO;
        IF C04091 NE . THEN DO;
           C04090=1;
           N26=3;
        END;
        ELSE N26=4;
     END;
  END;
  ELSE IF C04089=2 THEN DO;
     N26=5;
     IF C04090 NE . THEN C04090= .C;
     ELSE C04090= .N;
     IF C04091 NE . THEN C04091= .C;
     ELSE C04091= .N;
  END;
  ELSE IF C04089 IN (., .A) THEN DO;
     IF C04090=2 THEN DO;
```

```
      IF C04091 NE . THEN C04091=.C;
      ELSE C04091 = .N;
      N26=6;
   END;
   ELSE N26=7;
END;


/* NOTE 27 C04092, C04093-C04094: Medical, health, education service*/

  IF C04092=1 THEN DO;
     IF C04093=1 THEN N27=1;
     ELSE IF C04093=2 THEN DO;
        IF C04094 NE . THEN C04094=.C;
        ELSE C04094 = .N;
        N27=2;
     END;
     ELSE IF C04093 IN (.A, .) THEN DO;
        IF C04094 NE . THEN DO;
           C04093=1;
           N27=3;
        END;
        ELSE N27=4;
     END;
  END;
  ELSE IF C04092=2 THEN DO;
     N27=5;
     IF C04093 NE . THEN C04093= .C;
     ELSE C04093= .N;
     IF C04094 NE . THEN C04094= .C;
     ELSE C04094= .N;
  END;
  ELSE IF C04092 IN (., .A) THEN DO;
     IF C04093=2 THEN DO;
        IF C04094 NE . THEN C04094=.C;
        ELSE C04094 = .N;
        N27=6;
     END;
     N27=7;
  END;


/* NOTE 28 C04095, C04096-C04097: Child limited or prevented*/

  IF C04095=1 THEN DO;
     IF C04096=1 THEN N28=1;
     ELSE IF C04096=2 THEN DO;
        IF C04097 NE . THEN C04097=.C;
        ELSE C04097 = .N;
        N28=2;
     END;
     ELSE IF C04096 IN (.A, .) THEN DO;
        IF C04097 NE . THEN DO;
           C04096=1;
           N28=3;
        END;
        ELSE N28=4;
     END;
  END;
  ELSE IF C04095=2 THEN DO;
     N28=5;
     IF C04096 NE . THEN C04096= .C;
     ELSE C04096= .N;
     IF C04097 NE . THEN C04097= .C;
     ELSE C04097= .N;
  END;
  ELSE IF C04095 IN (., .A) THEN DO;
     IF C04096=2 THEN DO;
        IF C04097 NE . THEN C04097=.C;
        ELSE C04097 = .N;
        N28=6;
     END;
```

```
     ELSE N28=7;
  END;



/* NOTE 29 C04098, C04099-C04100: Special Therapy*/

  IF C04098=1 THEN DO;
     IF C04099=1 THEN N29=1;
     ELSE IF C04099=2 THEN DO;
        IF C04100 NE . THEN C04100=.C;
        ELSE C04100 = .N;
        N29=2;
     END;
     ELSE IF C04099 IN (.A, .) THEN DO;
        IF C04100 NE . THEN DO;
           C04099=1;
           N29=3;
        END;
        ELSE N29=4;
     END;
  END;
  ELSE IF C04098=2 THEN DO;
     N29=5;
     IF C04099 NE . THEN C04099= .C;
     ELSE C04099= .N;
     IF C04100 NE . THEN C04100= .C;
     ELSE C04100= .N;
  END;
  ELSE IF C04098 IN (., .A) THEN DO;
     IF C04099=2 THEN DO;
        IF C04100 NE . THEN C04100=.C;
        ELSE C04100 = .N;
        N29=6;
     END;
     N29=7;
  END;



  /** Note 30:  C04101, C04102:  Need treatment or counseling **/

  IF C04101=1 THEN N30=1;
  ELSE IF C04101=2 AND C04102=. THEN DO;
     N30=2;
     C04102=.N;
  END;
  ELSE IF C04101 IN (2,.,.A) AND C04102 IN (1,2,.A) THEN DO;
     N30=3;
     C04101=1;
  END;
  ELSE IF C04101=.  AND C04102=. THEN N30=4;
  ELSE IF C04101=.A AND C04102=. THEN DO;
     N30=5;
     C04101=2;
     C04102=.N;
  END;

NOSURVEY:

  /* missing values */

  ARRAY MISS MISS_9 MISS_8 MISS_7 MISS_6 MISS_5 MISS_4 MISS_1 ;
  MISS_TOT=0;
  DO OVER MISS;
     MISS=0;
  END;
  ARRAY MISSARAY &VARLIST2;


  DO OVER MISSARAY;
     IF (MISSARAY EQ -9 ) THEN MISS_9=MISS_9 + 1;
     ELSE IF (MISSARAY EQ -8) THEN MISS_8=MISS_8 + 1;
     ELSE IF (MISSARAY EQ -7) THEN MISS_7=MISS_7 + 1;
```

```
     ELSE IF (MISSARAY EQ -6) THEN MISS_6=MISS_6 + 1;
     ELSE IF (MISSARAY EQ -5) THEN MISS_5=MISS_5 + 1;
     ELSE IF (MISSARAY EQ -4) THEN MISS_4=MISS_4 + 1;
     ELSE IF (MISSARAY EQ -1) THEN MISS_1=MISS_1 + 1;
  END;

  DO OVER MISS;
     MISS_TOT=MISS_TOT + MISS;
  END;

  OUTPUT;

RUN;


PROC CONTENTS DATA=OUT.&OUTDATA;
RUN;

PROC MEANS DATA=OUT.&OUTDATA N NMISS MIN MAX SUM MEAN;
   WHERE FLAG_FIN='1';
   VAR MISS_TOT MISS_1 MISS_4 MISS_5 MISS_6-MISS_9;
   TITLE3 'Frequency Checks - Missing Value Totals';
RUN;


PROC FREQ DATA=OUT.&OUTDATA;
   WHERE FLAG_FIN='1';
   TABLES &VARLIST1.

C04001      *C04001_O
C04002      *C04002_O
C04003      *C04003_O
C04004A     *C04004AO
C04004B     *C04004BO
C04004C     *C04004CO
C04004D     *C04004DO
C04004E     *C04004EO
C04004F     *C04004FO
C04004G     *C04004GO
C04004H     *C04004HO
C04004I     *C04004IO
C04005      *C04005_O
C04006      *C04006_O
C04007      *C04007_O
C04008      *C04008_O
C04009      *C04009_O
C04010      *C04010_O
C04011      *C04011_O
C04012      *C04012_O
C04013      *C04013_O
C04014      *C04014_O
C04015      *C04015_O
C04016      *C04016_O
C04017      *C04017_O
C04018      *C04018_O
C04019      *C04019_O
C04020      *C04020_O
C04021      *C04021_O
C04022      *C04022_O
C04023      *C04023_O
C04024      *C04024_O
C04025      *C04025_O
C04026      *C04026_O
C04027      *C04027_O
C04028      *C04028_O
C04029      *C04029_O
C04030      *C04030_O
C04031      *C04031_O
C04032      *C04032_O
C04033      *C04033_O
C04034      *C04034_O
C04035      *C04035_O
C04036      *C04036_O
C04037      *C04037_O
```

```
C04038      *C04038_O
C04039      *C04039_O
C04040      *C04040_O
C04041      *C04041_O
C04042      *C04042_O
C04043      *C04043_O
C04044      *C04044_O
C04045      *C04045_O
C04046      *C04046_O
C04047      *C04047_O
C04048      *C04048_O
C04049      *C04049_O
C04050      *C04050_O
C04051      *C04051_O
C04052      *C04052_O
C04053      *C04053_O
C04054      *C04054_O
C04055      *C04055_O
C04056      *C04056_O
C04057      *C04057_O
C04058      *C04058_O
C04059      *C04059_O
C04060      *C04060_O
C04061      *C04061_O
C04062      *C04062_O
C04063      *C04063_O
C04064      *C04064_O
C04065      *C04065_O
C04066      *C04066_O
C04067      *C04067_O
C04068      *C04068_O
C04069      *C04069_O
C04070      *C04070_O
C04071      *C04071_O
C04072      *C04072_O
C04073      *C04073_O
C04074      *C04074_O
C04075      *C04075_O
C04076      *C04076_O
C04077      *C04077_O
C04078      *C04078_O
C04079      *C04079_O
C04080      *C04080_O
C04081      *C04081_O
C04082      *C04082_O
C04083A     *C04083AO
C04083B     *C04083BO
C04084      *C04084_O
C04085      *C04085_O
C04086      *C04086_O
C04087      *C04087_O
C04088      *C04088_O
C04089      *C04089_O
C04090      *C04090_O
C04091      *C04091_O
C04092      *C04092_O
C04093      *C04093_O
C04094      *C04094_O
C04095      *C04095_O
C04096      *C04096_O
C04097      *C04097_O
C04097      *C04097_O
C04099      *C04099_O
C04100      *C04100_O
C04101      *C04101_O
C04102      *C04102_O
C04103      *C04103_O
C04104      *C04104_O
C04105A     *C04105AO
C04105B     *C04105BO
C04105C     *C04105CO
C04105D     *C04105DO
C04105E     *C04105EO
C04105F     *C04105FO
```

```
C04106      *C04106_O
C04107      *C04107_O
C04108      *C04108_O
C04109      *C04109_O
C04110      *C04110_O


/MISSING LIST;
   TITLE3 'Frequency Checks - Formatted Response Variables';
RUN;

PROC FREQ DATA=OUT.&OUTDATA;
   WHERE FLAG_FIN='1';
   TABLES N1-N30/MISSING;
   TITLE3 'Frequency Checks - Coding Scheme Notes';
RUN;


%MACRO GETFREQS (TABLES, NOTE);

 PROC FREQ DATA=OUT.&OUTDATA;
    WHERE FLAG_FIN='1';
    TABLES &TABLES/MISSING LIST;
    FORMAT _ALL_ ;
    TITLE3 "CODING SCHEME FOR NOTE &NOTE";
 RUN;

%MEND GETFREQS;

PROC FREQ DATA=IN.&INDATA;
   TABLES FLAG_FIN;
RUN;

PROC FREQ DATA=OUT.&OUTDATA;
   TABLES FLAG_FIN;
RUN;



%GETFREQS(N1*C04005_O*C04006_O*C04007_O*C04005*C04006*C04007,1);
%GETFREQS(N2*C04007_O*C04008_O*C04007*C04008*C04007,2);
%GETFREQS(N3*C04010_O*C04011_O*C04012_O*C04010*C04011*C04012,3);
%GETFREQS(N4*C04013_O*C04014_O*C04015_O*C04016_O*C04013*C04014*C04015*C04016,4);
%GETFREQS(N5*C04017_O*C04018_O*C04017*C04018,5);
%GETFREQS(N6*C04019_O*C04020_O*C04021_O*C04019*C04020*C04021,6);
%GETFREQS(N7*C04022_O*C04023_O*C04022*C04023,7);
%GETFREQS(N8*C04024_O*C04025_O*C04024*C04025,8);
%GETFREQS(N9*C04026_O*C04027_O*C04026*C04027,9);
%GETFREQS(N10*C04029_O*C04030_O*C04031_O*C04032_O*C04033_O*C04034_O*C04035_O*C04029,10);
%GETFREQS(N11*C04030_O*C04031_O*C04030*C04031,11);
%GETFREQS(N12*C04032_O*C04032_O*C04032*C04033,12);
%GETFREQS(N13*C04040_O*C04041_O*C04040*C04041,13);
%GETFREQS(N14*C04043_O*C04044_O*C04045_O*C04046_O*C04043*C04044*C04045*C04046,14);
%GETFREQS(N15*C04047_O*C04048_O*C04049_O*C04050_O*C04051_O*C04047,15);
%GETFREQS(N16*C04054_O*C04055_O*C04056_O*C04054*C04055*C04056,16);
%GETFREQS(N17*C04057_O*C04058_O*C04059_O*C04057*C04058*C04059,17);
%GETFREQS(N18*C04060_O*C04061_O*C04062_O*C04060*C04061*C04062,18);
%GETFREQS(N19*C04063_O*C04064_O*C04065_O*C04063*C04064*C04065,19);
%GETFREQS(N20*C04066_O*C04067_O*C04066*C04067,20);
%GETFREQS(N21*C04068_O*C04069_O*C04070_O*C04071_O*C04068*C04069*C04070*C04071,21);
%GETFREQS(N22*C04072_O*C04073_O*C04072*C04073,22);
%GETFREQS(N23*C04074_O*C04075_O*C04074*C04075,23);
%GETFREQS(N24*C04076_O*C04077_O*C04076*C04077,24);
%GETFREQS(N25*C04079_O*C04080_O*C04081_O*C04079*C04080*C04081,25);
%GETFREQS(N26*C04089_O*C04090_O*C04091_O*C04089*C04090*C04091,26);
%GETFREQS(N27*C04092_O*C04093_O*C04094_O*C04092*C04093*C04094,27);
%GETFREQS(N28*C04095_O*C04096_O*C04097_O*C04095*C04096*C04097,28);
%GETFREQS(N29*C04098_O*C04099_O*C04100_O*C04098*C04099*C04100,29);
%GETFREQS(N30*C04101_O*C04102_O*C04101*C04102,30);
```

E.3 WEIGHTING\SELECTC.SAS - CREATE RECORD SELECTION FLAG FOR RECORD SELECTION.

```
*************************************************************************
*
* PROGRAM:  SELECTC.SAS
* TASK:     2004 CHILD DOD HEALTH CARE SURVEY ANALYSIS (6077-220)
* PURPOSE:  ASSIGN FINAL STATUS FOR RECORD SELECTION PURPOSES.
* WRITTEN:  12/14/2000 BY KEITH RATHBUN
*
* MODIFIED: 1) 08/31/2001 BY KEITH RATHBUN, Adapted from the Adult 2000
*              quarterly version to accomodate the Child Q3 2000 survey.
*           2) 09/16/2002 BY KEITH RATHBUN, Updated for Child Q3
*              2002 Survey.  Added FLAG_FIN = 23,24 for FNSTATUS = 20.
*           3) 09/18/2003 BY KEITH RATHBUN, Updated for Child Q3
*              2003 Survey.
*           4) 09/17/2004 BY KEITH RATHBUN, Updated for Child Q3
*              2004 Survey.
*           5) 09/23/2004 BY KEITH RATHBUN, Added code to assign flag_fin
*              for ineligibles (determined by STI) at time of address update
*              prior to fielding using the CDead.sd2 file.
*
* INPUTS:   1) CSCHM04C.SD2 - 2004 Q3 Child DOD Health Survey Data
*           2) CDead.sd2 - File from STI containing eligibles
*              (DBMSCopied from child_deceased.dbf)
*
* OUTPUTS:  1) SELECTC.SD2 - 2004 Q3 Child DOD Health Survey Data w/FNSTATUS
*
*************************************************************************
*;
LIBNAME IN     v612  "..\..\DATA\CFINAL";
LIBNAME OUT    v612  "..\..\DATA\CFINAL";
LIBNAME LIBRARY v612 "..\..\DATA\CFINAL\FMTLIB";

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER;

PROC SORT DATA=IN.CDEAD(KEEP=MPRID PNDTHCD) OUT=DEAD; BY MPRID; RUN;

DATA DEAD;
   SET DEAD;
   BY MPRID;
   IF FIRST.MPRID THEN DEAD = 0; RETAIN DEAD;
   IF PNDTHCD = "Y" THEN DEAD = 1;
   IF LAST.MPRID THEN DO;
      IF DEAD = 1 THEN FLAG_FIN = "25";
      ELSE FLAG_FIN = "26";
      OUTPUT;
   END;
   KEEP MPRID FLAG_FIN;
RUN;

PROC SORT DATA=IN.CSCHM04C OUT=TEMPC1; BY MPRID; RUN;

*************************************************************************
* Merge updated FLAG_FIN variable onto the coding scheme file.
*************************************************************************;
DATA MERGDEAD;
   MERGE TEMPC1(IN=IN1) DEAD(IN=IN2);
   BY MPRID;

   LENGTH STIELIG $3;
   IF IN1 AND IN2 THEN STIELIG  = "NO";
   ELSE STIELIG  = "YES";
   LABEL STIELIG  = "Eligible at time of STI address update";

   IF IN1; *Only KEEP the records in the coding scheme file;
   IF IN2 AND NOT IN1 THEN PUT "ERROR: MPRID not matched with MPR sample " MPRID;
RUN;

DATA TEMPC2 OUT.DUPSC;
   SET MERGDEAD;
   BY MPRID;
   ************************************************************************
   * Count key variables (Total=24), 50% rule = GE 12
```

```
   ************************************************************************;
   ARRAY KEYVAR C04002  C04003  C04005  C04013  C04017  C04022  C04026
                C04024  C04028  C04029  C04053  C04068  C04072
                C04074  C04076  C04078  C04082  C04103  C04104
                C04106  C04107  C04108  C04110
                 ;
   KEYCOUNT = 0;
   DO I = 1 TO DIM(KEYVAR); DROP I;
      IF KEYVAR(I) NOT IN (.,.A,.O,.I,.B) THEN KEYCOUNT = KEYCOUNT + 1;
   END;
   ************************************************************************
   * Count question 105 (Child's Race) - multiple response item.
   ************************************************************************;
   IF C04105A NOT IN (.,.A,.O,.I,.B) OR
      C04105B NOT IN (.,.A,.O,.I,.B) OR
      C04105C NOT IN (.,.A,.O,.I,.B) OR
      C04105D NOT IN (.,.A,.O,.I,.B) OR
      C04105E NOT IN (.,.A,.O,.I,.B) OR
      C04105F NOT IN (.,.A,.O,.I,.B) THEN KEYCOUNT + 1;

   ************************************************************************
   * Set flag for duplicates
   ************************************************************************;
   LENGTH DUPFLAG $3;
   DUPFLAG = 'NO';
   IF NOT (FIRST.MPRID AND LAST.MPRID) THEN DUPFLAG = 'YES';

   ************************************************************************
   * Determine final status (FNSTATUS)
   ************************************************************************;
   FNSTATUS = 0;
   IF FLAG_FIN = 1 THEN DO;
      ************************************************************
      **** APPLY THE COMPLETE QUESTIONNAIRE RULE (50% OF KEY   ****
      **** VARIABLES).                                         ****
      ************************************************************;
      IF KEYCOUNT GE 12 THEN FNSTATUS = 11;
      ELSE FNSTATUS = 12;
   END;
   ELSE IF FLAG_FIN IN(3,6,8,10,11,14,16,21,23,24) THEN DO;
      FNSTATUS = 20;
   END;
   ELSE IF FLAG_FIN IN(2,4,5,7,12,13,15) THEN DO;
      FNSTATUS = 31;
   END;
   ELSE IF FLAG_FIN IN (25,26) THEN DO;
      FNSTATUS = 32;
   END;
   ELSE IF FLAG_FIN IN(9,17,18,19,20,22) THEN DO;
      IF FLAG_FIN IN (18,19,20) THEN DO;
         FNSTATUS = 42;
      END;
      ELSE DO;
         FNSTATUS = 41;
      END;
   END;

   IF DUPFLAG = 'YES' THEN OUTPUT OUT.DUPSC;
   ELSE OUTPUT TEMPC2;
RUN;

************************************************************************
* Select the "most complete" questionaire from duplicates and
* SET it back into the non-duplicates file. For now assume the lowest
* FNSTATUS Value is the "most complete".
************************************************************************
;
PROC SORT DATA=OUT.DUPSC;
   BY MPRID FNSTATUS;
RUN;

DATA DEDUPED;
   SET OUT.DUPSC;
   BY MPRID FNSTATUS;
```

```
   IF FIRST.MPRID; *KEEP only the first - most complete questionaire;
RUN;

DATA OUT.SELECTC;
   SET TEMPC2 DEDUPED;

   LABEL FNSTATUS = "Final Status"
         DUPFLAG  = "Multiple Response Indicator"
         STRATUM  = "Sampling STRATUM"
         KEYCOUNT = "# Key Questions Answered (Out of 24)"
        ;
RUN;

TITLE1 "2004 Child DOD Health Care Survey Analysis (6077-220)";
TITLE2 "Program Name: SELECTC.SAS By Keith Rathbun";
TITLE3 "Program Output: SELECTC.SD2";

PROC CONTENTS DATA=OUT.SELECTC; RUN;

PROC FREQ DATA=OUT.SELECTC;
TABLES FNSTATUS KEYCOUNT FLAG_FIN
       FNSTATUS*KEYCOUNT*FLAG_FIN
   /MISSING LIST;
RUN;
```

E.4 CONSTRUCT\CREATBMI.SAS - CREATE BMI VALUES.

```
*******************************************************************************
*
* PROGRAM:  CREATBMI.SAS
* TASK:     QUARTERLY DOD HEALTH CARE SURVEY ANALYSIS (6077-410)
* PURPOSE:  CALCULATES CHILD BMI VALUES.
* WRITTEN:  11/14/2004 BY REBECCA NYMAN
*
* MODIFIED: 1) 12/06/2004 BY JACQUELINE AGUFA-MALOBA, Updated to run on DOD
*              computer.
*
* INPUTS:   1) SELECTC.SD2 - 2004 Q3 Child DOD Health Survey Data w/FNSTATUS
*           2) SAMPLC02.SD2 - Child (Q3) Sample file
*
* OUTPUTS:  1) CREATBMI.SD2 - 2004 Q3 Child BMI values
*
*******************************************************************************
*;
LIBNAME IN      V612 "..\..\DATA\CFINAL";
LIBNAME OUT     V612 "..\..\DATA\CFINAL";
LIBNAME LIBRARY V612 "..\..\DATA\CFINAL\FMTLIB";

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER MPRINT;


Proc Format;
  Value Sex
    1 = 'Male'
    2 = 'Female';

  Value over
    4 = 'overweight'
    3 = 'at-risk'
    2 = 'normal'
    1 = 'underweight';

  value exclude
    1 = 'plausible'
    2 = 'not plausible';
run;

PROC SORT DATA=IN.SELECTC  OUT=SELECTC; BY MPRID; RUN;
PROC SORT DATA=IN.SAMPLC02 OUT=SAMPLC02(KEEP=MPRID PNBRTHDT); BY MPRID; RUN;

DATA BMIINPUT;
   MERGE SAMPLC02 (in=SMP)
         SELECTC  (in=DAT)
          ;
   BY MPRID;

   IF DAT AND SMP;
RUN;


*data bmiInput2 (KEEP= AGEMOS SEX HEIGHT WEIGHT RECUMBNT HEADCIR
                      c04083a c04083b c04084 MPRID PNBRTHDT
                );
data bmiInput2 ;
  set BMIINPUT;
  fieldate='01jul2004'd;
  bdate=input(PNBRTHDT,8.);
  year = substr (bdate, 5,4);
  month = substr (bdate, 9,2);
  day = substr (bdate, 11,2);
  newbday = MDY (month, day, year);

  /*The following variables must be named as such in order for the
    gc-calculate program to run*********************************/

  agemos = intck ('month', newbday, fieldate)
           - (day(fieldate) < day(newbday));
```

```
  if c04103 = 1 then sex = 1;
  else if c04103 = 2 then sex = 2;


  IF C04083A IN (.A, .O) THEN C04083A = .;
  IF C04083B IN (.A, .O) THEN C04083B = .;

  height = ((c04083a*12)+ c04083b)* 2.54; /*Height in cenimeters*/

  recumbnt = 0;

  weight = c04084 * .4536; /*Weight in Kilograms*/

  headcir = .;

  format fieldate mmddyy8.;
run;


/*This is the CDC's program titled "gc-setup.sas", which can be downloaded on their web site.
It must be run with "gc-calculate.sas", which can also be downloaded at
http://www.cdc.gov/nccdphp/dnpa/growthcharts/sas.htm*/

*%let datalib="..\..\DATA\CFINAL";  **** Subdirectory for your existing dataset;
%let datain=bmiINPUT2;             **** The name of your existing SAS dataset;
%let dataout=cdctest;              **** The name of the dataset you wish to put
                                        the results into;
%let saspgm='gc-calculate.sas';
                                    **** Subdirectory for the downloaded program
                                        gc-calculate.sas;
*Libname mydata &datalib;

data _INDATA; set &datain;
%include &saspgm;

data &dataout; set _INDATA;

DATA OUT.CREATBMI;
SET cdctest;

/*notes if z scores are plausible values*/
exclude = 1; /*Any exlude = 2 are implausible values*/
if c04083a IN (.A,.) or c04083b IN (.A,.) or c04084 IN (.A,.) then exclude = 2; /*height/wieght
values*/
else if bmiz lt -4 or bmiz gt 5 then exclude = 2; /*bmi*/
else if waz lt -5 or waz gt 3 then exclude = 2; /*weight for age*/
else if haz lt - 5 or haz gt 3 then exclude = 2; /*height for age*/

/*categorizes BMI*/


IF exclude NE 2 THEN DO;
  if BMIPCT ge 95 then over = 4;
  else if 85 le BMIPCT lt 95 then over = 3;
  else if 5 lt BMIPCT lt 85 then over = 2;
  else if 0 le BMIPCT le 5 then over = 1;
END;

  if BMIPCT ge 95 then over1 = 4;
  else if 85 le BMIPCT lt 95 then over1 = 3;
  else if 5 lt BMIPCT lt 85 then over1 = 2;
  else if 0 le BMIPCT le 5 then over1 = 1;



format sex sex. exclude exclude. OVER over. ;
run;
```

E.5 CONSTRUCT\GC-CALCULATE.SAS - CALCULATE BMI VALUES.

```
**** THIS SAS PROGRAM IS FOR THE CALCULATION OF
     PERCENTILES AND Z-SCORES BASED ON THE CDC
     GROWTH REFERENCE YEAR 2000 ****;

IF AGEMOS GE 0 AND AGEMOS LT 0.5 THEN _AGECAT=0;
  ELSE _AGECAT=INT(AGEMOS+0.5)-0.5;

IF RECUMBNT=1 THEN DO;
  LENGTH=HEIGHT;
  STATURE=.;
END;
 ELSE IF RECUMBNT=0 THEN DO;
  STATURE=HEIGHT;
  LENGTH=.;
 END;
 ELSE IF RECUMBNT=. THEN DO;
  IF AGEMOS NE . THEN DO;
   IF AGEMOS LT 24 THEN DO;
     LENGTH=HEIGHT;
     STATURE=.;
   END;
    ELSE IF AGEMOS GE 24 THEN DO;
     STATURE=HEIGHT;
     LENGTH=.;
    END;
  END;
  ELSE DO;
   IF HEIGHT LT 85 THEN DO;
     LENGTH=HEIGHT;
     STATURE=.;
   END;
    ELSE IF HEIGHT GE 85 THEN DO;
     STATURE=HEIGHT;
     LENGTH=.;
    END;
  END;
 END;

IF WEIGHT=. OR STATURE IN (.,0) THEN BMI=.;
  ELSE BMI=WEIGHT/(STATURE/100)**2;
_ID=_N_;


DATA _INDATA1; SET _INDATA;
PROC SORT DATA=_INDATA1; BY SEX _AGECAT _ID;

DATA _INDATA2; SET _INDATA;
IF LENGTH=. THEN _HTCAT=.;
  ELSE IF LENGTH GE 45 AND LENGTH LT 45.5 THEN _HTCAT=45;
  ELSE _HTCAT=INT(LENGTH+0.5)-0.5;
PROC SORT DATA=_INDATA2; BY SEX _HTCAT _ID;

DATA _INDATA3; SET _INDATA;
IF STATURE=. THEN _HTCAT=.;
  ELSE IF STATURE GE 77 AND STATURE LT 77.5 THEN _HTCAT=77;
  ELSE _HTCAT=INT(STATURE+0.5)-0.5;
PROC SORT DATA=_INDATA3; BY SEX _HTCAT _ID;


DATA LGFAGE;  **DATA FILE FOR LENGTH-FOR-AGE;
INFILE CARDS PAD;
INPUT SEX _AGEMOS1 _LLG1 _MLG1 _SLG1 _AGEMOS2 _LLG2 _MLG2 _SLG2;
CARDS;
1      0.0      1.267004226      49.988884080      0.053112191      0.5      0.511237696
52.695975300      0.048692684
1      0.5      0.511237696      52.695975300      0.048692684      1.5      -0.452244460
56.628428550      0.044116830
1      1.5      -0.452244460      56.628428550      0.044116830      2.5      -0.990594599
59.608953430      0.041795583
1      2.5      -0.990594599      59.608953430      0.041795583      3.5      -1.285837689
62.077000270      0.040454126
```

```
1      3.5      -1.285837689      62.077000270      0.040454126      4.5      -1.430312380
64.216864100      0.039633879
1      4.5      -1.430312380      64.216864100      0.039633879      5.5      -1.476575470
66.125314900      0.039123813
1      5.5      -1.476575470      66.125314900      0.039123813      6.5      -1.456837849
67.860179900      0.038811994
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DATA HCFAGE;  **DATA FILE FOR HEAD CIRCUMFERENCE-FOR-AGE;
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2      26.5      1.867550375      47.778651860      0.029860960      27.5      1.937032580
47.889792300      0.030061839
2      27.5      1.937032580      47.889792300      0.030061839      28.5      2.001358669
47.995064220      0.030268375
2      28.5      2.001358669      47.995064220      0.030268375      29.5      2.060870301
48.094880480      0.030479985
2      29.5      2.060870301      48.094880480      0.030479985      30.5      2.115889982
48.189613650      0.030696150
2      30.5      2.115889982      48.189613650      0.030696150      31.5      2.166721130
48.279601100      0.030916413
2      31.5      2.166721130      48.279601100      0.030916413      32.5      2.213648440
48.365149170      0.031140368
2      32.5      2.213648440      48.365149170      0.031140368      33.5      2.256943216
48.446537030      0.031367651
2      33.5      2.256943216      48.446537030      0.031367651      34.5      2.296844024
48.524018940      0.031597939
2      34.5      2.296844024      48.524018940      0.031597939      35.5      2.333589434
48.597828280      0.031830942
2      35.5      2.333589434      48.597828280      0.031830942      36.5      2.370334844
48.671637620      0.032063945
;

DATA WTFLG;  **DATA FILE FOR WEIGHT-FOR-LENGTH;
INFILE CARDS PAD;
INPUT SEX _LG1 _LWLG1 _MWLG1 _SWLG1 _LG2 _LWLG2 _MWLG2 _SWLG2;
CARDS;
1      45.0      1.449036890      2.289757735      0.149236691      45.5      1.317941650
2.386172190      0.144790131
1      45.5      1.317941650      2.386172190      0.144790131      46.5      1.041730589
2.587097922      0.136547200
1      46.5      1.041730589      2.587097922      0.136547200      47.5      0.756615683
2.797952593      0.129156077
1      47.5      0.756615683      2.797952593      0.129156077      48.5      0.472617587
3.017679791      0.122589498
1      48.5      0.472617587      3.017679791      0.122589498      49.5      0.197455933
3.245225583      0.116802688
1      49.5      0.197455933      3.245225583      0.116802688      50.5      -0.063272822
3.479567767      0.111734963
1      50.5      -0.063272822      3.479567767      0.111734963      51.5      -0.305663778
3.719739648      0.107316407
1      51.5      -0.305663778      3.719739648      0.107316407      52.5      -0.527210764
3.964838222      0.103474530
```

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1      52.5      -0.527210764      3.964838222      0.103474530      53.5      -0.726356263
4.214033476      0.100139369
1      53.5      -0.726356263      4.214033476      0.100139369      54.5      -0.902380499
4.466562625      0.097246097
1      54.5      -0.902380499      4.466562625      0.097246097      55.5      -1.055126826
4.721730669      0.094736440
1      55.5      -1.055126826      4.721730669      0.094736440      56.5      -1.184933443
4.978903744      0.092558749
1      56.5      -1.184933443      4.978903744      0.092558749      57.5      -1.292531809
5.237504753      0.090667650
1      57.5      -1.292531809      5.237504753      0.090667650      58.5      -1.378973111
5.497008915      0.089023438
1      58.5      -1.378973111      5.497008915      0.089023438      59.5      -1.445563111
5.756939907      0.087591418
1      59.5      -1.445563111      5.756939907      0.087591418      60.5      -1.493801210
6.016866693      0.086341291
1      60.5      -1.493801210      6.016866693      0.086341291      61.5      -1.525332827
6.276400575      0.085246598
1      61.5      -1.525332827      6.276400575      0.085246598      62.5      -1.541839648
6.535195541      0.084284401
1      62.5      -1.541839648      6.535195541      0.084284401      63.5      -1.545098045
6.792942366      0.083434649
1      63.5      -1.545098045      6.792942366      0.083434649      64.5      -1.536863318
7.049370425      0.082680040
1      64.5      -1.536863318      7.049370425      0.082680040      65.5      -1.518786093
7.304248994      0.082005843
1      65.5      -1.518786093      7.304248994      0.082005843      66.5      -1.492490290
7.557381995      0.081399411
1      66.5      -1.492490290      7.557381995      0.081399411      67.5      -1.459487925
7.808610136      0.080850107
1      67.5      -1.459487925      7.808610136      0.080850107      68.5      -1.421167427
8.057810266      0.080349080
1      68.5      -1.421167427      8.057810266      0.080349080      69.5      -1.378835366
8.304892397      0.079888977
1      69.5      -1.378835366      8.304892397      0.079888977      70.5      -1.333634661
8.549802669      0.079463915
1      70.5      -1.333634661      8.549802669      0.079463915      71.5      -1.286605147
8.792519752      0.079069193
1      71.5      -1.286605147      8.792519752      0.079069193      72.5      -1.238665517
9.033054944      0.078701180
1      72.5      -1.238665517      9.033054944      0.078701180      73.5      -1.190667160
9.271448675      0.078357096
1      73.5      -1.190667160      9.271448675      0.078357096      74.5      -1.143316882
9.507773605      0.078035021
1      74.5      -1.143316882      9.507773605      0.078035021      75.5      -1.097263403
9.742129356      0.077733651
1      75.5      -1.097263403      9.742129356      0.077733651      76.5      -1.053083813
9.974642178      0.077452242
1      76.5      -1.053083813      9.974642178      0.077452242      77.5      -1.011294273
10.205463310      0.077190512
1      77.5      -1.011294273      10.205463310      0.077190512      78.5      -0.972360231
10.434767230      0.076948562
1      78.5      -0.972360231      10.434767230      0.076948562      79.5      -0.936705887
10.662749930      0.076726804
1      79.5      -0.936705887      10.662749930      0.076726804      80.5      -0.904722736
10.889626990      0.076525901
1      80.5      -0.904722736      10.889626990      0.076525901      81.5      -0.876777097
11.115631770      0.076346711
1      81.5      -0.876777097      11.115631770      0.076346711      82.5      -0.853216568
11.341013460      0.076190236
1      82.5      -0.853216568      11.341013460      0.076190236      83.5      -0.834375406
11.566035120      0.076057579
1      83.5      -0.834375406      11.566035120      0.076057579      84.5      -0.820578855
11.790971760      0.075949901
1      84.5      -0.820578855      11.790971760      0.075949901      85.5      -0.812146460
12.016108280      0.075868383
1      85.5      -0.812146460      12.016108280      0.075868383      86.5      -0.809394398
12.241737530      0.075814185
1      86.5      -0.809394398      12.241737530      0.075814185      87.5      -0.812636889
12.468158240      0.075788413
1      87.5      -0.812636889      12.468158240      0.075788413      88.5      -0.822186712
12.695672980      0.075792075
1      88.5      -0.822186712      12.695672980      0.075792075      89.5      -0.838354876
12.924586130      0.075826044
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1      89.5      -0.838354876      12.924586130      0.075826044      90.5      -0.861449493
13.155201820      0.075891019
1      90.5      -0.861449493      13.155201820      0.075891019      91.5      -0.891773904
13.387821850      0.075987476
1      91.5      -0.891773904      13.387821850      0.075987476      92.5      -0.929617736
13.622744200      0.076115636
1      92.5      -0.929617736      13.622744200      0.076115636      93.5      -0.975268944
13.860259860      0.076275395
1      93.5      -0.975268944      13.860259860      0.076275395      94.5      -1.028990493
14.100652340      0.076466299
1      94.5      -1.028990493      14.100652340      0.076466299      95.5      -1.091024455
14.344195220      0.076687482
1      95.5      -1.091024455      14.344195220      0.076687482      96.5      -1.161574946
14.591151390      0.076937631
1      96.5      -1.161574946      14.591151390      0.076937631      97.5      -1.240820737
14.841770070      0.077214912
1      97.5      -1.240820737      14.841770070      0.077214912      98.5      -1.328879402
15.096287900      0.077516968
1      98.5      -1.328879402      15.096287900      0.077516968      99.5      -1.425809463
15.354927290      0.077840877
1      99.5      -1.425809463      15.354927290      0.077840877      100.5      -1.531575592
15.617898220      0.078183177
1      100.5      -1.531575592      15.617898220      0.078183177      101.5      -1.646081976
15.885394640      0.078539804
1      101.5      -1.646081976      15.885394640      0.078539804      102.5      -1.769082483
16.157602010      0.078906277
1      102.5      -1.769082483      16.157602010      0.078906277      103.5      -1.900221246
16.434694180      0.079277694
2      45.0      0.666839915      2.305396985      0.168969897      45.5      0.699616404
2.403256702      0.157654766
2      45.5      0.699616404      2.403256702      0.157654766      46.5      0.747915684
2.606020484      0.139389663
2      46.5      0.747915684      2.606020484      0.139389663      47.5      0.751754737
2.817114082      0.125837223
2      47.5      0.751754737      2.817114082      0.125837223      48.5      0.691329975
3.035356101      0.115888948
2      48.5      0.691329975      3.035356101      0.115888948      49.5      0.559107556
3.259693318      0.108648608
2      49.5      0.559107556      3.259693318      0.108648608      50.5      0.361549127
3.489220170      0.103402703
2      50.5      0.361549127      3.489220170      0.103402703      51.5      0.116436203
3.723195489      0.099599651
2      51.5      0.116436203      3.723195489      0.099599651      52.5      -0.152509094
3.961034945      0.096830356
2      52.5      -0.152509094      3.961034945      0.096830356      53.5      -0.421478627
4.202270022      0.094804770
2      53.5      -0.421478627      4.202270022      0.094804770      54.5      -0.671388289
4.446476028      0.093323068
2      54.5      -0.671388289      4.446476028      0.093323068      55.5      -0.889973526
4.693220151      0.092246459
2      55.5      -0.889973526      4.693220151      0.092246459      56.5      -1.071844454
4.942029343      0.091473166
2      56.5      -1.071844454      4.942029343      0.091473166      57.5      -1.216671445
5.192403337      0.090923715
2      57.5      -1.216671445      5.192403337      0.090923715      58.5      -1.327360462
5.443830096      0.090532906
2      58.5      -1.327360462      5.443830096      0.090532906      59.5      -1.408261687
5.695813280      0.090246768
2      59.5      -1.408261687      5.695813280      0.090246768      60.5      -1.464051065
5.947889759      0.090021128
2      60.5      -1.464051065      5.947889759      0.090021128      61.5      -1.499105627
6.199640267      0.089820688
2      61.5      -1.499105627      6.199640267      0.089820688      62.5      -1.517197913
6.450695818      0.089618171
2      62.5      -1.517197913      6.450695818      0.089618171      63.5      -1.521479703
6.700736725      0.089393174
2      63.5      -1.521479703      6.700736725      0.089393174      64.5      -1.514481331
6.949493534      0.089131254
2      64.5      -1.514481331      6.949493534      0.089131254      65.5      -1.498204976
7.196744733      0.088822943
2      65.5      -1.498204976      7.196744733      0.088822943      66.5      -1.474231858
7.442313819      0.088462854
2      66.5      -1.474231858      7.442313819      0.088462854      67.5      -1.443808911
7.686067039      0.088048963
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2      67.5      -1.443808911      7.686067039      0.088048963      68.5      -1.407959107
7.927909360      0.087581916
2      68.5      -1.407959107      7.927909360      0.087581916      69.5      -1.367521025
8.167783677      0.087064605
2      69.5      -1.367521025      8.167783677      0.087064605      70.5      -1.323243270
8.405666621      0.086501667
2      70.5      -1.323243270      8.405666621      0.086501667      71.5      -1.275834578
8.641566305      0.085899159
2      71.5      -1.275834578      8.641566305      0.085899159      72.5      -1.226014257
8.875519723      0.085264271
2      72.5      -1.226014257      8.875519723      0.085264271      73.5      -1.174555804
9.107590221      0.084605096
2      73.5      -1.174555804      9.107590221      0.084605096      74.5      -1.122323639
9.337865054      0.083930435
2      74.5      -1.122323639      9.337865054      0.083930435      75.5      -1.070302348
9.566453061      0.083249631
2      75.5      -1.070302348      9.566453061      0.083249631      76.5      -1.019617172
9.793482492      0.082572421
2      76.5      -1.019617172      9.793482492      0.082572421      77.5      -0.971544123
10.019099020      0.081908788
2      77.5      -0.971544123      10.019099020      0.081908788      78.5      -0.927495981
10.243464670      0.081268832
2      78.5      -0.927495981      10.243464670      0.081268832      79.5      -0.889046221
10.466753860      0.080662561
2      79.5      -0.889046221      10.466753860      0.080662561      80.5      -0.857844783
10.689155300      0.080099785
2      80.5      -0.857844783      10.689155300      0.080099785      81.5      -0.835600041
10.910869240      0.079589888
2      81.5      -0.835600041      10.910869240      0.079589888      82.5      -0.824007806
11.132107170      0.079141623
2      82.5      -0.824007806      11.132107170      0.079141623      83.5      -0.824673085
11.353091640      0.078762888
2      83.5      -0.824673085      11.353091640      0.078762888      84.5      -0.839021353
11.574056230      0.078460511
2      84.5      -0.839021353      11.574056230      0.078460511      85.5      -0.868191531
11.795246970      0.078240047
2      85.5      -0.868191531      11.795246970      0.078240047      86.5      -0.912987527
12.016920300      0.078105554
2      86.5      -0.912987527      12.016920300      0.078105554      87.5      -0.973732843
12.239348380      0.078059544
2      87.5      -0.973732843      12.239348380      0.078059544      88.5      -1.050238631
12.462818610      0.078102898
2      88.5      -1.050238631      12.462818610      0.078102898      89.5      -1.141750538
12.687636270      0.078234935
2      89.5      -1.141750538      12.687636270      0.078234935      90.5      -1.246935039
12.914126800      0.078453576
2      90.5      -1.246935039      12.914126800      0.078453576      91.5      -1.363881842
13.142639300      0.078755652
2      91.5      -1.363881842      13.142639300      0.078755652      92.5      -1.490235591
13.373542630      0.079137144
2      92.5      -1.490235591      13.373542630      0.079137144      93.5      -1.623204367
13.607231970      0.079593737
2      93.5      -1.623204367      13.607231970      0.079593737      94.5      -1.759750536
13.844122750      0.080121122
2      94.5      -1.759750536      13.844122750      0.080121122      95.5      -1.896722704
14.084648530      0.080715361
2      95.5      -1.896722704      14.084648530      0.080715361      96.5      -2.031079769
14.329250180      0.081372938
2      96.5      -2.031079769      14.329250180      0.081372938      97.5      -2.159985258
14.578373340      0.082090922
2      97.5      -2.159985258      14.578373340      0.082090922      98.5      -2.280992946
14.832455700      0.082866693
2      98.5      -2.280992946      14.832455700      0.082866693      99.5      -2.392125361
15.091920120      0.083697706
2      99.5      -2.392125361      15.091920120      0.083697706      100.5      -2.491985117
15.357161670      0.084580920
2      100.5      -2.491985117      15.357161670      0.084580920      101.5      -2.579688446
15.628548490      0.085512655
2      101.5      -2.579688446      15.628548490      0.085512655      102.5      -2.654922113
15.906409030      0.086487929
2      102.5      -2.654922113      15.906409030      0.086487929      103.5      -2.717782155
16.191039660      0.087500575
;
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DATA WTFHT;  **DATA FILE FOR WEIGHT-FOR-STATURE;
INFILE CARDS PAD;
INPUT SEX _HT1 _LWHT1 _MWHT1 _SWHT1 _HT2 _LWHT2 _MWHT2 _SWHT2;
CARDS;
1      77.0      -0.999294215      10.274405270      0.077115837      77.5      -0.979897716
10.389018710      0.076995353
1      77.5      -0.979897716      10.389018710      0.076995353      78.5      -0.943555181
10.617249010      0.076769511
1      78.5      -0.943555181      10.617249010      0.076769511      79.5      -0.910807780
10.844329070      0.076564374
1      79.5      -0.910807780      10.844329070      0.076564374      80.5      -0.882026316
11.070488850      0.076380766
1      80.5      -0.882026316      11.070488850      0.076380766      81.5      -0.857561667
11.295974530      0.076219662
1      81.5      -0.857561667      11.295974530      0.076219662      82.5      -0.837750377
11.521046550      0.076082150
1      82.5      -0.837750377      11.521046550      0.076082150      83.5      -0.822919198
11.745977680      0.075969382
1      83.5      -0.822919198      11.745977680      0.075969382      84.5      -0.813388595
11.971051030      0.075882537
1      84.5      -0.813388595      11.971051030      0.075882537      85.5      -0.809475279
12.196557990      0.075822785
1      85.5      -0.809475279      12.196557990      0.075822785      86.5      -0.811493792
12.422796300      0.075791244
1      86.5      -0.811493792      12.422796300      0.075791244      87.5      -0.819757200
12.650067910      0.075788944
1      87.5      -0.819757200      12.650067910      0.075788944      88.5      -0.834576932
12.878677010      0.075816790
1      88.5      -0.834576932      12.878677010      0.075816790      89.5      -0.856261805
13.108927940      0.075875517
1      89.5      -0.856261805      13.108927940      0.075875517      90.5      -0.885116299
13.341123140      0.075965652
1      90.5      -0.885116299      13.341123140      0.075965652      91.5      -0.921432943
13.575561500      0.076087468
1      91.5      -0.921432943      13.575561500      0.076087468      92.5      -0.965501267
13.812535520      0.076240931
1      92.5      -0.965501267      13.812535520      0.076240931      93.5      -1.017588552
14.052330410      0.076425662
1      93.5      -1.017588552      14.052330410      0.076425662      94.5      -1.077941994
14.295221850      0.076640880
1      94.5      -1.077941994      14.295221850      0.076640880      95.5      -1.146773671
14.541474990      0.076885365
1      95.5      -1.146773671      14.541474990      0.076885365      96.5      -1.224269596
14.791341770      0.077157390
1      96.5      -1.224269596      14.791341770      0.077157390      97.5      -1.310558831
15.045061520      0.077454707
1      97.5      -1.310558831      15.045061520      0.077454707      98.5      -1.405713355
15.302859490      0.077774507
1      98.5      -1.405713355      15.302859490      0.077774507      99.5      -1.509717075
15.564948150      0.078113436
1      99.5      -1.509717075      15.564948150      0.078113436      100.5      -1.622491233
15.831524290      0.078467542
1      100.5      -1.622491233      15.831524290      0.078467542      101.5      -1.743825743
16.102774480      0.078832409
1      101.5      -1.743825743      16.102774480      0.078832409      102.5      -1.873365511
16.378876780      0.079203258
1      102.5      -1.873365511      16.378876780      0.079203258      103.5      -2.010641647
16.659998670      0.079574978
1      103.5      -2.010641647      16.659998670      0.079574978      104.5      -2.154957918
16.946309120      0.079942558
1      104.5      -2.154957918      16.946309120      0.079942558      105.5      -2.305458316
17.237974440      0.080301170
1      105.5      -2.305458316      17.237974440      0.080301170      106.5      -2.461019713
17.535171340      0.080646757
1      106.5      -2.461019713      17.535171340      0.080646757      107.5      -2.620330590
17.838082120      0.080976208
1      107.5      -2.620330590      17.838082120      0.080976208      108.5      -2.781787762
18.146908210      0.081288100
1      108.5      -2.781787762      18.146908210      0.081288100      109.5      -2.943638944
18.461858110      0.081582687
1      109.5      -2.943638944      18.461858110      0.081582687      110.5      -3.103888502
18.783159360      0.081862656
1      110.5      -3.103888502      18.783159360      0.081862656      111.5      -3.260482798
19.111039830      0.082132791
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1      111.5      -3.260482798      19.111039830      0.082132791      112.5      -3.411305599
19.445728030      0.082400213
1      112.5      -3.411305599      19.445728030      0.082400213      113.5      -3.554288672
19.787440040      0.082674023
1      113.5      -3.554288672      19.787440040      0.082674023      114.5      -3.687600863
20.136355630      0.082964333
1      114.5      -3.687600863      20.136355630      0.082964333      115.5      -3.809599339
20.492621110      0.083282267
1      115.5      -3.809599339      20.492621110      0.083282267      116.5      -3.919005213
20.856325420      0.083638758
1      116.5      -3.919005213      20.856325420      0.083638758      117.5      -4.014882272
21.227498900      0.084044246
1      117.5      -4.014882272      21.227498900      0.084044246      118.5      -4.096683061
21.606103660      0.084508001
1      118.5      -4.096683061      21.606103660      0.084508001      119.5      -4.164160421
21.992040700      0.085038256
1      119.5      -4.164160421      21.992040700      0.085038256      120.5      -4.217425718
22.385138200      0.085641503
1      120.5      -4.217425718      22.385138200      0.085641503      121.5      -4.256802224
22.785166280      0.086323118
2      77.0      -0.957840869      10.086532190      0.081713853      77.5      -0.935908436
10.198683510      0.081394448
2      77.5      -0.935908436      10.198683510      0.081394448      78.5      -0.896210420
10.422173240      0.080780644
2      78.5      -0.896210420      10.422173240      0.080780644      79.5      -0.863423474
10.644736590      0.080208403
2      79.5      -0.863423474      10.644736590      0.080208403      80.5      -0.839250279
10.866571460      0.079687207
2      80.5      -0.839250279      10.866571460      0.079687207      81.5      -0.825395013
11.087887140      0.079225952
2      81.5      -0.825395013      11.087887140      0.079225952      82.5      -0.823487667
11.308903970      0.078832728
2      82.5      -0.823487667      11.308903970      0.078832728      83.5      -0.834997067
11.529853310      0.078514592
2      83.5      -0.834997067      11.529853310      0.078514592      84.5      -0.861125495
11.750978720      0.078277372
2      84.5      -0.861125495      11.750978720      0.078277372      85.5      -0.902755880
11.972534160      0.078125431
2      85.5      -0.902755880      11.972534160      0.078125431      86.5      -0.960308955
12.194788830      0.078061602
2      86.5      -0.960308955      12.194788830      0.078061602      87.5      -1.033704489
12.418026820      0.078087089
2      87.5      -1.033704489      12.418026820      0.078087089      88.5      -1.122303405
12.642549630      0.078201515
2      88.5      -1.122303405      12.642549630      0.078201515      89.5      -1.224887418
12.868678510      0.078403060
2      89.5      -1.224887418      12.868678510      0.078403060      90.5      -1.339655646
13.096757860      0.078688751
2      90.5      -1.339655646      13.096757860      0.078688751      91.5      -1.464342037
13.327152020      0.079054697
2      91.5      -1.464342037      13.327152020      0.079054697      92.5      -1.596224732
13.560251560      0.079496621
2      92.5      -1.596224732      13.560251560      0.079496621      93.5      -1.732305592
13.796467930      0.080010179
2      93.5      -1.732305592      13.796467930      0.080010179      94.5      -1.869440665
14.036231650      0.080591346
2      94.5      -1.869440665      14.036231650      0.080591346      95.5      -2.004558693
14.279982320      0.081236502
2      95.5      -2.004558693      14.279982320      0.081236502      96.5      -2.134764169
14.528165800      0.081942620
2      96.5      -2.134764169      14.528165800      0.081942620      97.5      -2.257524917
14.781221960      0.082707038
2      97.5      -2.257524917      14.781221960      0.082707038      98.5      -2.370762249
15.039577460      0.083527227
2      98.5      -2.370762249      15.039577460      0.083527227      99.5      -2.472965302
15.303633030      0.084400264
2      99.5      -2.472965302      15.303633030      0.084400264      100.5      -2.563140425
15.573763400      0.085322654
2      100.5      -2.563140425      15.573763400      0.085322654      101.5      -2.640873937
15.850304300      0.086289668
2      101.5      -2.640873937      15.850304300      0.086289668      102.5      -2.706178899
16.133559300      0.087295416
2      102.5      -2.706178899      16.133559300      0.087295416      103.5      -2.759500412
16.423790370      0.088332358
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2      103.5      -2.759500412      16.423790370      0.088332358      104.5      -2.801578893
16.721223080      0.089391426
2      104.5      -2.801578893      16.721223080      0.089391426      105.5      -2.833376069
17.026046170      0.090461996
2      105.5      -2.833376069      17.026046170      0.090461996      106.5      -2.855987198
17.338413690      0.091532010
2      106.5      -2.855987198      17.338413690      0.091532010      107.5      -2.870584724
17.658444860      0.092588053
2      107.5      -2.870584724      17.658444860      0.092588053      108.5      -2.878341197
17.986227850      0.093615622
2      108.5      -2.878341197      17.986227850      0.093615622      109.5      -2.880404823
18.321818290      0.094599184
2      109.5      -2.880404823      18.321818290      0.094599184      110.5      -2.877853767
18.665241940      0.095522442
2      110.5      -2.877853767      18.665241940      0.095522442      111.5      -2.871676584
19.016494570      0.096368448
2      111.5      -2.871676584      19.016494570      0.096368448      112.5      -2.862774660
19.375539570      0.097119646
2      112.5      -2.862774660      19.375539570      0.097119646      113.5      -2.851915004
19.742313480      0.097758211
2      113.5      -2.851915004      19.742313480      0.097758211      114.5      -2.839760032
20.116720140      0.098265916
2      114.5      -2.839760032      20.116720140      0.098265916      115.5      -2.826824189
20.498636300      0.098624434
2      115.5      -2.826824189      20.498636300      0.098624434      116.5      -2.813480089
20.887909140      0.098815290
2      116.5      -2.813480089      20.887909140      0.098815290      117.5      -2.799924586
21.284359650      0.098820000
2      117.5      -2.799924586      21.284359650      0.098820000      118.5      -2.786142221
21.687785400      0.098620143
2      118.5      -2.786142221      21.687785400      0.098620143      119.5      -2.771843402
22.097965710      0.098197431
2      119.5      -2.771843402      22.097965710      0.098197431      120.5      -2.756365595
22.514669770      0.097533789
2      120.5      -2.756365595      22.514669770      0.097533789      121.5      -2.738514883
22.937669710      0.096611430
;

DATA LGFAGE; SET LGFAGE;
 _AGECAT=_AGEMOS1;
 PROC SORT DATA=LGFAGE; BY SEX _AGECAT;

DATA HTFAGE; SET HTFAGE;
 _AGECAT=_AGEMOS1;
 PROC SORT DATA=HTFAGE; BY SEX _AGECAT;

DATA WTFAGE; SET WTFAGE;
 _AGECAT=_AGEMOS1;
 PROC SORT DATA=WTFAGE; BY SEX _AGECAT;

DATA BMIFAGE; SET BMIFAGE;
 _AGECAT=_AGEMOS1;
 PROC SORT DATA=BMIFAGE; BY SEX _AGECAT;

DATA HCFAGE; SET HCFAGE;
 _AGECAT=_AGEMOS1;
 PROC SORT DATA=HCFAGE; BY SEX _AGECAT;

DATA REFFAGE; MERGE LGFAGE HTFAGE WTFAGE BMIFAGE HCFAGE; BY SEX _AGECAT;

DATA REFFLG; SET WTFLG;
 _HTCAT=_LG1;
 PROC SORT DATA=REFFLG; BY SEX _HTCAT;

DATA REFFHT; SET WTFHT;
 _HTCAT=_HT1;
 PROC SORT DATA=REFFHT; BY SEX _HTCAT;


DATA FINFAGE
       ;
     MERGE _INDATA1 (IN=A) REFFAGE (IN=B); BY SEX _AGECAT;
 IF A;
```

```
IF (LENGTH LT 20 OR LENGTH GT 300) THEN DO;
  _LLG=.; _MLG=.; _SLG=.;
  LGZ=.; LGPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LLG = ((AGEMOS-_AGEMOS1)*(_LLG2-_LLG1)/(_AGEMOS2-_AGEMOS1)+_LLG1);
_MLG = ((AGEMOS-_AGEMOS1)*(_MLG2-_MLG1)/(_AGEMOS2-_AGEMOS1)+_MLG1);
_SLG = ((AGEMOS-_AGEMOS1)*(_SLG2-_SLG1)/(_AGEMOS2-_AGEMOS1)+_SLG1);
  IF (_LLG GT -0.01 AND _LLG LT 0.01) THEN LGZ=LOG(LENGTH/_MLG)/_SLG;
    ELSE LGZ=((LENGTH/_MLG)**_LLG-1)/(_LLG*_SLG);
  LGPCT=PROBNORM(LGZ)*100;
END;

IF (STATURE LT 20 OR STATURE GT 300) THEN DO;
  _LHT=.; _MHT=.; _SHT=.;
  STZ=.; STPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LHT = ((AGEMOS-_AGEMOS1)*(_LHT2-_LHT1)/(_AGEMOS2-_AGEMOS1)+_LHT1);
_MHT = ((AGEMOS-_AGEMOS1)*(_MHT2-_MHT1)/(_AGEMOS2-_AGEMOS1)+_MHT1);
_SHT = ((AGEMOS-_AGEMOS1)*(_SHT2-_SHT1)/(_AGEMOS2-_AGEMOS1)+_SHT1);
  IF (_LHT GT -0.01 AND _LHT LT 0.01) THEN STZ=LOG(STATURE/_MHT)/_SHT;
    ELSE STZ=((STATURE/_MHT)**_LHT-1)/(_LHT*_SHT);
  STPCT=PROBNORM(STZ)*100;
END;

IF (AGEMOS LT 0 OR AGEMOS GT 240) OR
   (WEIGHT LT 0.5 OR WEIGHT GT 400) THEN DO;
  _LWT=.; _MWT=.; _SWT=.;
  WAZ=.; WTPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LWT = ((AGEMOS-_AGEMOS1)*(_LWT2-_LWT1)/(_AGEMOS2-_AGEMOS1)+_LWT1);
_MWT = ((AGEMOS-_AGEMOS1)*(_MWT2-_MWT1)/(_AGEMOS2-_AGEMOS1)+_MWT1);
_SWT = ((AGEMOS-_AGEMOS1)*(_SWT2-_SWT1)/(_AGEMOS2-_AGEMOS1)+_SWT1);
  IF (_LWT GT -0.01 AND _LWT LT 0.01) THEN WAZ=LOG(WEIGHT/_MWT)/_SWT;
    ELSE WAZ=((WEIGHT/_MWT)**_LWT-1)/(_LWT*_SWT);
  WTPCT=PROBNORM(WAZ)*100;
END;

IF (AGEMOS LT 24 OR AGEMOS GT 240) OR
   (BMI LT 2 OR BMI GT 80) THEN DO;
  _LBMI=.; _MBMI=.; _SBMI=.;
  BMIZ=.; BMIPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LBMI = ((AGEMOS-_AGEMOS1)*(_LBMI2-_LBMI1)/(_AGEMOS2-_AGEMOS1)+_LBMI1);
_MBMI = ((AGEMOS-_AGEMOS1)*(_MBMI2-_MBMI1)/(_AGEMOS2-_AGEMOS1)+_MBMI1);
_SBMI = ((AGEMOS-_AGEMOS1)*(_SBMI2-_SBMI1)/(_AGEMOS2-_AGEMOS1)+_SBMI1);
  IF (_LBMI GT -0.01 AND _LBMI LT 0.01) THEN BMIZ=LOG(BMI/_MBMI)/_SBMI;
    ELSE BMIZ=((BMI/_MBMI)**_LBMI-1)/(_LBMI*_SBMI);
  BMIPCT=ROUND(PROBNORM(BMIZ)*100,1);

END;

IF (AGEMOS LT 0 OR AGEMOS GT 36) OR
   (HEADCIR LT 0.5 OR HEADCIR GT 100) THEN DO;
  _LHC=.; _MHC=.; _SHC=.;
  HCZ=.; HCPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LHC = ((AGEMOS-_AGEMOS1)*(_LHC2-_LHC1)/(_AGEMOS2-_AGEMOS1)+_LHC1);
_MHC = ((AGEMOS-_AGEMOS1)*(_MHC2-_MHC1)/(_AGEMOS2-_AGEMOS1)+_MHC1);
_SHC = ((AGEMOS-_AGEMOS1)*(_SHC2-_SHC1)/(_AGEMOS2-_AGEMOS1)+_SHC1);
  IF (_LHC GT -0.01 AND _LHC LT 0.01) THEN HCZ=LOG(HEADCIR/_MHC)/_SHC;
    ELSE HCZ=((HEADCIR/_MHC)**_LHC-1)/(_LHC*_SHC);
  HCPCT=PROBNORM(HCZ)*100;
END;

DROP _LLG _MLG _SLG _LLG1 _LLG2 _MLG1 _MLG2 _SLG1 _SLG2
     _LHT _MHT _SHT _LWT _MWT _SWT _LBMI _MBMI _SBMI _LHC _MHC _SHC
     _LHT1 _LHT2 _MHT1 _MHT2 _SHT1 _SHT2
     _LWT1 _LWT2 _MWT1 _MWT2 _SWT1 _SWT2
     _LBMI1 _LBMI2 _MBMI1 _MBMI2 _SBMI1 _SBMI2
```

```
     _LHC1 _LHC2 _MHC1 _MHC2 _SHC1 _SHC2 _AGEMOS1 _AGEMOS2;

PROC SORT DATA=FINFAGE; BY SEX _AGECAT _ID;


DATA FINFLG; MERGE _INDATA2 (IN=A) REFFLG (IN=B); BY SEX _HTCAT;
 IF A;
IF (LENGTH LT 45 OR LENGTH GT 103.5) OR
   (WEIGHT LT 0.5 OR WEIGHT GT 400) THEN DO;
 _LWLT=.; _MWLT=.; _SWLT=.;
 WLZ=.; WLPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LWLT = ((LENGTH-_LG1)*(_LWLG2-_LWLG1)/(_LG2-_LG1)+_LWLG1);
_MWLT = ((LENGTH-_LG1)*(_MWLG2-_MWLG1)/(_LG2-_LG1)+_MWLG1);
_SWLT = ((LENGTH-_LG1)*(_SWLG2-_SWLG1)/(_LG2-_LG1)+_SWLG1);
  IF (_LWLT GT -0.01 AND _LWLT LT 0.01) THEN WLZ=LOG(WEIGHT/_MWLT)/_SWLT;
    ELSE WLZ=((WEIGHT/_MWLT)**_LWLT-1)/(_LWLT*_SWLT);
  WLPCT=PROBNORM(WLZ)*100;
END;
DROP _LG1 _LG2 _HTCAT _LWLT _MWLT _SWLT _LWLG1 _LWLG2 _MWLG1 _MWLG2 _SWLG1 _SWLG2;
PROC SORT DATA=FINFLG; BY SEX _AGECAT _ID;


DATA FINFHT; MERGE _INDATA3 (IN=A) REFFHT (IN=B); BY SEX _HTCAT;
 IF A;
IF (STATURE LT 77 OR STATURE GT 121.5) OR
   (WEIGHT LT 0.5 OR WEIGHT GT 400) THEN DO;
 _LWHT=.; _MWHT=.; _SWHT=.;
 WSZ=.; WSPCT=.;              *FOR MISSING VALUES;
END;
ELSE DO;
_LWHT = ((STATURE-_HT1)*(_LWHT2-_LWHT1)/(_HT2-_HT1)+_LWHT1);
_MWHT = ((STATURE-_HT1)*(_MWHT2-_MWHT1)/(_HT2-_HT1)+_MWHT1);
_SWHT = ((STATURE-_HT1)*(_SWHT2-_SWHT1)/(_HT2-_HT1)+_SWHT1);
  IF (_LWHT GT -0.01 AND _LWHT LT 0.01) THEN WSZ=LOG(WEIGHT/_MWHT)/_SWHT;
    ELSE WSZ=((WEIGHT/_MWHT)**_LWHT-1)/(_LWHT*_SWHT);
  WSPCT=PROBNORM(WSZ)*100;
END;
DROP _HT1 _HT2 _HTCAT _LWHT _MWHT _SWHT _LWHT1 _LWHT2 _MWHT1 _MWHT2 _SWHT1 _SWHT2;
PROC SORT DATA=FINFHT; BY SEX _AGECAT _ID;

DATA _INDATA; MERGE FINFAGE FINFLG FINFHT; BY SEX _AGECAT _ID;
 IF RECUMBNT=1 THEN DO;
   HAZ=LGZ; HTPCT=LGPCT;
   WHZ=WLZ; WHPCT=WLPCT;
 END;
 ELSE IF RECUMBNT=0 THEN DO;
   HAZ=STZ; HTPCT=STPCT;
   WHZ=WSZ; WHPCT=WSPCT;
 END;
 ELSE DO;
  HAZ=.; HTPCT=.;
  WHZ=.; WHPCT=.;
 END;

DROP _AGECAT _ID LGZ LGPCT STZ STPCT WLZ WLPCT WSZ WSPCT LENGTH STATURE;

RUN;
```

E.6 CONSTRUCT\CONVARC.SAS - CONSTRUCT VARIABLES FOR ANALYSIS.

```
*******************************************************************************
* PROGRAM:   CONVARC.SAS
* WRITTEN:   5/23/2000 BY NATALIE JUSTH
* UPDATED:   8/21/2001 BY NATALIE JUSTH FOR 2000 SURVEY
* UPDATED:   10/4/2002 BY NATALIE JUSTH FOR 2002 SURVEY
* UPDATED:   8/29/2003 BY NATALIE JUSTH FOR 2003 SURVEY
* UPDATED:   10/20/2004 BY LUCY LU FOR 2004 SURVEY. ADD CODE TO CREATE
*            XBMI AND XBMICAT
* UPDATED:   12/06/2004 BY JACQUELINE  AGUFA FOR 2004 SURVEY. UPDATED CODE TO CREATE
*            XBMI AND XBMICAT
*
* PURPOSE:   TO CREATE 5 INDEPENDENT VARIABLES: XENRLLMT, XENR_PCM, XINS_COV,
*            XBNFGRP
*            1 INDEPENDENT VARIABLE ALREADY CREATED FROM DEERS-BFGROUPP
*            TO CREATE 24 DEPENDENT VARIABLES: KBGPRB1,
*            KBGPRB2, KMILWAT1, KCIVWAT1, KMILOFFC, KCIVOFFC, KMILOP,
*            KCIVOP, KCIVINS,
* INPUT:     ..\..\DATA\CFINAL\SELECTC.SD2
* OUTPUT:    ..\..\DATA\CFINAL\CONVARC.SD2

*******************************************************************************
*;

LIBNAME IN      v612 '..\..\DATA\CFINAL';
*LIBNAME INBMI   V612 '.';                        /*CDC growth chart datafile. LLU 10/21/04*/
LIBNAME LIBRARY v612 '..\..\DATA\CFINAL\FMTLIB';
OPTIONS PS=79 LS=132 ERRORS=2;
TITLE1 '2004 Health Care Survey of DoD Beneficiaries Study - Child';
TITLE2 'CREATE CONSTRUCTED & OUTCOME MEASURE VARIABLES';


*******************************************************************************
* Calculate XBMI- Body Mass Index and XBMICAT- Body Mass Index Category.
* Define 5th, 85th, 95th percentile based on CDC 2000 Growth Chart for age 2-20.
* The Age in years is created at the half year point for the entire year to be
* consistent with the definition of month per CDC.
* 5th, 85th, 95th percentile data is downloaded at CDC website:
* http://www.cdc.gov/nchs/about/major/nhanes/growthcharts/datafiles.htm
* Lucy Lu 10/21/04
****Changed to use output from creatbmi.sas Jacqueline Agufa 12/06/04
*******************************************************************************;


DATA BMI(RENAME=(BMIPCT=XBMIPCT OVER=XBMICAT));
  SET IN.CREATBMI(KEEP= MPRID BMIPCT OVER);

  FORMAT _ALL_;

RUN;

PROC SORT DATA=BMI; BY MPRID; RUN;
PROC SORT DATA=IN.SELECTC OUT=SELECTC; BY MPRID; RUN;


DATA IN.CONVARC (KEEP = XENRLLMT XENR_PCM XINS_COV REGSMPL XTNEXREG
                        ENBGSMPL XBNFGRP XBMIPCT XBMICAT
                        /*KMILWAT1 KCIVWAT1*/ KMILOFFC
                        KCIVOFFC KBGPRB1 KBGPRB2
                        KMILOP KCIVOP
                        MPRID KCIVINS)
       CONVARC;
    MERGE BMI(IN=A) SELECTC(IN=B);


    BY MPRID;

    IF B;


    LENGTH
          XBMIPCT   4.
```

```
          XBMICAT   3.
          XTNEXREG  3.
          ;


  LABEL
       XENRLLMT    =  "Enrollment in TRICARE Prime"
       XENR_PCM    =  "Enrollment by PCM type"
       XINS_COV    =  "Insurance Coverage"
       REGSMPL     =  "Health Care regions "
       XBNFGRP     =  "Constructed Beneficiary Group"
       /*KMILWAT1    =  "Wait <=4 wks for well patient visit-Mil"
       KCIVWAT1    =  "Wait <=4 wks for well patient visit-Civ"*/
       KMILOFFC    =  "Office wait of >15 min-Mil"
       KCIVOFFC    =  "Office wait of >15 min-Civ"
       KBGPRB1     =  "Big problem getting referrals to spclst"
       KBGPRB2     =  "Big problem getting necessary care"
       KMILOP      =  "Outpatient visits to Military facility"
       KCIVOP      =  "Outpatient visits to Civilian facility"
       KCIVINS     =  "Beneficiary covered by civilian insurance"
       XBMIPCT     =  "Body Mass Index Child Percentile"
       XBMICAT     =  "Body Mass Index Category"
       XTNEXREG    =  "TNEX Region"
       ;


  FORMAT
        XENRLLMT       ENROLL.
        XENR_PCM       PCM.
        XINS_COV       INSURE.
        REGSMPL        CREG.
        XBNFGRP        XBGC_S.
       /*KMILWAT1       HAYNN.
        KCIVWAT1       HAYNN.*/
        KMILOFFC       HAYNN.
        KCIVOFFC       HAYNN.
        KBGPRB1        HAYNN.
        KBGPRB2        HAYNN.
        KMILOP         CTIMES.
        KCIVOP         CTIMES.
        KCIVINS        HAYNN2_.
        XBMICAT        BMICAT.
        XTNEXREG       TNEX.
        ;



/* CREATE INDEPENDENT VARIABLES */


/* XENRLLMT--ENROLLMENT STATUS */
 IF ENBGSMPL IN ('01','02','03','05','06') THEN XENRLLMT = 1; /*   Enrolled  */
 ELSE IF ENBGSMPL IN ('04','07') THEN XENRLLMT = 2;           /*   Not Enrolled */

/* XENR_PCM--ENROLLMENT BY PCM TYPE */
   IF ENBGSMPL IN ('01','03','06') THEN XENR_PCM=1;            /* 1=Enrolled  - mil PCM */
      ELSE IF ENBGSMPL IN ('02','05') THEN XENR_PCM=2;       /* 2=Enrolled  - civ PCM */
      ELSE IF ENBGSMPL IN ('04','07') THEN XENR_PCM=3;       /* 3=Not Enrolled        */

/* XINS_COV--INSURANCE COVERAGE */
  IF C04002 = 1 THEN XINS_COV = 1;                          /* Prime */
  ELSE IF C04002 = 3 THEN XINS_COV = 2;                     /* Standard/Extra */
  ELSE IF C04002 IN (5,6,7,8,9) THEN XINS_COV = 3;          /* Other Insurance */


/* CREATE XTNEXREG. LLU 10/26/04*/
  IF REGSMPL IN (1,2,5) THEN XTNEXREG=1;
  ELSE IF REGSMPL IN (3,4,6) THEN XTNEXREG=2;
  ELSE IF REGSMPL IN (7,8,9,10,11,12,16) THEN XTNEXREG=3;
  ELSE IF REGSMPL IN (13,14,15) THEN XTNEXREG=4;


/* XBNFGRP-Beneficiary Group that excludes those 65 and over-Active Duty
           and Family Members of Active Duty */
```

```
   XBNFGRP=BGCSMPL;

/* KMILWAT1--WAIT LESS THAN 4 WEEKS FOR WELL PATIENT VISIT AT MIL FACILITIES
   KCIVWAT1--WAIT LESS THAN 4 WEEKS FOR WELL PATIENT VISIT AT CIV FACILITIES*/

/*IN Q3 2004 THERE IS NO QUESTIONS FOR WELL-PATIENT CARE, LLU 10/21/04
   *IF C04053  = 1 THEN DO;                              /* Military */
     *IF C03030  IN (1, 2, 3) THEN KMILWAT1 = 1;        /* Yes */
     *ELSE IF C03030 = 4 THEN KMILWAT1 = 2;             /* No  */
   *END;
   *ELSE IF C04053  = 2 THEN DO;                         /* Civilian */
      *IF C03030  IN (1, 2, 3) THEN KCIVWAT1 = 1;      /* Yes */
      *ELSE IF C03030 = 4 THEN KCIVWAT1 = 2;           /* No  */
   *END;

/* KMILOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT MILITARY FACILITES
   KCIVOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT CIVILIAN FACILITES */
   IF C04053  = 1 THEN DO;                               /* Military */
      IF C04034  IN (1,2) THEN KMILOFFC = 1;             /* Yes */
      ELSE IF C04034  IN (3,4) THEN KMILOFFC = 2;        /* No  */
   END;
      ELSE IF C04053  = 2 THEN DO;                       /* Civilian */
           IF C04034  IN (1,2) THEN KCIVOFFC = 1;        /* Yes */
           ELSE IF C04034  IN (3,4) THEN KCIVOFFC = 2;   /* No */
      END;

/* KBGPRB1--BIG PROBLEM GETTING REFERRALS TO SPECIALISTS */
   IF C04018 = 1 THEN KBGPRB1 = 1;                         /* YES */
      ELSE IF C04018  IN (2,3) THEN KBGPRB1 = 2;           /* NO  */

/* KBGPRB2--BIG PROBLEM GETTING NECESSARY CARE */
   IF C04031 = 1 THEN KBGPRB2 = 1;                        /* YES */
       ELSE IF C04031  IN (2,3) THEN KBGPRB2 = 2;         /* NO  */

/* KMILOP--OUTPATIENT VISITS TO MILITARY FACILITY
   KCIVOP--OUTPATIENT VISITS TO CIVILIAN FACILITY */
   IF C04053  = 1 THEN KMILOP=C04029;
      ELSE IF (C04053=. AND C04029=.) THEN KMILOP=.;
      ELSE KMILOP = 1 ;
   IF C04053  = 2 THEN KCIVOP=C04029;
      ELSE IF (C04053=. AND C04029=.) THEN KCIVOP=.;
      ELSE KCIVOP = 1 ;


/* KCIVINS--IS BENEFICIARY COVERED BY CIVILIAN INSURANCE */
   IF (C04004C=1 OR C04004D=1 OR C04004E=1 OR C04004G=1) THEN KCIVINS=1;  /* YES  */
    ELSE KCIVINS=2;                                       /* NO   */

RUN;


/* CHECK NEW 2004 VARIABLES */
PROC FREQ DATA=CONVARC;
 TABLES XENRLLMT XENR_PCM XINS_COV XBNFGRP REGSMPL
        XTNEXREG KBGPRB1 KBGPRB2
        /*KMILWAT1 KCIVWAT1*/ KMILOFFC KCIVOFFC
        KMILOP KCIVOP KCIVINS
        FIELDAGE XBMIPCT XBMICAT
        / MISSING LIST;
 TITLE3 'ONE WAY FREQUENCIES ON ALL NEW 2004 CONSTRUCTED VARIABLES';
 RUN;


   PROC FREQ DATA=CONVARC;
    TABLES ENBGSMPL*XENRLLMT
           ENBGSMPL*XENR_PCM
           XENRLLMT*C04002*XINS_COV
           REGSMPL
           BGCSMPL*XBNFGRP
           /*C04053 *C03030 *KMILWAT1*KCIVWAT1*/
           C04053 *C04034 *KMILOFFC*KCIVOFFC
           C04018 *KBGPRB1
           C04031 *KBGPRB2
           C04053 *C04029 *KMILOP
```

```
          C04053 *C04029 *KCIVOP
          C04004C*C04004E*C04004F*KCIVINS
          C04083A*C04083B*C04084*XBMICAT
          BMICAT*XBMICAT
          / MISSING LIST;
    TITLE3 'CROSSTABS ON ALL NEW VARIABLES';
           RUN;

  PROC FREQ DATA=CONVARC;
     tables REGSMPL*XTNEXREG
          / MISSING LIST;
     format _all_;
  run;


PROC SORT DATA=IN.CONVARC; BY MPRID;
PROC CONTENTS DATA =IN.CONVARC;
RUN;
```

E.7 CONSTRUCT\MERGEC.SAS - MERGE CONSTRUCTED VARIABLES ONTO DATA FILE.

```
*******************************************************************************
* PROGRAM:   MERGEC.SAS
* WRITTEN:   5/23/00 BY NATALIE JUSTH
* UPDATED:   8/23/01 BY NATALIE JUSTH FOR 2000 SURVEY
* UPDATED:   10/4/02 BY NATALIE JUSTH FOR 2002 SURVEY
* UPDATED:   8/29/03 BY NATALIE JUSTH FOR 2003 SURVEY
* UPDATED:   10/22/04 BY LUCY LU FOR 2004 SURVEY
*            11/10/2004 BY LUCY LU, DROP VARIABLE STIELIG.
*
* PURPOSE:   TO MERGE FINAL FILES TOGETHER AND REORDER BY VARIABLE TYPE
*            To reorder variables within the record use a
*             LENGTH statement before the SET statement.
*             Make sure that MPRID is the first variable in the
*             record followed by:
*                           1)  other sampling variables
*                           2)  DEERS variables
*                           3)  Post-stratification vars
*                           4)  questionnaire responses
*                           5)  NRC variables
*                           6)  recoded questionnaire responses
*                           7)  coding scheme flags
*                           8)  constructed variables
*                           9)  weights  (NOT AVAILABLE FOR PRELIMINARY DATA)
* INPUT:     ..\..\DATA\CFINAL\SELECTC.SD2
*            ..\..\DATA\CFINAL\CONVARC.SD2
* OUTPUT:    ..\..\DATA\CFINAL\MERGEC.SD2
*******************************************************************************
*;

LIBNAME   IN       v612 '..\..\DATA\CFINAL';
LIBNAME   OUT      v612 '..\..\DATA\CFINAL';
LIBNAME   LIBRARY  v612 '..\..\DATA\CFINAL\FMTLIB';
OPTIONS PS=75 LS=111 ERRORS=2 COMPRESS=YES;

PROC SORT DATA=IN.SELECTC OUT=SELECTC;
BY MPRID;
RUN;


PROC SORT DATA=IN.CONVARC OUT=CONVARC;
BY MPRID;
RUN;


DATA MERGEC(DROP=C04001_O C04002_O C04003_O C04004AO C04004BO C04004CO C04004DO
            C04004EO C04004FO C04004GO C04004HO C04004IO C04005_O C04006_O C04007_O C04008_O
            C04009_O C04010_O C04011_O C04012_O C04013_O C04014_O C04015_O C04016_O
            C04017_O C04018_O C04019_O C04020_O C04021_O C04022_O C04023_O C04024_O
            C04025_O C04026_O C04027_O C04028_O C04029_O C04030_O C04031_O C04032_O
            C04033_O C04034_O C04035_O C04036_O C04037_O C04038_O C04039_O C04040_O
            C04041_O C04042_O C04043_O C04044_O C04045_O C04046_O C04047_O C04048_O
            C04049_O C04050_O C04051_O C04052_O C04053_O C04054_O C04055_O C04056_O
            C04057_O C04058_O C04059_O C04060_O C04061_O C04062_O C04063_O
            C04064_O C04065_O C04066_O C04067_O C04068_O C04069_O C04070_O
            C04071_O C04072_O C04073_O C04074_O C04075_O C04076_O C04077_O
            C04078_O C04079_O C04080_O C04081_O C04082_O C04083AO C04083BO C04084_O
            C04085_O C04086_O C04087_O C04088_O C04089_O C04090_O C04091_O
            C04092_O C04093_O C04094_O C04095_O C04096_O C04097_O C04098_O
            C04099_O C04100_O C04101_O C04102_O C04103_O C04104_O
            C04105AO C04105BO C04105CO C04105DO C04105EO C04105FO C04106_O
            C04107_O C04108_O C04109_O C04110_O STIELIG BMI BMICAT);
   MERGE SELECTC(in=hcsdb) CONVARC ;
   BY MPRID;
   if hcsdb;

   FORMAT
   AGESMPL         AGESMPL.
   BGCSMPL         XBGC_S.
   ENBGSMPL        $ENBGS.
   SUPREG          SUPERREG.
   MRTLSTAT        $MSTATUS.
```

```
   RACEETHN        $RACECD.
   PCM             $PCM.
   LEGDDSCD        $DDSFMT.
   PNLCATCD        $PNLCAT.
   MBRRELCD        $MBRREL.
   DBENCAT         $BENCAT.
   DMEDELG         $MEDELG.
   DSPONSVC        $SPONSVC.
   MEDTYPE         $MEDTYP.
   LEGDDSCD        $DDSFMT.
   FLAG_FIN        $FINAL.
   CONUS           CONUSMHS.
   PATCAT          $AGGBCAT.
   MISS_1          HAMISS.
   MISS_4          HAMISS.
   MISS_5          HAMISS.
   MISS_6          HAMISS.
   MISS_7          HAMISS.
   MISS_8          HAMISS.
   MISS_9          HAMISS.
   MISS_TOT        HAMISS.
   REGSMPL         CREGSMPL.
   MPCSMPL         MPCSMPL.
   SVCSMPL         SVCSMPL.
   SEXSMPL         HASEX.
   ENLSMPL         ENLSMP.
   FNSTATUS        FNSTATS.
   DHSRGN          $DHSRGN.
   WEB             WEB.
   XBMICAT         BMICAT.
   XTNEXREG        TNEX.
   ENRID           $MISSCHR.
   ULOCDMIS        $MISSCHR.
   TRICKDUP        $TRICK.
     ;

   LABEL
      ONTIME   = "On time indicator"
      WEB      = "Web/mail-out survey indicator"
      TRICKDUP = "Ontime and after fielding period indicator"
      ;

RUN;

 DATA OUT.MERGEC;


   LENGTH

       MPRID       $ 8         /* ID                */
       MPCSMPL       5         /* sampling variable */
       SVCSMPL       5         /* sampling variable */
       SEXSMPL       5         /* sampling variable */
       AGESMPL       8         /* sampling variable */
       BGCSMPL       8         /* sampling variable */
       REGSMPL       3         /* sampling variable */
       ENBGSMPL    $ 2         /* sampling variable */
       STRATUM     $ 3         /* sampling variable */
       SUPREG        8         /* sampling variable */
       E1          $ 1         /* sampling variable */
       E2          $ 1         /* sampling variable */
       E3          $ 1         /* sampling variable */
       E4          $ 1         /* sampling variable */


       MRTLSTAT    $ 1         /* DEERS variable    */
       RACEETHN    $ 1         /* DEERS variable    */
       DAGEQY      $ 3         /* DEERS variable    */
       FIELDAGE    $ 3         /* DEERS variable    */
       PCM         $ 3         /* DEERS variable    */
       LEGDDSCD    $ 2         /* DEERS variable    */
       PNLCATCD    $ 1         /* DEERS variable    */
       MBRRELCD    $ 1         /* DEERS variable    */
       DBENCAT     $ 3         /* DEERS variable    */
```

```
DMEDELG     $ 1         /* DEERS variable    */
DSPONSVC    $ 1         /* DEERS variable    */
MEDTYPE     $ 1         /* DEERS variable    */
PATCAT      $ 7         /* DEERS variable    */
ENRID       $ 4         /* DEERS variable    */
DCATCH      $ 4         /* DEERS variable    */
ULOCDMIS    $ 4         /* DEERS variable    */
DHSRGN      $ 2         /* DEERS variable    */

ENLSMPL       8         /* post-stratification variable    */
FNSTATUS      8         /* post-stratification variable    */
KEYCOUNT      8         /* post-stratification variable    */
POSTSTR     $ 3         /* post-stratification variable    */


C04001        4         /* questionnaire     */
C04002        4         /* questionnaire     */
C04003        4         /* questionnaire     */
C04004A       4         /* questionnaire     */
C04004B       4         /* questionnaire     */
C04004C       4         /* questionnaire     */
C04004D       4         /* questionnaire     */
C04004E       4         /* questionnaire     */
C04004F       4         /* questionnaire     */
C04004G       4         /* questionnaire     */
C04004H       4         /* questionnaire     */
C04004I       4         /* questionnaire     */
C04005        4         /* questionnaire     */
C04006        4         /* questionnaire     */
C04007        4         /* questionnaire     */
C04008        4         /* questionnaire     */
C04009        4         /* questionnaire     */
C04010        4         /* questionnaire     */
C04011        4         /* questionnaire     */
C04012        4         /* questionnaire     */
C04013        4         /* questionnaire     */
C04014        4         /* questionnaire     */
C04015        4         /* questionnaire     */
C04016        4         /* questionnaire     */
C04017        4         /* questionnaire     */
C04018        4         /* questionnaire     */
C04019        4         /* questionnaire     */
C04020        4         /* questionnaire     */
C04021        4         /* questionnaire     */
C04022        4         /* questionnaire     */
C04023        4         /* questionnaire     */
C04024        4         /* questionnaire     */
C04025        4         /* questionnaire     */
C04026        4         /* questionnaire     */
C04027        4         /* questionnaire     */
C04028        4         /* questionnaire     */
C04029        4         /* questionnaire     */
C04030        4         /* questionnaire     */
C04031        4         /* questionnaire     */
C04032        4         /* questionnaire     */
C04033        4         /* questionnaire     */
C04034        4         /* questionnaire     */
C04035        4         /* questionnaire     */
C04036        4         /* questionnaire     */
C04037        4         /* questionnaire     */
C04038        4         /* questionnaire     */
C04039        4         /* questionnaire     */
C04040        4         /* questionnaire     */
C04041        4         /* questionnaire     */
C04042        4         /* questionnaire     */
C04043        4         /* questionnaire     */
C04044        4         /* questionnaire     */
C04045        4         /* questionnaire     */
C04046        4         /* questionnaire     */
C04047        4         /* questionnaire     */
C04048        4         /* questionnaire     */
C04049        4         /* questionnaire     */
C04050        4         /* questionnaire     */
C04051        4         /* questionnaire     */
```

```
C04052        4         /* questionnaire     */
C04053        4         /* questionnaire     */
C04054        4         /* questionnaire     */
C04055        4         /* questionnaire     */
C04056        4         /* questionnaire     */
C04057        4         /* questionnaire     */
C04058        4         /* questionnaire     */
C04059        4         /* questionnaire     */
C04060        4         /* questionnaire     */
C04061        4         /* questionnaire     */
C04062        4         /* questionnaire     */
C04063        4         /* questionnaire     */
C04064        4         /* questionnaire     */
C04065        4         /* questionnaire     */
C04066        4         /* questionnaire     */
C04067        4         /* questionnaire     */
C04068        4         /* questionnaire     */
C04069        4         /* questionnaire     */
C04070        4         /* questionnaire     */
C04071        4         /* questionnaire     */
C04072        4         /* questionnaire     */
C04073        4         /* questionnaire     */
C04074        4         /* questionnaire     */
C04075        4         /* questionnaire     */
C04076        4         /* questionnaire     */
C04077        4         /* questionnaire     */
C04078        4         /* questionnaire     */
C04079        4         /* questionnaire     */
C04080        4         /* questionnaire     */
C04081        4         /* questionnaire     */
C04082        4         /* questionnaire     */
C04083A       4         /* questionnaire     */
C04083B       4         /* questionnaire     */
C04084        4         /* questionnaire     */
C04085        4         /* questionnaire     */
C04086        4         /* questionnaire     */
C04087        4         /* questionnaire     */
C04088        4         /* questionnaire     */
C04089        4         /* questionnaire     */
C04090        4         /* questionnaire     */
C04091        4         /* questionnaire     */
C04092        4         /* questionnaire     */
C04093        4         /* questionnaire     */
C04094        4         /* questionnaire     */
C04095        4         /* questionnaire     */
C04096        4         /* questionnaire     */
C04097        4         /* questionnaire     */
C04098        4         /* questionnaire     */
C04099        4         /* questionnaire     */
C04100        4         /* questionnaire     */
C04101        4         /* questionnaire     */
C04102        4         /* questionnaire     */
C04103        4         /* questionnaire     */
C04104        4         /* questionnaire     */
C04105A       4         /* questionnaire     */
C04105B       4         /* questionnaire     */
C04105C       4         /* questionnaire     */
C04105D       4         /* questionnaire     */
C04105E       4         /* questionnaire     */
C04105F       4         /* questionnaire     */
C04106        4         /* questionnaire     */
C04107        4         /* questionnaire     */
C04108        4         /* questionnaire     */
C04109        4         /* questionnaire     */
C04110        4         /* questionnaire     */

ONTIME      $ 3         /* Survey fielding variable */
FLAG_FIN    $ 4         /* Survey fielding variable */
DUPFLAG     $ 3         /* Survey fielding variable */
WEB           8         /* Survey fielding variable */
TRICKDUP    $ 8         /* Survey fielding variable */

N1            4         /* CS flag variable     */
N2            4         /* CS flag variable     */
```

```
      N3            4         /* CS flag variable     */
      N4            4         /* CS flag variable     */
      N5            4         /* CS flag variable     */
      N6            4         /* CS flag variable     */
      N7            4         /* CS flag variable     */
      N8            4         /* CS flag variable     */
      N9            4         /* CS flag variable     */
      N10           4         /* CS flag variable     */
      N11           4         /* CS flag variable     */
      N12           4         /* CS flag variable     */
      N13           4         /* CS flag variable     */
      N14           4         /* CS flag variable     */
      N15           4         /* CS flag variable     */
      N16           4         /* CS flag variable     */
      N17           4         /* CS flag variable     */
      N18           4         /* CS flag variable     */
      N19           4         /* CS flag variable     */
      N20           4         /* CS flag variable     */
      N21           4         /* CS flag variable     */
      N22           4         /* CS flag variable     */
      N23           4         /* CS flag variable     */
      N24           4         /* CS flag variable     */
      N25           4         /* CS flag variable     */
      N26           4         /* CS flag variable     */
      N27           4         /* CS flag variable     */
      N28           4         /* CS flag variable     */
      N29           4         /* CS flag variable     */
      N30           4         /* CS flag variable     */
      MISS_1        8         /* CS Count             */
      MISS_4        8         /* CS Count             */
      MISS_5        8         /* CS Count             */
      MISS_6        8         /* CS Count             */
      MISS_7        8         /* CS Count             */
      MISS_8        8         /* CS Count             */
      MISS_9        8         /* CS Count             */
      MISS_TOT      8         /* CS Count             */


      CONUS         3         /* constructed       */
      XENRLLMT      8         /* constructed       */
      XENR_PCM      8         /* constructed       */
      XINS_COV      8         /* constructed       */
      XBNFGRP       8         /* constructed       */
      XBMIPCT       4         /* constructed       */
      XBMICAT       3         /* constructed       */
      XTNEXREG      3         /* constructed       */
      KMILOFFC      8         /* constructed       */
      KCIVOFFC      8         /* constructed       */
      KBGPRB1       8         /* constructed       */
      KBGPRB2       8         /* constructed       */
      KMILOP        8         /* constructed       */
      KCIVOP        8         /* constructed       */
      KCIVINS       8         /* constructed       */

      BWT           8         /* Weights           */
     ;

    SET MERGEC;

     RUN;

PROC CONTENTS DATA=OUT.MERGEC POSITION;
RUN;
```

E.8.1 WEIGHTING\CHILD\ADJWT.SAS - CALCULATE ADJUSTED WEIGHTS.

```
*****************************************************************
*** Project: DoD Child Sampling - Nonresponse adjustments
***
*** Program: F:\DOD\Q3_2004\Programs\Weighting\child\adjwt.sas,
***
*** TASK:    2004 CHILD DOD HEALTH CARE SURVEY
*** PURPOSE: CALCULATE THE FINAL WEIGHT.
***          WEIGHTS FOR DOD CHILD SURVEY.
***          DOD HEALTH CARE SURVEY FILE.
***          REQUESTED BY DON JANG.
*** WRITTEN: 11/09/1999 BY KEITH RATHBUN
*** Updated: 1)10/01/2003 by Esther Friedman
***          2)12/18/2003 By Haixia Xu
***          3)10/11/2004 by Haixia Xu for 2004 child weighting
***          4)10/26/2004 by Lucy Lu for child late response weighting
***          5)11/23/2004 by Haixia Xu for reweighting due to the fnstatus coding changes
***
***
*** INPUTS:  selectc.SD2
***          FRAMEC.SD2
***
*** OUTPUT:  adjwt.SD2
***
*************************************************************************
*;
*** libname for the input and output data ***;
LIBNAME IN  v6 "..\..\..\DATA\Cfinal";
LIBNAME OUT v6   "..\..\..\DATA\Cfinal";
*LIBNAME LIBRARY  "..\..\..\DATA\Cfinal\fmtlib";

%include "..\design_effects_unequal_weights.sas";

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER /*mprint mlogic symbolgen*/;

title1 'Child DoD Survey of Health Beneficiaries';
title2 'Calculate the Final Weights';
************************************************************************
* Calculate final weight based on user-specified domains.
************************************************************************;

%MACRO PROCESS(DOMAIN,FORM,INPT);

   *** Initial Information. ***;

   title5 'FRAMEC.SD2 Count';

   proc freq data=in.framec;
   table enlsmpl agesmpl supreg / list missing;
   run;

   title5 'selectc.SD2 Counts Using BWT as the Weight';

   proc freq data=in.&inpt.;
   table enlsmpl agesmpl supreg fnstatus / list missing;
   weight BWT;
   format _all_;
   run;

   title5 'selectc.SD2 Counts';

   proc freq data=in.&inpt.;
   table enlsmpl agesmpl supreg fnstatus
   web*enlsmpl web*agesmpl web*supreg web*fnstatus/ list missing;
   format _all_;
   run;

   *** Create the adjustment cells for nonresponse. ***;

   data &inpt. (KEEP = MPRID FNSTATUS BWT enlsmpl supreg sexsmpl svcsmpl agesmpl stratum poststr);;
   set in.&inpt.;
   format _all_;
```

```
   run;

PROC SORT DATA=&inpt. OUT=&INPT.;
BY &DOMAIN.;
RUN;

*************************************************************************
* Calculate adjustment factor A1 for each cell.
* This is the Eligibility Determination adjustment.
*************************************************************************;
DATA CELLSA1  (KEEP=SUMBWT SUMG1-SUMG4 A1 CELLCNT cntg1-cntg4 &domain.)
     MPRIDSA1 (KEEP=MPRID FNSTATUS BWT &DOMAIN. enlsmpl supreg agesmpl)
    ;
   SET &INPT.;
   BY &DOMAIN;

   IF FIRST.&DOMAIN. THEN DO;
      CELLCNT = 0;
      cntg1   = 0;
      cntg2   = 0;
      cntg3   = 0;
           cntg4   = 0;
      SUMBWT  = 0.0;
      SUMG1   = 0.0;
      SUMG2   = 0.0;
      SUMG3   = 0.0;
           SUMG4   = 0.0;
      A1 = 0.0;
   END;
   CELLCNT + 1;

   ***************************************************
   * Accumulate total weight sum
   ***************************************************;

   SUMBWT + BWT;

   ***************************************************
   * Accumulate group 1 weight sum
   ***************************************************;

   IF FNSTATUS IN (11,12) THEN
      do;
         SUMG1 + BWT;
         cntg1 + 1;
      end;

   ***************************************************
   * Accumulate group 2 weight sum
   ***************************************************;

   ELSE IF FNSTATUS in (20,31) THEN
      do;
         SUMG2 + BWT;
         cntg2 + 1;
      end;

   ***************************************************
   * Accumulate group 3 weight sum
   ***************************************************;

   ELSE IF FNSTATUS in (41,42) THEN
      do;
         SUMG3 + BWT;
         cntg3 + 1;
      end;

   ***************************************************
   * Accumulate group 4 weight sum
   ***************************************************;

   ELSE IF FNSTATUS = 32 THEN
      do;
         SUMG4 + BWT;
```

```
         cntg4 + 1;
      end;

   RETAIN SUMBWT SUMG1-SUMG4 A1 CELLCNT cntg1-cntg4 MPRID;

   IF LAST.&DOMAIN. THEN DO;
      A1 = (SUMG1 + SUMG2 + SUMG3)/(SUMG1 + SUMG2);
      OUTPUT CELLSA1;
   END;

   OUTPUT MPRIDSA1;

RUN;


title5 'Check for CELLSA1 Data Set';

proc print data=cellsa1;
var stratum cntg1-cntg4 cellcnt sumg1-sumg4 sumBWT a1;
sum cellcnt cntg1 cntg2 cntg3 cntg4 sumBWT sumg1 sumg2 sumg3 sumg4;
run;

proc print data=cellsa1;
where ( a1 > 3.25 ) or ( cntg1 + cntg2 < 10 );
var stratum cntg1-cntg4 cellcnt sumg1-sumg4 sumBWT a1;
sum cellcnt cntg1 cntg2 cntg3 cntg4 sumBWT sumg1 sumg2 sumg3 sumg4;
run;

proc univariate data=cellsa1 normal plot;
var a1;
run;

proc sort data=mpridsa1;
by &domain.;
run;

proc sort data=cellsa1;
by &domain.;
run;

data adj_one;
merge mpridsa1 cellsa1;
by &domain.;
if fnstatus in (11,12,20,31) then adj1 = a1;
   else if fnstatus = 32 then adj1=1;
   else adj1 = 0;
adj_wt1 = adj1 * BWT;
run;

title5 'Checks for ADJ_ONE Data Set';

proc freq data=adj_one;
table stratum*fnstatus*adj1 / list missing;
run;

proc means data=adj_one n sum NOPRINT;
class fnstatus;
var adj_wt1;
output out=print sum=sum;
run;

Proc print data=print;
sum sum;
where _type_=1;
run;

proc means data=adj_one n sum NOPRINT;
class enlsmpl;
var adj_wt1;
output out=print sum=sum;
run;

Proc print data=print;
sum sum;
```

```
where _type_=1;
run;

*****************************************************************************
* Calculate adjustment factor A2 for each cell.
* This is the Nonresponse adjustment and creates the final weight (adjwt).
*****************************************************************************;

proc sort data=adj_one;
by &domain.;
run;

DATA CELLSA2 (KEEP= &domain. NUMER DENOM numercnt denomcnt A2);
   set adj_one ;
   BY &domain.;

   IF FIRST.&domain. THEN DO;
      A2 = 0.0;
      NUMER = 0.0;
      DENOM = 0.0;
      numercnt = 0;
      denomcnt = 0;
   END;


   RETAIN NUMER DENOM A2 numercnt denomcnt;

   IF FNSTATUS IN (11,12,20) THEN
      do;
         NUMER + adj_wt1;
         numercnt + 1;
      end;

   IF FNSTATUS = 11 THEN
      do;
         DENOM + adj_wt1;
         denomcnt + 1;
      end;

   IF LAST.&domain. THEN DO;
      A2 = NUMER/DENOM;
      OUTPUT CELLSA2;
   END;

RUN;

title5 'Check for CELLSA2 Data Set';

proc print data=cellsa2;
var &domain. numercnt denomcnt numer denom a2;
sum numer denom numercnt denomcnt;
run;

proc print data=cellsa2;
where ( a2 > 3.25 ) or ( denomcnt < 10 );
var &domain. numercnt denomcnt numer denom a2;
sum numer denom numercnt denomcnt;
run;

proc univariate data=cellsa2 normal plot;
var a2;
run;

proc sort data=adj_one;
by &domain.;
run;

proc sort data=cellsa2;
by &domain.;
run;

data adj_two;
merge adj_one cellsa2;
by &domain.;
```

```
if fnstatus = 11 then adj2 = a2;
   else if fnstatus in (31, 32) then adj2 = 1;
   else adj2 = 0;
adjwt = adj2 * adj_wt1;
label adjwt = 'Adjusted Weight';
KEEP MPRID fnstatus adj1 adj2 adjwt stratum enlsmpl;
run;

title5 'Check for ADJ_TWO Data Set';

proc freq data=adj_two;
table stratum*fnstatus*adj2 / list missing;
run;

proc means data=adj_two n sum NOPRINT;
class fnstatus;
var adjwt;
output out=print sum=sum;
run;

Proc print data=print;
sum sum;
where _type_=1;
run;

proc means data=adj_two n sum NOPRINT;
class enlsmpl;
var adjwt;
output out=print sum=sum;
run;

Proc print data=print;
sum sum;
where _type_=1;
run;

data adj_two;
set adj_two(drop=fnstatus enlsmpl);
run;

*************************************************************************
* Sort the original data
*************************************************************************;

PROC SORT DATA=&INPT. OUT=&INPT.;
BY MPRID;
RUN;

*************************************************************************
* Sort the ADJ_TWO data set
*************************************************************************;

PROC SORT DATA=adj_two;
BY MPRID;
RUN;

*************************************************************************
* Append final weight variable (adjwt)
*************************************************************************;
DATA OUT.adjwt;
   MERGE adj_two &INPT.;
   BY MPRID;
RUN;

title5 'Checks for adjwt Data Set';

proc means data=out.adjwt n sum NOPRINT;
class fnstatus;
var adjwt;
output out=print sum=sum;
run;

Proc print data=print;
sum sum;
```

```
where _type_=1;
run;

proc means data=out.adjwt n sum;
class stratum;
var BWT adjwt;
run;

proc sort data=out.adjwt out=chk;
by stratum fnstatus;
run;

data sub_chk;
set chk(keep = stratum fnstatus BWT adj1 adj2 adjwt);
by stratum fnstatus;
prodadjs = adj1 * adj2;
retain cellcnt sumadjwt;
if first.fnstatus then
   do;
      cellcnt = 1;
      sumadjwt = adjwt;
   end;
   else
      do;
         cellcnt = cellcnt +1;
         sumadjwt = sumadjwt + adjwt;
      end;
if last.fnstatus then output sub_chk;
run;

proc print data=sub_chk;
var stratum fnstatus BWT adj1 adj2 prodadjs adjwt cellcnt sumadjwt;
sum cellcnt sumadjwt;
run;

proc univariate data=sub_chk normal plot;
where prodadjs ~= 0;
var prodadjs;
run;

proc univariate data=out.adjwt;
where fnstatus=11;
var adjwt;
run;


%MEND PROCESS;

*************************************************************************
* Calculate final weight based on user-specified parameters.
*************************************************************************;

%PROCESS(stratum,c,selectc);


RUN;
```

E.8.2 WEIGHTING\CHILD\POSTSTR4.SAS - CHILD SAMPLING - POSTSTRATIFICATION ADJUSTMENTS.

```
*************************************************************************
*** Project:        DoD Child Sampling - Poststratification adjustments
***
*** TASK:    2004 CHILD DOD HEALTH CARE SURVEY
*** PURPOSE: BUILD AND ASSIGN FINAL WEIGHTS - POST STRATIFICATION - Child Survey.
***          WEIGHTS FOR CHILD DOD SURVEY.
***          DOD HEALTH CARE SURVEY FILE.
***          REQUESTED BY DON JANG.
*** WRITTEN: 12/30/99 BY KEITH RATHBUN
*** UPDATED: 10/01/03 BY Esther Friedman
*** UPDATED: 12/18/03 BY Haixia Xu
*** UPDATED: 10/11/2004 by Haixia Xu
***
*** INPUTS:   adjwt.SD2 - Adjusted Weights file - Form C
***           recountc.sd2
***           framec.sd2
***           selectc.sd2
*** OUTPUTS   POST_WT.SD2 - Final Weights file - Form C
*************************************************************************;

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER mprint mlogic symbolgen;

*** libname for the input and output data ***;
LIBNAME IN  v6 "..\..\..\Data\Cfinal"; /* adjwt.sd2, recountc.sd2, framec.sd2, selectc.sd2 */
LIBNAME OUT v6 "..\..\..\Data\Cfinal"; /* post_wt.sd2 */

%include "..\design_effects_unequal_weights.sas";

title1 'Child DoD Survey of Health Beneficiaries';
title2 'Calculate the Poststratified Weights';

%MACRO PROCESS(DOMAIN,FORM,INPT);

************************************************************************
* Sort the adjusted weights file by user-specified domains
************************************************************************;
PROC SORT DATA=IN.&inpt.
          OUT=ADJWT(KEEP=FNSTATUS MPRID ADJWT &DOMAIN);
     BY &DOMAIN;
RUN;

************************************************************************
* Assign cell names and calculate the sum of ADJWT
************************************************************************;
DATA CELLS  (KEEP=SUMADJWT SUMFN11 &DOMAIN)
     MPRIDS (KEEP=MPRID FNSTATUS ADJWT &DOMAIN)
    ;
   SET &inpt.;
   BY &DOMAIN;

   IF FIRST.&DOMAIN THEN DO;
      SUMADJWT   = 0.0;
      SUMFN11  = 0;
   END;

   ************************************************************************
   * Accumulate sum of adjusted weight
   ************************************************************************;
   SUMADJWT + ADJWT;

   ************************************************************************
   * COUNT the FNSTATUS = 11 within each DOMAIN
   ************************************************************************;
   IF FNSTATUS = 11 THEN SUMFN11 + 1;

   RETAIN SUMADJWT SUMFN11;

   IF LAST.&DOMAIN THEN DO;
      OUTPUT CELLS;
```

```
      SUMADJWT  = 0.0;
      SUMFN11  = 0;
   END; * DOMAIN;
   OUTPUT MPRIDS;
RUN;

*************************************************************************
* Merge the population counts and calculate the adjusted population (AP)
*************************************************************************;
DATA recountc;
SET IN.recountc (KEEP = stratum PSUM0);
   POSTSTR = stratum;
   POP = PSUM0;
RUN;

PROC SORT DATA=recountc OUT=recountc; BY &DOMAIN; RUN;

DATA AP;
   MERGE recountc CELLS;
   BY &DOMAIN;
   AP = POP/SUMADJWT;
RUN;

*************************************************************************
* Merge the adjusted population and calculate the final weight (WRWT)
*************************************************************************;
DATA POST_WT;
   MERGE AP(IN=IN1) MPRIDS(IN=IN2);
   BY &DOMAIN;

   IF IN2 THEN DO;
      WRWT = AP*ADJWT;
      OUTPUT;
   END;

   LABEL WRWT     = 'Final Weight';
   LABEL AP       = 'Poststratification Adjustment Factor';
   LABEL POP      = 'DEERS population by CELLNAME for weights';
   LABEL SUMFN11  = 'COUNT of FNSTATUS=11 within CELLNAME';

   KEEP FNSTATUS WRWT ADJWT AP MPRID POP SUMFN11 &DOMAIN;
RUN;

PROC MEANS DATA=POST_WT NOPRINT;
   VAR POP WRWT AP SUMFN11;
   BY &DOMAIN;
   OUTPUT OUT=STATS(KEEP=POSTSTR DEERSPOP PSA_CNT AP_MEAN FN11CNT )
                    SUM= DUMMY1   PSA_CNT DUMMY2  DUMMY3
                    MEAN=DUMMY4   DUMMY5  AP_MEAN DUMMY6
                    MAX= DEERSPOP DUMMY7  DUMMY8  FN11CNT;
RUN;

PROC PRINT;
   SUM DEERSPOP AP_MEAN PSA_CNT FN11CNT;
RUN;

proc sort data=cells;
by &domain.;
run;

proc sort data=post_wt;
by &domain.;
run;

data printchk;
merge cells post_wt;
by &domain;
run;

proc sort data=printchk;
by mprid;
run;

title4 "Print of key variables for 50 records";
```

```
Proc print data=Printchk (obs=50);
var &domain. AP ADJWT WRWT ;
where wrwt~=0;
run;
*************************************************************************
* Sort the original data and append the final weight (WRWT)
*************************************************************************;

PROC SORT DATA=IN.&INPT. OUT=ADJWT TAGSORT; BY MPRID; RUN;
PROC SORT DATA=POST_WT TAGSORT; BY MPRID; RUN;

DATA OUT.POST_WT;
   MERGE ADJWT POST_WT;
   BY MPRID;
RUN;

*************************************************************************
* Counts for population total for enrollment group, age, and superregion
*************************************************************************;

TITLE4 "POPULATION COUNTS";

PROC FREQ data=in.framec;
   TABLE ENLSMPL AGESMPL SUPREG;
RUN;

*************************************************************************
* Weighted frequencies for enrollment group, age, and superregion
* using poststratification adjusted weight
*************************************************************************;

TITLE4 "WEIGHTED FREQUENCIES";

PROC FREQ data=in.post_wt;
   WEIGHT WRWT;
   TABLE ENLSMPL AGESMPL SUPREG;
RUN;

title4 "CHECK Individual Level WRWT";
proc univariate data=in.post_wt normal;
where fnstatus=11;
var wrwt;
run;

**********************************
***Added on 10/15/2004 by Haixia Xu for 2004 child weighting***
Merge post_wt with selectc to get the variable MPCSMPL
Merge post_wt with framec to get the variable TNEXREG
**********************************;
data selectc;
set in.selectc(keep=MPRID MPCSMPL);
run;

data framec;
set in.framec(keep=MPRID TNEXREG);
run;

proc sort data=in.post_wt out=post_wt;
by MPRID;
run;

proc sort data=selectc;
by MPRID;
run;

proc sort data=framec;
by MPRID;
run;

data merged;
merge post_wt(in=A) selectc(in=B) framec(in=C);
by MPRID;
if MPCSMPL=1 then MPCSMPLc=1;
```

```
else MPCSMPLc=2;
label MPCSMPLc="Collapsed MPCSMPL:1-Enlisted/Unknown, 2-Officer/Warrant";
if A and B and C;
run;

proc contents data=merged;
run;

title4 "Freq of MPCSMPLc*MPCSMPL";
proc freq data=merged;
table MPCSMPLc*MPCSMPL/missing list;
run;

data OUT.post_wt;
set merged;
run;

**********************************;
*** Calculate the Design Effects ***;
**********************************;
data post_wt_fnl11;
set in.post_wt;
where fnstatus=11;
run;

%design_effects_unequal_weights ( post_wt_fnl11, supreg, WRWT, deff_overall, deff_sup );
%design_effects_unequal_weights ( post_wt_fnl11, agesmpl , WRWT, deff_overall, deff_age );
%design_effects_unequal_weights ( post_wt_fnl11, enlsmpl, WRWT, deff_overall, deff_enl );
%design_effects_unequal_weights ( post_wt_fnl11, svcsmpl, WRWT, deff_overall, deff_svc );
%design_effects_unequal_weights ( post_wt_fnl11, sexsmpl, WRWT, deff_overall, deff_sex );
***Below was Added on 10/15/2004 by Haixia Xu for 2004 child weighting;
%design_effects_unequal_weights ( post_wt_fnl11, MPCSMPLc, WRWT, deff_overall, deff_mpc );
%design_effects_unequal_weights ( post_wt_fnl11, TNEXREG, WRWT, deff_overall, deff_tnex );

title4 "design effect overall";
proc print data = deff_overall;
run;

title4 "design effect by supreg";
proc print data= deff_sup;
sum _freq_;
run;

title4 "design effect by agesmpl";
proc print data= deff_age;
sum _freq_;
run;

title4 "design effect by enlsmpl";
proc print data= deff_enl;
sum _freq_;
run;

title4 "design effect by svcsmpl";
proc print data= deff_svc;
sum _freq_;
run;

title4 "design effect by sexsmpl";
proc print data= deff_sex;
sum _freq_;
run;

title4 "design effect by MPCSMPLc";
proc print data= deff_mpc;
sum _freq_;
run;

title4 "design effect by TNEXREG";
proc print data= deff_tnex;
sum _freq_;
run;

**********************************
```

```
***Added on 10/15/2004 by Haixia Xu for 2004 child weighting
Calculate the weighted total and the population total by TNEXREG
***********************************;
title4 "weighted total by TNEXREG,TNEXREG*agesmpl,TNEXREG*sexsmpl using final weight WRWT";
proc freq data=in.post_wt;
tables TNEXREG TNEXREG*agesmpl TNEXREG*sexsmpl /missing list;
weight WRWT;
run;

title4 "Population total by TNEXREG,TNEXREG*agesmpl,TNEXREG*sexsmpl";
proc freq data=in.framec;
tables TNEXREG TNEXREG*agesmpl TNEXREG*sexsmpl /missing list;
run;

%MEND PROCESS;

%PROCESS(poststr,C,adjwt);
```

E.8.3 WEIGHTING\CHILD\REPWT.SAS - CALCULATE REPLICATED WEIGHTS.

```
*************************************************************************
*** Project:        DoD Child Sampling - Poststratification adjustments
**
*** TASK:    2004 DOD HEALTH CARE SURVEY ANALYSIS (8676-610)
*** PURPOSE: BUILD AND ASSIGN JK WEIGHTS - POST STRATIFICATION - CHILD SURVEY
***          WEIGHTS FOR DOD SURVEY.
***          DOD HEALTH CARE SURVEY FILE.
***          REQUESTED BY DON JANG.
*** WRITTEN: 12/30/99 BY KEITH RATHBUN
*** REVISED: 10/01/2003 BY Esther Friedman
*** UPDATED: 1)12/18/2003 BY Haixia Xu
***          2)10/11/2004 by Haixia Xu
***          3)11/22/2004 by Haixia Xu for rewighting due to the fnstatus changes
***
*** INPUTS:   1) POST_WT.SD2 - Final Weights file - Form C
*** OUTPUTS   1) REPWT.SD2 - JackKnife (JK) Weights file - Form C
*************************************************************************
*;

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER /*mprint mlogic symbolgen*/ ;

*** libname for the count***;
LIBNAME IN    v6 "..\..\..\Data\Cfinal";
LIBNAME OUT   v6 "..\..\..\Data\Cfinal";

%MACRO PROCESS(DOMAIN1, DOMAIN2, FORM);

************************************************************************
* Sort the final weights file by user-specified domains
************************************************************************;
PROC SORT DATA=IN.post_wt
          OUT=post_wt(KEEP=FNSTATUS MPRID BWT &DOMAIN1 &DOMAIN2)
         ;
     BY &DOMAIN1;
RUN;

************************************************************************
* Append SUBSET index (I) to each observation
************************************************************************;
DATA SUBSETS;
   SET post_wt;
   BY &DOMAIN1;

   IF _N_ = 1 OR MOD(_N_-1,60) = 0 THEN SUBSET = 1;
   ELSE SUBSET + 1;

   RETAIN SUBSET;
   BBWT = BWT*(60/59);
RUN;

************************************************************************
************************************************************************
* Generate JackKnife/replicated weights WRWT01-WRWT60
************************************************************************
************************************************************************;
%DO I = 1 %TO 60;

DATA SUBSET;
   SET SUBSETS;
   IF &I = SUBSET THEN DELETE; *Remove the current subset;
RUN;

************************************************************************
* Calculate adjustment factor A1 for each cell
************************************************************************;
DATA CELLSA1  (KEEP=SUMBBWT SUMG1-SUMG4 A1 CELLNAME CELLCNT)
     MPRIDSA1 (KEEP=CELLNAME MPRID FNSTATUS BBWT &DOMAIN1 &DOMAIN2)
    ;
   SET SUBSET;
   BY &DOMAIN1;
```

```
   LENGTH CELLNAME $25;
   CELLNAME = PUT(&DOMAIN1,5.);

   IF FIRST.&DOMAIN1 THEN DO;
      CELLCNT = 0;
      SUMBBWT = 0.0;
      SUMG1   = 0.0;
      SUMG2   = 0.0;
      SUMG3   = 0.0;
           SUMG4   = 0.0;
      A1 = 0.0;
   END;
   CELLCNT + 1;

   ************************************************
   * Accumulate total weight sum
   ************************************************;
   SUMBBWT + BBWT;
   ************************************************
   * Accumulate group 1 weight sum
   ************************************************;
   IF FNSTATUS IN(11,12) THEN SUMG1 + BBWT;
   ************************************************
   * Accumulate group 2 weight sum
   ************************************************;
   ELSE IF FNSTATUS = 20 THEN SUMG2 + BBWT;
   ************************************************
   * Accumulate group 3 weight sum
   ************************************************;
   ELSE IF FNSTATUS = 31 THEN SUMG3 + BBWT;
   ************************************************
   * Accumulate group 4 weight sum
   ************************************************;
   ELSE IF FNSTATUS = 32 THEN SUMG4 + BBWT;

   RETAIN SUMBBWT SUMG1-SUMG4 A1 CELLNAME CELLCNT MPRID;

   IF LAST.&DOMAIN1 THEN DO;
      A1 = (SUMBBWT-SUMG4)/(SUMG1 + SUMG2 + SUMG3);
      OUTPUT CELLSA1;
      CELLCNT = 0;
      SUMBBWT = 0.0;
      SUMG1   = 0.0;
      SUMG2   = 0.0;
      SUMG3   = 0.0;
           SUMG4   = 0.0;
   END; * DOMAIN;
   OUTPUT MPRIDSA1;
RUN;

*****************************************************************************
* Calculate adjustment factor A2 for each cell
*****************************************************************************;
DATA CELLSA2 (KEEP=CELLNAME CELLCNT A1 A2 NUMER DENOM);
   MERGE MPRIDSA1 CELLSA1;
   BY CELLNAME;

   IF FIRST.CELLNAME THEN DO;
      A2 = 0.0;
      NUMER = 0.0;
      DENOM = 0.0;
   END;
   RETAIN NUMER DENOM A2;

   IF FNSTATUS IN(11,12,20) THEN NUMER + BBWT*A1;
   IF FNSTATUS  = 11 THEN DENOM + BBWT*A1;

   IF LAST.CELLNAME THEN DO;
      A2 = NUMER/DENOM;
      OUTPUT CELLSA2;
   END;
RUN;

*****************************************************************************
```

```
* Calculate Adjusted Weight
*************************************************************************;
DATA ADJWGT;
   MERGE CELLSA2 MPRIDSA1;
   BY CELLNAME;
   IF FNSTATUS = 11 THEN
      AWT = A1*A2*BBWT;
   ELSE IF FNSTATUS IN(12,20,41,42) THEN
      AWT = 0;
   ELSE IF FNSTATUS =31 THEN
      AWT = A1*BBWT;
   ELSE IF FNSTATUS =32 THEN
      AWT = BBWT;
   KEEP MPRID FNSTATUS AWT BBWT &DOMAIN1 &DOMAIN2;
RUN;

************************************************************************
* Begin final weight code
************************************************************************
* Assign cell names and calculate the sum of AWT
************************************************************************;

PROC SORT DATA=ADJWGT; BY &DOMAIN2; RUN;

DATA CELLS  (KEEP=SUMAWT &DOMAIN2)
     MPRIDS (KEEP=MPRID FNSTATUS AWT &DOMAIN1 &DOMAIN2)
    ;
   SET ADJWGT;
   BY &DOMAIN2;

   IF FIRST.&DOMAIN2 THEN DO;
      SUMAWT  = 0.0;
   END;

   ************************************************************************
   * Accumulate sum of adjusted weight
   ************************************************************************;
   SUMAWT + AWT;

   RETAIN SUMAWT;

   IF LAST.&DOMAIN2 THEN DO;
      OUTPUT CELLS;
      SUMAWT  = 0.0;
   END; * DOMAIN;
   OUTPUT MPRIDS;
RUN;

************************************************************************
* Merge the population counts and calculate the adjusted population (AP)
************************************************************************;
DATA recountc;
SET in.recountc (KEEP = stratum PSUM0);
   POSTSTR = stratum;
   POP = PSUM0;
RUN;

PROC SORT DATA=recountc OUT=recountc; BY &DOMAIN2; RUN;

DATA AP;
   MERGE recountc CELLS ;
   BY &DOMAIN2;
   AP = POP/SUMAWT;
RUN;

************************************************************************
* Merge the adjusted population and calculate JackKnife Weights
* (WRWT1-WRWT60)
************************************************************************;
DATA SUBSET&I(KEEP=MPRID SUBSET JKWEIGHT);
   MERGE AP(IN=IN1) MPRIDS(IN=IN2);
   BY &DOMAIN2;

   SUBSET = &I;
```

```
   IF IN2 THEN DO;
      JKWEIGHT = AP*AWT;
      OUTPUT;
   END;

RUN;

PROC SORT DATA=SUBSET&I; BY MPRID; RUN;

*************************************************************************
*************************************************************************
* End of JackKnife/replicated weights WRWT01-WRWT60 assignments
*************************************************************************
*************************************************************************;
%END;

*************************************************************************
* Combine all of the JackKnife weight subsets by MPRID
*************************************************************************;
DATA ALLSETS;
   SET SUBSET1   SUBSET2   SUBSET3   SUBSET4   SUBSET5
       SUBSET6   SUBSET7   SUBSET8   SUBSET9   SUBSET10
       SUBSET11  SUBSET12  SUBSET13  SUBSET14  SUBSET15
       SUBSET16  SUBSET17  SUBSET18  SUBSET19  SUBSET20
       SUBSET21  SUBSET22  SUBSET23  SUBSET24  SUBSET25
       SUBSET26  SUBSET27  SUBSET28  SUBSET29  SUBSET30
       SUBSET31  SUBSET32  SUBSET33  SUBSET34  SUBSET35
       SUBSET36  SUBSET37  SUBSET38  SUBSET39  SUBSET40
       SUBSET41  SUBSET42  SUBSET43  SUBSET44  SUBSET45
       SUBSET46  SUBSET47  SUBSET48  SUBSET49  SUBSET50
       SUBSET51  SUBSET52  SUBSET53  SUBSET54  SUBSET55
       SUBSET56  SUBSET57  SUBSET58  SUBSET59  SUBSET60
   ;
   BY MPRID;
   ARRAY JKWT(60) WRWT1-WRWT60; RETAIN WRWT1-WRWT60;
   IF FIRST.MPRID THEN DO;
      DO I = 1 TO 60; DROP I;
         JKWT(I) = . ;
      END;
   END;
   JKWT(SUBSET) = JKWEIGHT;
   IF LAST.MPRID THEN OUTPUT;
   KEEP MPRID WRWT1-WRWT60 SUBSET;
RUN;

*************************************************************************
* Sort the original data, get the final weight (WRWT), append the
* JackKnife/Replicated weights (WRWT1-WRWT60), and label variables.
*************************************************************************;
PROC SORT DATA=IN.POST_WT
          OUT=POST_WT;
     BY MPRID;
RUN;

DATA OUT.REPWT;
   MERGE POST_WT ALLSETS;
   BY MPRID;
   LABEL
      MPRID  = 'MPR ID Number'
      WRWT1  = 'Replicated/JackKnife Weight 1'
      WRWT2  = 'Replicated/JackKnife Weight 2'
      WRWT3  = 'Replicated/JackKnife Weight 3'
      WRWT4  = 'Replicated/JackKnife Weight 4'
      WRWT5  = 'Replicated/JackKnife Weight 5'
      WRWT6  = 'Replicated/JackKnife Weight 6'
      WRWT7  = 'Replicated/JackKnife Weight 7'
      WRWT8  = 'Replicated/JackKnife Weight 8'
      WRWT9  = 'Replicated/JackKnife Weight 9'
      WRWT10 = 'Replicated/JackKnife Weight 10'
      WRWT11 = 'Replicated/JackKnife Weight 11'
      WRWT12 = 'Replicated/JackKnife Weight 12'
      WRWT13 = 'Replicated/JackKnife Weight 13'
      WRWT14 = 'Replicated/JackKnife Weight 14'
      WRWT15 = 'Replicated/JackKnife Weight 15'
```

```
      WRWT16 = 'Replicated/JackKnife Weight 16'
      WRWT17 = 'Replicated/JackKnife Weight 17'
      WRWT18 = 'Replicated/JackKnife Weight 18'
      WRWT19 = 'Replicated/JackKnife Weight 19'
      WRWT20 = 'Replicated/JackKnife Weight 20'
      WRWT21 = 'Replicated/JackKnife Weight 21'
      WRWT22 = 'Replicated/JackKnife Weight 22'
      WRWT23 = 'Replicated/JackKnife Weight 23'
      WRWT24 = 'Replicated/JackKnife Weight 24'
      WRWT25 = 'Replicated/JackKnife Weight 25'
      WRWT26 = 'Replicated/JackKnife Weight 26'
      WRWT27 = 'Replicated/JackKnife Weight 27'
      WRWT28 = 'Replicated/JackKnife Weight 28'
      WRWT29 = 'Replicated/JackKnife Weight 29'
      WRWT30 = 'Replicated/JackKnife Weight 30'
      WRWT31 = 'Replicated/JackKnife Weight 31'
      WRWT32 = 'Replicated/JackKnife Weight 32'
      WRWT33 = 'Replicated/JackKnife Weight 33'
      WRWT34 = 'Replicated/JackKnife Weight 34'
      WRWT35 = 'Replicated/JackKnife Weight 35'
      WRWT36 = 'Replicated/JackKnife Weight 36'
      WRWT37 = 'Replicated/JackKnife Weight 37'
      WRWT38 = 'Replicated/JackKnife Weight 38'
      WRWT39 = 'Replicated/JackKnife Weight 39'
      WRWT40 = 'Replicated/JackKnife Weight 40'
      WRWT41 = 'Replicated/JackKnife Weight 41'
      WRWT42 = 'Replicated/JackKnife Weight 42'
      WRWT43 = 'Replicated/JackKnife Weight 43'
      WRWT44 = 'Replicated/JackKnife Weight 44'
      WRWT45 = 'Replicated/JackKnife Weight 45'
      WRWT46 = 'Replicated/JackKnife Weight 46'
      WRWT47 = 'Replicated/JackKnife Weight 47'
      WRWT48 = 'Replicated/JackKnife Weight 48'
      WRWT49 = 'Replicated/JackKnife Weight 49'
      WRWT50 = 'Replicated/JackKnife Weight 50'
      WRWT51 = 'Replicated/JackKnife Weight 51'
      WRWT52 = 'Replicated/JackKnife Weight 52'
      WRWT53 = 'Replicated/JackKnife Weight 53'
      WRWT54 = 'Replicated/JackKnife Weight 54'
      WRWT55 = 'Replicated/JackKnife Weight 55'
      WRWT56 = 'Replicated/JackKnife Weight 56'
      WRWT57 = 'Replicated/JackKnife Weight 57'
      WRWT58 = 'Replicated/JackKnife Weight 58'
      WRWT59 = 'Replicated/JackKnife Weight 59'
      WRWT60 = 'Replicated/JackKnife Weight 60'
   ;
RUN;

TITLE1 "2004 DOD Health Survey Final/Replicated Weights";
TITLE2 "Program Output: REPWT.SD2";

************************************************
/** Added on 10/15/2004 **/
Check the structure of the data set OUT.repwt;
************************************************;
proc sort data=OUT.repwt out=sorted1;
by stratum MPRID;
run;

proc print data=sorted1 (obs=500);
var stratum MPRID SUBSET fnstatus wrwt wrwt1-wrwt5;
run;

** End of the modification;


PROC CONTENTS DATA=OUT.REPWT;

PROC MEANS DATA=OUT.REPWT n mean stddev min max sum;
VAR  WRWT WRWT1-WRWT60;
RUN;

PROC SORT DATA=OUT.REPWT;
BY MPRID;
```

```
RUN;

DATA OUT.REPWT;
   SET OUT.REPWT;
   BY MPRID;

   ARRAY WGTS(60) WRWT1-WRWT60;
   DO I = 1 TO 60; DROP I;
      IF WGTS(I) EQ . THEN WGTS(I) = 0;
   END;

   KEEP MPRID BWT adjwt POP POSTSTR FNSTATUS WRWT WRWT1-WRWT60;
RUN;

PROC SORT DATA=OUT.REPWT; BY &DOMAIN2; RUN;
PROC MEANS DATA=OUT.REPWT NOPRINT;
   VAR POP WRWT;
   BY &DOMAIN2;
   OUTPUT OUT=STATS(KEEP=&DOMAIN2 DEERSPOP POPCNT)
                    SUM= DUMMY1   POPCNT
                    MAX= DEERSPOP DUMMY2;
RUN;
Proc print data=stats;

PROC MEANS DATA=OUT.REPWT n mean stddev min max sum;
VAR WRWT WRWT1-WRWT60;
RUN;

************************************************
/** Added on 10/15/2004 **/
Check the structure of the data set OUT.repwt;
************************************************;
data repwt2;
  set out.repwt;
  where fnstatus = 11;
  array subset2(60) wrwt1-wrwt60;
  do m=1 to 60;
     if subset2(m)=0 then
           subset=m;
  end;
run;

proc sort data = repwt2;
by subset;
run;

proc means data = repwt2 noprint;
by subset;
var adjwt wrwt1-wrwt60;
output out = check2 sum= / autoname;
run;

proc print data = check2;
run;
** End of the modification;

***Added on 10/15/2004 for 2004 child weighting.
Drop the variable fnstatus which was not kept in the previous years;
data OUT.repwt;
set OUT.repwt;
drop fnstatus ;
run;

%MEND;

%PROCESS(stratum, POSTSTR, C);
```

E.8.4 WEIGHTING\CHILD\RECOUNTC.SAS - CREATE THE COUNT DATA SET FOR THE CHILD SURVEY.

```
*************************************************************************
*** Project:        2004 Health Care Survey of DoD Beneficiaries - Child
***
*** Purpose: Create the count data set for the child survey.  This consists
***          of the population counts by various cell definitions:
***
***             PSUM0 = Stratifcation Variable Count
***             PSUM1 = SUPREG Count
***             PSUM2 = ENLSMPL Count
***             PSUM3 = AGESMPL Count
***             TOTAL = Total Population
***
*** Input: FRAMEC.sd2
*** Output: recountc.sd2
***
*** Updated: 10/11/2004 by Haixia Xu
*************************************************************************;

*** Setup the titles. ***;
title1 '2004 Health Care Survey of DoD Beneficiaries - Child';
title2 'Create population counts by various cell definitions.';

*** Setup the options. ***;
options ls=132 ps=79 nocenter compress=yes mlogic mprint symbolgen;

*** Setup the paths where the files are located. ***;
libname in  v6 '..\..\..\Data\Cfinal';
libname out  v6  '..\..\..\Data\Cfinal';

proc freq data=in.framec;
  tables stratum*supreg*enlsmpl*agesmpl/list;
  run;

*** Set the stratification variable. ***;
%let strata = stratum;

* get sampling vars before collapsements;
data framec ;
   set in.framec;
run;

TITLE5 "FREQS of sample FRAMEC.SD2";
PROC FREQ DATA=framec;
   TABLES &strata. SUPREG ENLSMPL AGESMPL
  /MISSING LIST;
RUN;

PROC SORT DATA=framec OUT=FRAMEC;
   BY &strata. SUPREG ENLSMPL AGESMPL;
RUN;

PROC MEANS DATA=FRAMEC NOPRINT;
   BY  &strata. SUPREG ENLSMPL AGESMPL;
   VAR ENLSMPL;
   OUTPUT
   OUT=T0(KEEP=&strata. SUPREG ENLSMPL AGESMPL)
   N=DUMMY;
RUN;

PROC FREQ DATA=FRAMEC NOPRINT;
   TABLES &strata.
  /MISSING LIST OUT=T1(RENAME=(COUNT=PSUM0)
               KEEP=COUNT &strata.) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=FRAMEC NOPRINT;
   TABLES SUPREG
  /MISSING LIST OUT=T2(RENAME=(COUNT=PSUM1)
```

```
               KEEP=COUNT SUPREG) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=FRAMEC NOPRINT;
   TABLES ENLSMPL
  /MISSING LIST OUT=T3(RENAME=(COUNT=PSUM2)
               KEEP=COUNT ENLSMPL) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=FRAMEC NOPRINT;
   TABLES AGESMPL
  /MISSING LIST OUT=T4(RENAME=(COUNT=PSUM3)
               KEEP=COUNT AGESMPL) NOPERCENT NOCUM NOPRINT;
RUN;

PROC SORT DATA=T0; BY &strata.; RUN;
DATA T0;
   MERGE T0 T1;
   BY  &strata.;
RUN;

PROC SORT DATA=T0; BY SUPREG; RUN;
DATA T0;
   MERGE T0 T2;
   BY  SUPREG;
RUN;

PROC SORT DATA=T0; BY ENLSMPL; RUN;
DATA T0;
   MERGE T0 T3;
   BY  ENLSMPL;
RUN;

PROC SORT DATA=T0; BY AGESMPL; RUN;

proc means data=framec noprint;
var prn;
output out=total n=total;
run;

DATA OUT.recountc;
if _n_=1 then set total(drop = _type_ _freq_);
   MERGE T0 T4;
   BY  AGESMPL;
   LABEL PSUM0 = 'PSUM0 - &strata. Count'
         PSUM1 = 'PSUM1 - SUPREG Count'
         PSUM2 = 'PSUM2 - ENLSMPL Count'
         PSUM3 = 'PSUM3 - AGESMPL Count'
         TOTAL = 'TOTAL Population'
        ;
RUN;

TITLE5 "Information for recountc.SD2";

PROC CONTENTS data=out.recountc;
RUN;

PROC PRINT data=out.recountc;
var &strata. supreg enlsmpl agesmpl psum0-psum3 total;
sum psum0;
RUN;
```

E.9.1 WEIGHTING\CHILD\RESPONSE_RATE\TABLE02.SAS - CALCULATE RESPONSE RATES.

```
*************************************************************************
*
* PROGRAM: TABLE02.SAS
* TASK:    2004 DOD HEALTH CARE SURVEY ANALYSIS (6077-300)
* PURPOSE: BUILD TABLE 2: RESPONSE RATES BY DOMAIN SUMMARY
*          Quarterly DOD HEALTH CARE SURVEY FILE.
* WRITTEN: 11/09/1999 BY KEITH RATHBUN
*
* MODIFIED:
* 1) 12/14/2000, Keith Rathbun - Added printing of weighted (WN) and
*    unweighted (SN) population sizes.  Also, Update for quarterly survey
*    to use BWT instead of BWT99 (generalized variable name for ease of
*    maintenance).
* 2) 02/01/2001, Keith Rathbun - Added the PERIOD parameter.
* 3) 01/30/2003, Esther Friedman - added nested macro so it would run for all 4 quarters trickle
files
* INCLUDES: 1) TABLE02.IN1
*           2) TABLE02.IN2
* UPDATED: 12/22/2003 By Haixia Xu
*          10/19/2004 by Haixia Xu for 2004 data
*          10/26/2004 by Haixia Xu after the late response
*          11/23/2004 BY Haixia Xu for the reweighting due to the fnstatus coding changes
*************************************************************************;
*LIBRARIES;

 LIBNAME IN3    v8   "F:\DOD\Q3_2004\Data\Cfinal"; /* newmerge.sd7 */
 LIBNAME DODIN3 v6   "F:\DOD\Q3_2004\Data\Cfinal"; /* selectc.sd2 */

OPTIONS PS=79 LS=132 COMPRESS=YES ERRORS=1 NOCENTER NOFMTERR;

*LIBNAME LIBRARY &LIB;

%let period= dod\q3_2004_c;

%macro doit;
  %do qtr=3 %to 3;

************************************************************************
* Merge repwt and selectc files to add ebg_com
************************************************************************;

data IN&qtr..newmerge;
 set DODIN&qtr..selectc;
 format _all_;
 run;

%MACRO PROCESS(INPT,FORM,LIB);


************************************************************************
* Process OVERALL Summary of response rates
************************************************************************
;

DATA _NULL_;
   SET IN&qtr..&INPT END=FINISHED;
   format _all_;
   IF _N_ = 1 THEN DO;
      SN    = 0;
      SN1   = 0;
      SN11  = 0;
      SN12  = 0;
      SN2   = 0;
      SN31   = 0;
      SN4   = 0;
      SN41  = 0;
      SN42  = 0;
      WN   = 0;
      WN1  = 0;
      WN11 = 0;
      WN12 = 0;
```

```
      WN2  = 0;
      WN31  = 0;
      WN4  = 0;
      WN41 = 0;
      WN42 = 0;
   END;
*****************************************************
* Accumulate group 1 weighted and unweighted counts
*****************************************************
;
SN + 1;
WN + BWT;
IF FNSTATUS IN(11,12) THEN DO;
   SN1 + 1;
   WN1 + BWT;
   IF FNSTATUS = 11 THEN DO;
      SN11 + 1;
      WN11 + BWT;
   END;
   ELSE DO;
      SN12 + 1;
      WN12 + BWT;
   END;
END;
*****************************************************
* Accumulate group 2 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS = 20 THEN DO;
   SN2 + 1;
   WN2 + BWT;
END;
*****************************************************
* Accumulate group 3 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS = 31 THEN DO;
   SN31 + 1;
   WN31 + BWT;
END;
*****************************************************
* Accumulate group 4 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS IN(41,42) THEN DO;
   SN4 + 1;
   WN4 + BWT;
   IF FNSTATUS = 42 THEN DO;
      SN42 + 1;
      WN42 + BWT;
   END;
   ELSE DO;
      SN41 + 1;
      WN41 + BWT;
   END;
END;

DROP I;
RETAIN
   SN
   SN1
   SN11
   SN12
   SN2
   SN31
   SN4
   SN41
   SN42
   WN
   WN1
   WN11
   WN12
   WN2
   WN31
```

```
   WN4
   WN41
   WN42
  ;

   IF FINISHED THEN GO TO FINISHED;

   RETURN;

FINISHED:
   FILE "F:\DOD\Q&qtr._2004\Data\Cfinal\Response_Rate\TABLE02&FORM..OUT" LRECL=132;
   PUT; PUT;
   PUT @001 "TABLE 2: OVERALL RESPONSE RATES SUMMARY";
   PUT @001 "10-19-2004, TASK: 6077-300";
   PUT;
   PUT "SUMMARY OF GROUP COUNTS: FORM &FORM";
   PUT;
   PUT @050 "UNWEIGHTED COUNT"
       @100 "WEIGHTED COUNT"
      ;
   PUT @040 'FLR'
       @050 'FCR'
       @060 'FRR'
       @070 'POP'
       @090 'FLR'
       @100 'FCR'
       @110 'FRR'
       @120 'POP'
      ;
   %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN2";
RUN;
%MEND PROCESS;

************************************************************************
* Process Single Domain where domain1 is the variable of interest
************************************************************************;

%MACRO PROCESS1(DOMAIN1,INPT,FORM,LIB);

*LIBNAME LIBRARY &LIB;

PROC SORT DATA=IN&qtr..&INPT OUT=&INPT ; BY &DOMAIN1; RUN;


DATA _NULL_;
   SET &INPT;
   format _all_;
   BY &DOMAIN1;
   FILE "F:\DOD\Q&qtr._2004\Data\Cfinal\Response_Rate\&DOMAIN1..OUT" LRECL=132;
   LENGTH VARNAME1 $8;
   LENGTH VARIABLE $30;
   CALL VNAME(&DOMAIN1,VARNAME1);
   VARIABLE = VARNAME1;
   %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN1";
   IF LAST.&DOMAIN1 THEN DO;
      PUT @001 &DOMAIN1 @;
      %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN2";
   END; * DOMAIN;
RUN;
%MEND PROCESS1;

************************************************************************
* Process Double Domain where domain1/domain2 are the variables of interest
************************************************************************
;
%MACRO PROCESS2(DOMAIN1,DOMAIN2,INPT,FORM,LIB);

*LIBNAME LIBRARY &LIB;

PROC SORT DATA=IN&qtr..&INPT OUT=&INPT ; BY &DOMAIN1 &DOMAIN2; RUN;

DATA _NULL_;
   format _all_;
   SET &INPT;
```

```
   BY &DOMAIN1 &DOMAIN2;
   FILE "F:\DOD\Q&qtr._2004\Data\Cfinal\Response_Rate\&DOMAIN1&DOMAIN2..OUT" LRECL=132;
   LENGTH VARNAME1 $8;
   LENGTH VARNAME2 $8;
   LENGTH VARIABLE $30;
   CALL VNAME(&DOMAIN1,VARNAME1);
   CALL VNAME(&DOMAIN2,VARNAME2);
   VARIABLE = VARNAME1 || " " || VARNAME2;
   %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN1";
   IF LAST.&DOMAIN2 THEN DO;
      PUT @001 &DOMAIN1 @;
      PUT @025 &DOMAIN2 @;
      %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN2";
      SN    = 0;
      SN1   = 0;
      SN11  = 0;
      SN12  = 0;
      SN2   = 0;
      SN31   = 0;
      SN4   = 0;
      SN41  = 0;
      SN42  = 0;
      WN   = 0;
      WN1  = 0;
      WN11 = 0;
      WN12 = 0;
      WN2  = 0;
      WN31  = 0;
      WN4  = 0;
      WN41 = 0;
      WN42 = 0;
   END; * DOMAIN;
RUN;
%MEND PROCESS2;

*************************************************************************
* Process Triple Domain where domain1-3 are the variables of interest
*************************************************************************
;
%MACRO PROCESS3(DOMAIN1,DOMAIN2,DOMAIN3,INPT,FORM,LIB);

*LIBNAME LIBRARY &LIB;

PROC SORT DATA=IN&qtr..&INPT OUT=&INPT ; BY &DOMAIN1 &DOMAIN2 &DOMAIN3; RUN;

DATA _NULL_;
  format _all_;
   SET &INPT;
   BY &DOMAIN1 &DOMAIN2 &DOMAIN3;
   FILE "F:\DOD\Q&qtr._2004\Data\Cfinal\Response_Rate\&DOMAIN1&DOMAIN2&DOMAIN3..OUT" LRECL=132;
   LENGTH VARNAME1 $8;
   LENGTH VARNAME2 $8;
   LENGTH VARNAME3 $8;
   LENGTH VARIABLE $30;
   CALL VNAME(&DOMAIN1,VARNAME1);
   CALL VNAME(&DOMAIN2,VARNAME2);
   CALL VNAME(&DOMAIN3,VARNAME3);
   VARIABLE = VARNAME1 || " " || VARNAME2 || " " || VARNAME3;
   %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN1";
   IF LAST.&DOMAIN3 THEN DO;
      PUT @001 &DOMAIN1 @;
      PUT @015 &DOMAIN2 @;
      PUT @035 &DOMAIN3 @;
      %INCLUDE "F:\DOD\Q&qtr._2004\Programs\Weighting\child\Response_Rate\TABLE02.IN2";
      SN    = 0;
      SN1   = 0;
      SN11  = 0;
      SN12  = 0;
      SN2   = 0;
      SN31   = 0;
      SN4   = 0;
      SN41  = 0;
      SN42  = 0;
      WN   = 0;
```

```
      WN1  = 0;
      WN11 = 0;
      WN12 = 0;
      WN2  = 0;
      WN31  = 0;
      WN4  = 0;
      WN41 = 0;
      WN42 = 0;
   END; * DOMAIN;
RUN;

%MEND PROCESS3;


*********************************************************
* PROCESS OVERALL RESPONSE RATE TABULATION - FORM C
*********************************************************
;
%PROCESS(newmerge, C, "J:\&PERIOD\DATA\AFINAL\FMTLIB");

*********************************************************
* PROCESS SINGLE DOMAIN RESPONSE RATE TABULATION - FORM C
*********************************************************
;
%PROCESS1(supreg, newmerge, "FORM C",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
%PROCESS1(enlsmpl, newmerge, "FORM C",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
%PROCESS1(agesmpl,  newmerge, "FORM C",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS1(raceethn,  selectc, "FORM A",
        "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS1(ebg_com,  selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS1(enbgsmpl, selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS1(cacsmpl, selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS1(patcat, selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");

*********************************************************
* PROCESS DOUBLE DOMAIN RESPONSE RATE TABULATION - FORM A
*********************************************************
;
*%PROCESS2(patcat, svcsmpl, selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS2(patcat, sexsmpl, selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS2(patcat, raceethn,selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*%PROCESS2(xregion, cacsmpl,selectc, "FORM A",
         "J:\&PERIOD\DATA\AFINAL\FMTLIB");
*********************************************************
* PROCESS TRIPLE DOMAIN RESPONSE RATE TABULATION - FORM A
*********************************************************
;
*%PROCESS3(XXXXXXXX, XXXXXXXX, XXXXXXXX, XXXXXXXX, "FORM A",
         *"D:\KEITH\&PERIOD\DATA\FMTLIB");

                %end; *end of do for each quarter;
                %mend doit;
                %doit;
run;
```

E.9.2 WEIGHTING\CHILD\RESPONSE_RATE\TABLE02.IN1 - INCLUDE FILE1 USED TO CALCULATE RESPONSE RATES.

```
*************************************************************************
*
* PROGRAM: TABLE02.IN1
* TASK:    2002 DOD HEALTH CARE SURVEY ANALYSIS
* PURPOSE: COMMON CODE INCLUDE FILE USED TO BUILD
*          TABLE 2: RESPONSE RATES BY DOMAIN SUMMARY
*          2002 DOD HEALTH CARE SURVEY FILE.
* WRITTEN: 01/08/99 BY KEITH RATHBUN
*
* MODIFIED:
* 1) 5/17/1999, Keith Rathbun - Removed printing of the final location rate
*    (FLR) and final completion rate (FCR).
* 2) 7/07/1999, Keith Rathbun - Added back printing of FLR
* 3) 12/14/2000, Keith Rathbun - Update for quarterly survey to use BWT
*    instead of BWT99 (generalized variable name for ease of maintenance).
*
*************************************************************************
*;
IF _N_ = 1 THEN DO;
   PUT; PUT;
   PUT @001 "TABLE 2: RESPONSE RATES BY DOMAIN SUMMARY";
   PUT @001 "10-19-2004";
   PUT;
   PUT "SUMMARY OF GROUP COUNTS: " &FORM;
   PUT "VARIABLE = " VARIABLE;
   PUT;
   PUT @050 "UNWEIGHTED COUNT"
       @100 "WEIGHTED COUNT"
      ;
   PUT @040 'FLR'
       @050 'FCR'
       @060 'FRR'
       @070 'POP'
       @090 'FLR'
       @100 'FCR'
       @110 'FRR'
       @120 'POP'
      ;
END;
IF FIRST.&DOMAIN1 THEN DO;
   SN    = 0;
   SN1   = 0;
   SN11  = 0;
   SN12  = 0;
   SN2   = 0;
   SN31   = 0;
   SN4   = 0;
   SN41  = 0;
   SN42  = 0;
   WN   = 0;
   WN1  = 0;
   WN11 = 0;
   WN12 = 0;
   WN2  = 0;
   WN31  = 0;
   WN4  = 0;
   WN41 = 0;
   WN42 = 0;
END;
*****************************************************
* Accumulate group 1 weighted and unweighted counts
*****************************************************
;
SN + 1;
WN + BWT;
IF FNSTATUS IN(11,12) THEN DO;
   SN1 + 1;
   WN1 + BWT;
   IF FNSTATUS = 11 THEN DO;
```

```
      SN11 + 1;
      WN11 + BWT;
   END;
   ELSE DO;
      SN12 + 1;
      WN12 + BWT;
   END;
END;
*****************************************************
* Accumulate group 2 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS = 20 THEN DO;
   SN2 + 1;
   WN2 + BWT;
END;
*****************************************************
* Accumulate group 3 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS = 31 THEN DO;
   SN31 + 1;
   WN31 + BWT;
END;
*****************************************************
* Accumulate group 4 weighted and unweighted counts
*****************************************************
;
ELSE IF FNSTATUS IN(41,42) THEN DO;
   SN4 + 1;
   WN4 + BWT;
   IF FNSTATUS = 42 THEN DO;
      SN42 + 1;
      WN42 + BWT;
   END;
   ELSE DO;
      SN41 + 1;
      WN41 + BWT;
   END;
END;

DROP I;
RETAIN
   SN
   SN1
   SN11
   SN12
   SN2
   SN31
   SN4
   SN41
   SN42
   WN
   WN1
   WN11
   WN12
   WN2
   WN31
   WN4
   WN41
   WN42
  ;
```

E.9.3 WEIGHTING\CHILD\RESPONSE_RATE\TABLE02.IN2 - INCLUDE FILE2 USED TO CALCULATE RESPONSE RATES.

```
*************************************************************************
*
* PROGRAM: TABLE02.IN2
* TASK:    QUARTERLY DOD HEALTH CARE SURVEY ANALYSIS
* PURPOSE: COMMON CODE INCLUDE FILE USED TO BUILD
*          TABLE 2: RESPONSE RATES BY DOMAIN SUMMARY
*          QUARTERLY DOD HEALTH CARE SURVEY FILE.
* WRITTEN: 01/08/99 BY KEITH RATHBUN
*
* MODIFIED:
* 1) 5/17/1999, Keith Rathbun - Removed printing of the final location rate
*    (FLR) and final completion rate (FCR).
* 2) 7/07/1999, Keith Rathbun - Added back printing of FLR
* 3) 12/14/2000, Keith Rathbun - Added printing of weighted (WN) and
*    unweighted (SN) population sizes.
*
*************************************************************************
*;

   *Final Response Rate;
   FRR1 = SN11/(SN1 + SN2 + SN4*((SN1 + SN2)/(SN1 + SN2 + SN31)) );
   FRR2 = WN11/(WN1 + WN2 + WN4*((WN1 + WN2)/(WN1 + WN2 + WN31)) );

   *Final Location Rate;
   L = ((SN1 + SN2)/(SN1 + SN2 + SN31))*SN41;
   WL = ((WN1 + WN2)/(WN1 + WN2 + WN31))*WN41;
   FLR1 = (SN1 + SN2 + L)/(SN1 + SN2 + SN4*((SN1 + SN2)/(SN1 + SN2 + SN31)));
   FLR2 = (WN1 + WN2 + WL)/(WN1 + WN2 + WN4*((WN1 + WN2)/(WN1 + WN2 + WN31)));

   *Final Completion Rate;
   FCR1 = SN11/(SN1 + SN2 + L);
   FCR2 = WN11/(WN1 + WN2 + WL);
   PUT @040 FLR1  4.3
       @050 FCR1  4.3
       @060 FRR1  4.3
       @066 SN   7.0
       @090 FLR2  4.3
       @100 FCR2  4.3
       @110 FRR2  4.3
       @116 WN    7.0
      ;
```

E.10 WEIGHTING\ADDWGTSC.SAS - MERGE WEIGHTS ONTO DATA FILE.

```
*************************************************************************
*
* PROGRAM:  ADDWGTS.SAS
* TASK:     DOD HEALTH CARE SURVEY ANALYSIS (6077-220)
* PURPOSE:  MERGE THE FINAL WEIGHTS FILE WITH THE FINAL
*           QUESTIONNAIRE/SAMPLE FILE
*
* WRITTEN:  02/02/2001 BY KEITH RATHBUN
*
* INPUTS:   1) REPWT.SD2  - Final/Replicated Weights file - FORM A
*           2) MERGEC.SD2 - Final FORM C Questionnaire/Sample File
*
* OUTPUTS:  1) HCSyyc_n.SD2 - Final FORM C Questionnaire/Sample File
*              combined with Final/Replicated Weights file - FORM A
*              where  yy = Year
*                      c = Child
*                      n = Final Dataset Suffix/Version Number
*
* MODIFIED: 1) 4/23/2002 - DKB added DROP statement to drop the permanent
*              random number variable (PRN) that does not need to be on the
*              final data file sent to DoD
*           2) 4/17/2003 - JA added length statement to order variables from
*              weight file.  The variable TREATU_R is positioned after the
*              replicate weights.
*************************************************************************
;
LIBNAME IN      V612 "..\..\DATA\CFINAL";
LIBNAME OUT     V612 "..\..\DATA\CFINAL";
LIBNAME LIBRARY V612 "..\..\DATA\CFINAL\FMTLIB";

OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER;

%MACRO PROCESS(DSNI_1=,DSNI_2=,DSNO=);
************************************************************************
* Merge the final weights file with the final Questionnaire/Sample file
************************************************************************;
PROC SORT DATA=IN.&DSNI_1 OUT=&DSNI_1; BY MPRID; RUN;
PROC SORT DATA=IN.&DSNI_2 OUT=&DSNI_2; BY MPRID; RUN;

DATA OUT.&DSNO;
   MERGE &DSNI_2(IN=IN2)
         &DSNI_1(IN=IN1);
   BY MPRID;
   IF FNSTATUS = 11;
   IF IN1 AND IN2;
   IF NOT (IN1 AND IN2) THEN PUT "ERROR: NO MATCHING MPRID WITH &DSNI_1..SD2 AND &DSNI_2..SD2";
   LABEL KEYCOUNT = "# of Key Questions Answered";
   LABEL WRWT     = "Final Weight";
RUN;


TITLE1 "DOD Quarterly Health Care Survey (6077-210)";
TITLE2 "Program Name: ADDWGTS.SAS By Keith Rathbun";
TITLE3 "Program Inputs: &DSNI_1..SD2 -- &DSNI_2..SD2";
TITLE4 "Program Outputs: &DSNO..SD2";
PROC CONTENTS; RUN;

%MEND PROCESS;

%PROCESS(DSNI_1=REPWT, DSNI_2=MERGEC, DSNO=HCS04C_1);
```

E.11 WEIGHTING\PROCCOPC.SAS - CREATE XPORT VERSION FROM DATABASE.

```
*******************************************************************************
*
* PROGRAM: PROCCOPC.SAS
* PURPOSE: Create XPORT file from SD2
* WRITTEN  April 26, 2000 BY Keith Rathbun
* TASK:    2004 Quarterly DoD Database Development (6077-300)
*
* INPUTS:  1) HCSyyC_v.SD2 - DoD Annual HCSDB for child dataset
*
* OUTPUTS: 1) HCSyyC_v.XPT - DoD Annual HCSDB for child dataset (XPORT)
*             where yy = 2-digit year
*                    C = Child
*                    v = Version Number
*
* NOTES:   1) Be sure to update the global parameters for the current
*             quarter (QTR) with the appropriate dataset name (DSN)
*             prior to running this program.
*
*******************************************************************************
* Define global parameters
*******************************************************************************;
%LET DSN = HCS04C_1;
%LET QTR = ..\..\..\Q3_2004\;
*******************************************************************************
* Define SAS libraries and options
*******************************************************************************;
LIBNAME IN V612 "&QTR.DATA\CFINAL";
*******************************************************************************
* Define SAS Transport file
*******************************************************************************;
LIBNAME OUT XPORT "&QTR.DATA\CFINAL\&DSN..XPT";
*******************************************************************************
* Generate SAS Transport file
*******************************************************************************;
PROC COPY IN=IN  OUT=OUT ; * Converts input file to transport file;
          SELECT &DSN;     * Selects SD2 file to copy;
RUN;
```