Health Care Survey of DoD Beneficiaries:

FY2012 Adult Sampling Report
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Executive Summary

The Health Care Survey of DoD Beneficiaries (HCSDB) is a quarterly survey of active duty military personnel, retirees, and their family members. The HCSDB measures beneficiaries' health care status as well as their access to, use of, and satisfaction with care in the military health system (MHS). The HCSDB, was fielded annually from 1995 to 2000 and has been fielded quarterly since the first quarter of 2001. The FY2012 Adult HCSDB sample design is same as the 2011 design. In cooperation with TRICARE Management Activity (TMA) staff, we selected five subpopulations important to data users and policymakers: (1) beneficiaries enrolled with a military primary care manager (PCM[1]) or active duty beneficiaries; (2) beneficiaries who use Managed Care Support Contractors; (3) beneficiaries who use TRICARE Standard/Extra; (4) beneficiaries enrolled in TRICARE Reserve Select; (5) beneficiaries age 65 or older. Along with geographic area, these five subpopulations form the foundation of the stratification scheme. As in years past we continue to use a permanent random number sample selection method. This report documents the procedures Mathematica Policy Research, Inc. (Mathematica) used to design and select the sample of adult beneficiaries for the first quarterly survey of FY2012. Subsequent quarterly surveys in FY2012 will essentially follow the same design.

The FY2012 Adult HCSDB has a stratified sample design with 51,000 adult beneficiaries selected each quarter. The sample selection process involved five steps: (1) construction of the sampling frame and definition of sampling strata; (2) allocation of the sample to strata to satisfy the study's precision goals; (3) selection of the survey sample using a permanent random number sample selection algorithm; (4) creation of the sampling weights, which reflect the probability of selection; and (5) verification of results to ensure that sampling was implemented as specified.

The FY2012 Adult HCSDB sample design's major features are:

- The sampling frame consisted of the roughly 7.6 million beneficiaries 18 or older or all the active duty regardless of their age that were eligible for military health care benefits as of June 30, 2011. The sampling frame consists of beneficiaries living both in the U.S. and abroad.

- We first stratified the sampling frame by five analytic groups, as described above. Each group was further stratified by a combination of geographic area[2] and enrollment/beneficiary group.[3]

- The precision goal for the adult survey estimates was expressed in terms of half-lengths of 95 percent confidence intervals for a percentage of size 50. Each quarter the survey should yield estimates with precision levels of 6 percentage points for: beneficiaries enrolled with a military

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[1] PCM represents whether the beneficiary is enrolled to a Military or Civilian PCM, based on the TRICARE Prime & USFHP Enrollment DMIS Code.

[2] The geographic areas include military treatment facilities (MTFs) for enrollees with certain military PCMs, TNEX regions for all others enrolled with a military treatment facility (MTF), and TNEX regions for all other beneficiaries.

[3] Types of TRICARE Prime enrollment status and beneficiary groups include: (1) active duty; (2) active duty family members enrolled in Prime with a civilian PCM; (3) active duty family members enrolled in Prime with a military PCM; (4) active duty family members not enrolled in Prime; (5) retirees and their family members younger than 65 enrolled in Prime with a civilian PCM; (6) retirees and their family members younger than 65 enrolled in Prime with a military PCM; (7) retirees and their family members younger than 65 not enrolled in Prime; (8) retirees and their family members age 65 or older enrolled in Senior Prime with a civilian PCM; (9) retirees and their family members age 65 or older enrolled in Senior Prime with a military PCM; and (10) retirees and their family members age 65 or older not enrolled in Senior Prime;and (11) beneficiaries enrolled in TRICARE Reserve Select.

PCM by TNEX region; beneficiaries enrolled to Managed Care Support Contractors by TNEX region; and beneficiaries 65 or older by TNEX region. Combining four quarters of the Quarterly Beneficiary Survey should yield estimates with precision levels of 6 percentage points for the following subpopulations: beneficiaries enrolled to key MTFs, and TRICARE Reserve Select enrollees. Combining four quarters of data should yield estimates with precision levels of 5 percentage points for Standard/Extra users by beneficiary group.

- At the time of the Q1FY2012 sampling, we used the unweighted response rates from Q3FY2011 as the expected response rates for FY2012. They are 18 percent for active duty beneficiaries; 17 percent for active duty family members enrolled in Civilian PCM; 17 percent for active duty family members enrolled in Military PCM; 12 percent for active duty family members not enrolled in Prime; 45 percent for retirees and their family members younger than 65 enrolled in Civilian PCM; 43 percent for retirees and their family members younger than 65 enrolled in Military PCM; 39 percent for retirees and family members younger than 65 not enrolled in Prime; 69 percent for retirees and their family members age 65 or older; and 24 percent for the TRICARE Reserve Select (TRS). If the response rates obtained are equal to or better than the response rates of the third quarter of 2011 HCSDB response rates, we expect to attain the precision requirements under the budgetary sample size of 51,000.

- We continue to use a permanent random number sample selection algorithm to ensure that beneficiaries will not be selected for more than one quarterly survey in FY2012.

Chapter

1

Introduction

The Health Care Survey of Department of Defense Beneficiaries (HCSDB) is a quarterly survey of active duty military personnel, retirees, and their family members eligible for care under the military health system (MHS). The HCSDB measures the health status of MHS beneficiaries as well as their access to, use of, and satisfaction with care. The first HCSDB was conducted in 1995, and the survey was fielded annually until 2000. From 2001 on, the HCSDB has consisted of four independent, cross-sectional quarterly surveys, which are combined into an annual dataset at the end of the year. In 2012, the annual data set combined the four quarters of the fiscal year 2012.

In FY2012 Adult HCSDB sample design, in cooperation with TRICARE Management Activity (TMA) staff, we selected five subpopulations important to data users and policy makers: (1) beneficiaries enrolled with a military PCM or active duty beneficiaries; (2) beneficiaries who use Managed Care Support Contractors (MCSC); (3) beneficiaries who use Standard/Extra; (4) beneficiaries enrolled in TRICARE Reserve Select; (5) beneficiaries age 65 or older. These five subpopulations form the stratification scheme's foundation. Each subpopulation in (1),(2),(3) above was further stratified by geographic area, enrollment, and beneficiary group.

Subpopulation in (4) was not further stratified. Subpopulation in (5) was further stratified by geographic area. Subsequently, as in years past, we continue to use a permanent random number sample selection method (for further discussion, please see chapter 5).

This report documents the procedures Mathematica Policy Research, Inc. (Mathematica) used to design and select the sample of adult beneficiaries for the first quarterly survey of FY2012. Subsequent quarterly surveys in FY2012 will essentially follow the same design. Chapter 2 explains how Mathematica used a population data file of all MHS beneficiaries to develop the sampling frame. Chapter 3 explains how the sampling frame was stratified before the sample was selected. Chapter 4 describes how the sample sizes were derived to meet the precision requirements specified for the survey estimates. In Chapter 5, we present the permanent random number sample selection procedure used to draw the sample. We also describe the creation of the sampling weights, which reflect the probability of selection, and we summarize the checking procedures designed to ensure that sampling was implemented as specified.

The appendices include tables and SAS programs that provide detailed information about the Adult quarterly survey sample selection. Appendix A lists Defense Enrollment Eligibility Reporting System (DEERS) variables provided by TRICARE Management Activity (TMA). Appendix B contains a detailed table of facilities for which beneficiaries with a military PCM were assigned a catchment area as the geographic area. Appendix C includes population, sample, and weighted sample counts tabulated for all sampling strata as part of the sample verification process. Appendix C also includes population, sample, and weighted sample counts for two analytic domains, service and enrollment and beneficiary group. Appendix D includes all variables delivered to Altarum, the data collection contractor, after the sample was selected. Appendix E contains all SAS programs used for the FY2012 quarterly survey sample design and sample selection. Appendix F includes all technical arguments and related formulas used to determine the sample sizes. Appendix G includes a chart describing the stratification scheme.

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Chapter

2

Construction of the Sampling Frame

To select a sample that represents the target population, a sampling frame that lists all members of that population must first be created. The quarterly survey sampling frame was based on a population data file provided by TMA and constructed as follows:

- An extract of the Defense Enrollment Eligibility Reporting System (DEERS) data file that includes all eligible beneficiaries on the reference date of June 30, 2011 was used to construct the sampling frame.

- The sampling frame was constructed by excluding beneficiaries under the age of 18 who are not active duty from the DEERS extract data file and constructing additional variables required for sampling purposes.

A. SPECIFICATIONS FOR THE DEERS EXTRACT FILE

The first step in building the frame was to prepare specifications that TMA could use to create the population data file. The variables were based on data from DEERS. The sampling frame is an extract of this DEERS file. The file contained data for 10 million DoD health care beneficiaries (adults and children) as of June 30, 2011, including information needed for sample selection and address and locator information for mailing the survey questionnaires. The variables in the extract file are listed in Appendix A.

Because we planned to use in-house Statistical Analysis Software (SAS) programs for sampling, we converted the extract file to a SAS data set. Starting from Quarter 4 FY2007, the constructed variable SSNSMPL, which contains confidential data[4], is no longer available. Instead, beneficiaries in the population data file are uniquely identified by the variable PTNT_ID, which is the identifier that is used to represent the person within the Department of Defense Electronic Data Interchange. We created an internal Mathematica identification variable (MPRID) by randomly and uniquely assigning values to all adult beneficiaries in the extract file. For historical purposes, we retained a crosswalk file that includes PTNT_ID, and MPRID. The crosswalk file allows us to link frame records to the DEERS database to get address information after sample selection. Appendix E includes the SAS programs we used to check the DEERS variables we requested, create the crosswalk file, and transform the data set to a SAS data set.

To safeguard the security of the DEERS extract file, we used the procedures outlined in the following sources: *The Guide to Understanding Configuration Management in Trusted Systems (Orange Book)*, DoD 5200.28, Appendix III to OMB Circular Number A-130-Security of Federal Automated Information Resources, the Computer Security Act of 1987, and the Privacy Act of 1974. We also maintained a secure data storage facility and a C2-compliant local area network,

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[4] SSNSMPL is formed by three DEERS variables: the nine-digit Social Security number (SPONSSN), the one-digit family sequence number (SPDUPID), and the two-digit DEERS dependent suffix (LEGDDSCD).

and we set up chain-of-custody procedures. The original extract was returned to TMA four weeks after we received the data.

B. DETERMINING ELIGIBLES FOR THE SAMPLING FRAME

The quarterly survey sampling frame was constructed by using the DEERS extract file described above and only retaining all active duty regardless of their age and those cases that were 18 years of age or older on the reference date (that is, June 30, 2011 for the first quarterly survey of 2012). In other words, the quarterly survey sampling frame includes individuals who meet the following characteristics:

▪   All active duty regardless of their age or 18 years of age or older on the reference date and living in the United States or abroad

▪   Eligible for military health care benefits

Beneficiaries whose ages were missing from the DEERS file were included in the quarterly survey sampling frame if not (PNTYPCD ='D' AND MBRRELCD in ('C','D','E')), that is, if the beneficiary was not a dependent child of a sponsor. Such cases represented less than 1.0 percent of the more than 10 million (adult and child) records in the sampling frame. Because they are all classified as sponsors, spouses of a sponsor, parents of a sponsor, or in-laws of a sponsor, it is safe to assume that they were 18 or older at the time of sampling.

The sample was selected from this quarterly survey sampling frame of eligible adult beneficiaries after the constructed variables were added. Constructed variables are described below.

C. CONSTRUCTING ADDITIONAL VARIABLES REQUIRED FOR SAMPLING

Because the sample design for the quarterly survey is a stratified design, variables for stratification had to be included in the sampling frame. Strata are defined by a combination of analytic group, geographic area, and enrollment and beneficiary group. (The stratification procedure is described in Chapter 3.) Some sampling variables had to be created using the information from the DEERS extract files. These variables appear below, along with the input DEERS variables used to construct them.

▪   **MPRID (nonconfidential identification number)**. This variable corresponds uniquely to PTNT_ID so that units in the frame can be linked back to information from the extract file.

▪   **GROUP (Analysis group of interest)**. This variable carries an extension of 0, 1, 2, 3, and 6 which denotes the following groups: 0 = beneficiaries enrolled in TRICARE Reserve Select; 1 = beneficiaries younger than 65 enrolled in Prime with a military PCM and all the active duty beneficiaries; 2 = beneficiaries younger than 65 enrolled in Prime with a civilian PCM; 3 = Non-enrollees younger than 65; 6= beneficiaries age 65 or older. This variable was created from DEERS variables ACV[5], PATCAT[6], PCM, and DAGEQY[7]. The definitions of the sampling variable GROUP for GROUP=2 and 3 are different from the subpopulations (2) and (3) listed on Page 1 in Chapter 1, because as we will mention later in Chapter 4, the sample frame does not indicate whether a beneficiary uses a MCSC or Standard/Extra.

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[5] ACV identifies TRICARE prime enrollment type and USFHP enrollment

[6] PATCAT is the aggregated code based on derived beneficiary category and person age years quantity

[7] DAGEQY is the age of the person in years, calculated based on person birth date and the extract date.

▪ **COM_GEO (geographic area).** For beneficiaries with a military PCM (GROUP = 1), the geographic area is either the enrollment DMIS_ID for a specific MTF.(TRICARE Management Activity (TMA) provided Mathematica a list of DMIS_ID for 113 reporting MTFs or their corresponding TNEX region. There are four TNEX regions: North, South, West, and Overseas. For the other 3 groups (GROUP = 2, 3, and 6), the geographic area is set to the TNEX region (TNEXREG). For GROUP=0, we did not stratify by geographic area.

▪ **ENBGSMPL (enrollment status and beneficiary group of a beneficiary).** This variable was defined as a combination of beneficiary and enrollment groups. This variable carries an extension of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, which denotes the following groups: 1 = active duty; 2 = active duty family members enrolled in Prime with a civilian PCM; 3 = active duty family members enrolled in Prime with a military PCM; 4 = active duty family members not enrolled in Prime; 5 = retirees and their family members younger than 65 enrolled in Prime with a civilian PCM; 6 = retirees and their family members younger than 65 enrolled in Prime with a military PCM; 7 = retirees and their family members younger than 65 not enrolled in Prime; 8 = retirees and their family members age 65 or older enrolled in Senior Prime with a civilian PCM; 9 = retirees and their family members age 65 or older enrolled in Senior Prime with a military PCM; and 10 = retirees and their family members age 65 or older not enrolled in Senior Prime; and 11 = beneficiaries enrolled in TRICARE Reserve Select. Retirees whose age was missing were classified as not enrolled in TRICARE Prime. This variable was created from DEERS variables PATCAT, PNTYPCD[8], PNLCATCD[9], PCM, DAGEQY, and ACV.

▪ **EBSMPL (enrollment status and beneficiary group of a beneficiary as one of the stratification variables).** The value of this variable is the same as the value of ENBGSMPL for GROUP = 0, 1, 2, and 3. For GROUP =6, we do not differentiate the enrollment and beneficiary group, and EBSMPL takes the value of 99.

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[8] PNTYPCD represents a specific kind of person

[9] PNLCATCD represents how the DoD personnel and/or finance center views the sponsor based on accountability and reporting strengths.

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Chapter

3

Construction of Sampling Strata

The quarterly survey sample was independently selected within strata. We stratified the quarterly survey sample into non overlapping subpopulations for three reasons:

1. We want data with known precision for certain analytic domains.

2. Response rates differ markedly for different beneficiary groups. For example, active duty beneficiaries historically respond at rate considerably lower than retirees.

3. Stratification may increase precision in the estimates of characteristics of the whole MHS population. By stratifying the population, we can create homogeneous subpopulations. If each stratum is homogeneous, a precise estimate of any stratum mean can be obtained from a small sample in that stratum. These estimates can then be combined into a precise estimate for the whole population.

We constructed the strata taking into consideration the first two of the three reasons above. Key analytic domains are constructed based on enrollment and beneficiary group characteristics. In addition, we believe that TRICARE Prime enrollment type, beneficiary group, and geographic area correlate with many of the survey variables.

Therefore, we defined the strata by a combination of analytic group, geographic area, and enrollment and beneficiary group. This chapter describes how we constructed the strata.

A. STRATIFICATION VARIABLES

The quarterly survey sampling frame included three stratification variables: (1) analytic group (GROUP), (2) geographic area (COM_GEO), and (3) enrollment and beneficiary group (EBSMPL).

1. Analytic Group

The analytic group (GROUP) defines five subpopulations within which we want survey data with known precision. These groups include beneficiaries under 65 and enrolled in Prime with a military PCM or active duty beneficiaries, beneficiaries under 65 and enrolled in Prime with a civilian PCM, beneficiaries under age 65 not enrolled in Prime, beneficiaries enrolled in TRICARE Reserve Select, beneficiaries age 65 or older. These five subpopulations were selected in cooperation with TMA staff in order to meet the needs of data users and policymakers.

2. TRICARE Prime Enrollment Status and Beneficiary Type

The enrollment status and beneficiary type stratification variable, ENBGSMPL, was developed as follows. First, enrollment status was determined by dividing the target population into four enrollment groups: (1) enrolled in TRICARE Prime with a military PCM, (2) enrolled in TRICARE Prime with a civilian PCM, (3) enrolled in TRICARE Reserve Select, and (4) not enrolled in TRICARE Prime. Enrollment status was determined using the DEERS variable for the PCM code and the Alternate Care Value (ACV). Following the definition of PCM values, all beneficiaries with

PCM = MTF (military PCM) or PCM = CIV (civilian PCM) are enrolled in Prime. All beneficiaries with PCM = blank are not enrolled in Prime. All beneficiaries with ACV = R are enrolled in TRICARE Reserve Select. We then created EBSMPL, which is equal to the value of ENBGSMPL for GROUP = 0, 1, 2, and 3. However, for GROUP =6, this variable does not differentiate the enrollment and beneficiary group, and EBSMPL takes on the value of 99

Next, beneficiaries were separated into four groups: (1) active duty, (2) active duty family members, (3) retirees and their family members younger than 65, and (4) retirees and their family members age 65 or older. We used DEERS variable PATCAT to identify each beneficiary group. All beneficiaries with PATCAT = ACTDTY are active duty; all beneficiaries with PATCAT = DEPACT are active duty family members. Those beneficiaries with PATCAT = NADD<65 are retirees and their family members younger than 65; and those beneficiaries with PATCAT = NADD65+ are retirees and their family members age 65 or older. Two beneficiaries in quarter one were missing beneficiary group assignment (PATCAT). Details are in the SAS code in Appendix E.

All active duty are in their own enrollment and beneficiary group. Active duty beneficiaries who are not enrolled in TRICARE Reserve Select are grouped together because they are regarded as being enrolled in TRICARE Prime.

3. Geographic Area

The definition of geographic area depends on the beneficiary's analytic group. For beneficiaries younger than 65 enrolled in Prime with a military PCM and all the active duty beneficiaries (GROUP = 1), the geographic area was defined as either the Military Treatment Facility (MTF) with financial responsibility for the beneficiary or their corresponding TNEX region. For all other beneficiaries (GROUP = 0, 2, 3, 6), the geographic area was defined as the TNEX region where the beneficiary lived. For enrollees with a military PCM, the value of ENRID defines their geographic area except when the Defense Medical Information System (DMIS) Identifier (ID) to which a person is enrolled to (ENRID) corresponds to an inactive facility, a facility whose purpose is only administration, or when the ENRID is assigned because a beneficiary is at sea. See Appendix B for a full list of these facilities. In these cases, we used the derived geographic catchment area variable (DCATCH).

B. COLLAPSING STRATA

Because the populations of some strata were too small, appropriate collapsing was made accordingly. Specifically, the "Overseas" TNEX region in GROUP = 6 is collapsed with the largest TNEX region within the same GROUP. In addition, we collapsed across the EBSMPL for some geographic areas.

C. STRATIFICATION RESULTS

The stratification scheme resulted in 354 strata (STRATUM), which can be uniquely specified using three variables: GROUP, GEOSMPL (collapsed version of geographic area COM_GEO), and EBSMPL (collapsed version of enrollment status and beneficiary group ENBGSMPL). The sampling frame contains these variables as well as other variables used in developing the final collapsed strata.

The final step before selecting the sample was to generate stratum-level population counts to allocate the sample to meet predetermined precision rules for various domains. The following chapter discusses sample size allocation.

Chapter

4

Sample Sizes

The total sample size for the quarterly survey was determined based on the sample size appropriate for each analytic domain. Analytic domains are usually larger than a single stratum, usually a group of sampling strata. Therefore, we specified precision requirements for these analytic domains. In addition, an optimum allocation was made to strata to reduce sampling errors of survey estimates. In this chapter, we present the procedures used for the quarterly survey sample size allocations, including the requirements, expected proportions, response rates, and how the sample sizes were finally determined.

A. PRECISION REQUIREMENTS

Stratum-level sample sizes were determined based on precision requirements, expected proportions, and expected response rates. These requirements were defined to ensure adequate precision for constructing 95 percent confidence intervals for proportion estimates. The survey estimates the proportion of beneficiaries with certain attributes for particular domains of interest. When the sample size is large enough and the proportion is near neither zero nor one, we can assume that estimated proportions will follow approximate normal distributions according to the Central Limit Theorem (Skinner, Holt, and Smith 1989, Sukasih and Jang 2005). The resulting $100(1-\alpha)$ percent confidence interval for a proportion of interest *P* is based on the standard formula:

$$(4.1) \qquad p \pm z_{1-\alpha/2} \sqrt{V(p)} = p \pm HL$$

where *p* is an estimate of *P*, $z_{1-\alpha/2}$ is the $100(1-\alpha/2)$th percentile point from the standard normal distribution with a mean of zero and a standard deviation of one, *V(p)* is the variance of the estimate, and HL is the half-length of the two-sided 95 percent confidence interval, or $HL = z_{0.975} \sqrt{V\ p}$.

For the quarterly survey, precision requirements specified that the *HL* of the 95 percent confidence interval in (4.1) for a given estimate should be less than or equal to a specified value. Because the maximum *HL* value occurs for *P* = 0.5, the precision requirements for the *HLs* were set for *P* values of 0.5, which helped to ensure that *HLs* for all estimates would be less than or equal to the specified values.

Similar to FY2011, the FY2012 sample design specifies precision for a number of important analytic domains. These precision levels vary by domain. Moreover, some precision requirements are specified as quarterly confidence intervals and others are specified as annual (combining four quarters) confidence intervals. Combining four quarters of the quarterly survey should yield MTF level estimates with precision of 6 percentage points. Moreover, combining four quarters should yield precision levels of 6 percentage points for TRICARE Reserve Select estimates. Each quarter the quarterly survey should yield MTF enrolled by TNEX region estimates with precision of 6 percentage points and beneficiaries 65 or older by TNEX region with precision of 6 percentage points.

By creating strata for beneficiaries enrolled with a civilian PCM and beneficiaries not enrolled, we plan to achieve our desired precision levels for beneficiaries who use Managed Care Support Contractors and beneficiaries who use Standard/Extra, respectively. Each quarter should yield MCSC by TNEX region estimates with precision of 6 percentage points. Combining four quarters should yield Standard/Extra users by beneficiary group by TNEX region estimates with precision of 5 percentage points.

B. EXPECTED PROPORTION

The sample frame does not indicate whether a beneficiary uses a MCSC or Standard/Extra. Therefore, after calculating the number of eligible respondents needed to achieve the precision requirements, we inflated the resulting sample sizes to account for the expected proportion of MCSC users among those enrolled with a civilian PCM and Standard/Extra users among nonenrollees younger than 65. Seventy-three percent of active duty family members enrolled in Prime with civilian PCM younger than 65 and 92 percent of retirees and their family members enrolled in Prime with civilian PCM younger than 65 are expected to be users of MCSC; 45.5 percent of nonenrolled active duty family members younger than 65 and 27.5 percent of nonenrolled retirees and their family members younger than 65 are expected to be Standard/Extra users. To calculate the sample size to account for the expected proportion, we adjusted the sample allocation by the inverse of the expected proportion.

C. RESPONSE RATES

After calculating the number of eligible respondents needed to achieve the precision requirements and the expected proportion, we inflated the resulting sample sizes to account for survey nonresponse. The unweighted response rates from Q3FY2011 were used to approximate the expected quarterly survey response rates in FY2012. Because response rates were known to vary substantially across enrollment and beneficiary groups, we projected different response rates for each group: 18 percent for active duty beneficiaries; 17 percent for active duty family members enrolled in Civilian PCM; 17 percent for active duty family members enrolled in Military PCM; 12 percent for active duty family members not enrolled in Prime; 45 percent for retirees and their family members younger than 65 enrolled in Civilian PCM; 43 percent for retirees and their family members younger than 65 enrolled in Military PCM; 39 percent for retirees and family members younger than 65 not enrolled in Prime; 69 percent for retirees and their family members age 65 or older; and 24 percent for the TRICARE Reserve Select (TRS). To calculate the final sample size, we adjusted the sample allocation by the inverse of the anticipated response rate.

D. SAMPLE SIZE COMPUTATION

In this section, we describe the key algorithms used to determine sample sizes and summarize how each precision requirement affected the total sample size. The technical presentation in Appendix F is the basis for the sample sizes we developed to meet the survey precision requirements. Appendix E includes the in-house SAS programs we used in determining sample sizes.

The first step was allocating eligible respondents to each stratum corresponding to a stratum-level precision requirement.[10] Next, we allocated the initial sample sizes needed to achieve the precision requirements for each domain created by age, enrollment type, beneficiary group, and geographic area (see Section A above for details on domain-specific precision requirements). We needed values for stratum-level population size (POPSIZE) and domain-specific population size

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[10] A stratum-level precision requirement was set to obtain initial stratum level sample sizes necessary for our in-house sample size determination program.

(DSUM1). The summation in the formula occurs over all strata within the domain *d*. Input values needed to calculate sample size for domain *d* for (F.7) and (F.8) in Appendix F were:

- N_h : POPSIZE for stratum *h*

- $N_d = \sum_{h=1}^{H} N_{dh}$: DSUM1 is the population size of domain *d* over all strata

- $V_{d,o} = B_d^2 / 3.8416$ for all geographic areas

- *B* = precision requirement for domains

The optimal domain-level sample sizes were calculated using (F.9) in Appendix F for all domains. Here, N_d, N_h, and $V_{d,0}$ are the same as defined above, and the summation in the formula occurs over all strata within domain *d*. The output is denoted by n_d . With the optimal domain-level sample sizes, n_d, stratum-level sample sizes were also optimally allocated for all strata. Input values for (F.11) in Appendix F are the same as defined for (F.9) above. The resulting sample sizes at this step are denoted as n_h^{opt} .

After finalizing strata sample sizes for eligible respondents, we incorporated the expected proportion and then the expected response rates to obtain the final sample sizes. We used the unweighted response rates from the third quarters of 2010 HCSDB response rates for beneficiary groups as the expected response rates *R; R* = 0.18, 0.17, 0.17, 0.12, 0.45, 0.3, 0.39, 0.69, and 0.24 for enrollment and beneficiary group 1 (AD), 2 (ADFM-CIV), 3 (ADFM-MTF), 4 (ADFM-NE), 5 (RET<65-CIV), 6 (RET<65-MTF), 7 (RET<65-NE), 8 (RET65+), and 9 (TRICARE- TRS), respectively. The final sample sizes were then calculated as:

$$n_{h,F} = \frac{n_h}{R_h}$$

where n_h denotes the sample size in stratum *h* and R_h denotes the expected response rate in stratum *h*. Once we attained the required precision goals, we optimally allocated the overall sample of 51,000 beneficiaries.

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Chapter

5

Selecting the Sample

The quarterly survey sampling was independently performed within the strata (see Chapter 3) based on the sample size allocation (see Chapter 4). Within each stratum, beneficiaries were sorted by a random number that was permanently assigned to a frame unit. After beneficiaries were sorted, we sampled them using a permanent random number (PRN) technique (Ohlsson 1995). This technique permanently associates a random number with each beneficiary and avoids overlap between samples for different quarterly surveys in the same year and across years.

Beneficiaries were sampled at varying rates depending on the sampling stratum. The algorithm used to draw the sample automatically selected beneficiaries to yield the predetermined stratum sample size. In this chapter we describe the PRN selection procedure, and how we checked the sample to evaluate the selection procedure. Appendix E contains the SAS program for the quarterly survey sample selection.

A. PRN SELECTION PROCEDURE

Our sample selection process was based on a stratified sample design and predetermined stratum sample sizes. The population was stratified by the cross of the three stratifying variables; small cells were collapsed as discussed in Chapter 3. Independent samples were drawn from each stratum separately.

1. Assignment of the Permanent Random Number

When we first implemented the PRN selection method for the 2001 HCSDB, each beneficiary in the sampling frame was permanently assigned a random number drawn independently from the uniform distribution on the interval (0,1). These PRNs, permanent for beneficiaries who stayed on the frame, were used for every subsequent sample selection. The frame has been updated for each quarter. Beneficiaries who became ineligible were removed from the list along with their PRNs. Beneficiaries who became eligible and were added to the frame will be assigned a unique PRN. Prior to selecting the sample for the FY2012 HCSDB, the newly eligible beneficiaries were added to the ordered list of PRNs.

2. Partitioning the Frame into the Four Zones

For the quarterly surveys in FY2012, overlap among the four quarterly samples, as well as overlap with the FY2011 HCSDB, had to be kept to a minimum. This was achieved by partitioning the sampling frame into four zones before drawing the first quarterly sample:

- Zone 1 for all beneficiaries with $0.75 \leq PRN < 1$.

- Zone 2 for all beneficiaries with $0 \leq PRN < 0.25$.

- Zone 3 for all beneficiaries with $0.25 \leq PRN < 0.5$.

- Zone 4 for all beneficiaries with $0.5 \leq PRN < 0.75$.

Zone 1 was used for the sample for the first quarterly survey. Before the selection, we checked that this zone had enough beneficiaries in each stratum to meet the sample size requirements for the survey.

Using the stratum sample size n_h for each stratum (h = 1, …, 354), we used a PRN sample selection method. Sample selection was independent and essentially identical across sampling strata. The following describes the sample selection procedure for one stratum.

Recall that each zone was stratified according to the procedures outlined in Chapter 3 and that within each stratum, the PRNs are arranged in ascending order. The starting point for Zone 1, a_h, was equal to 0.75 for quarter 1. This starting point was chosen to minimize the overlap with quarter 1 FY2011. Therefore, for stratum h, the sample consists of the first n_h beneficiaries with a random number larger than 0.75, where n_h is the predetermined stratum sample size. This procedure was repeated for every stratum. We wrote a custom program for the sample selection (Appendix E).

3.   Overlap Between the 2010 and 2011 Samples and the 2012 Sample

The PRN method provides the means to reduce overlap between year 2011 and year 2012 of the quarterly survey. By selecting varying starting points for the different quarters we minimized the potential overlap. However, the starting point is usually determined following pattern across four quarters within a year. We had an overlap of 67 cases between Q1FY2012 and Q1FY2011, and 1,021 cases between Q1 FY2012 and Q1 FY2010. However, this level of overlap is very small and, based on the research of Creel et al. (2002), we do not expect any negative effects on response due to the overlap.

B. SAMPLING WEIGHT

The last step in sample selection was to compute the base sampling weight (BWT) for each record. We constructed the sampling weight on the basis of the sample design, which used differential probabilities of selection across strata. Established precision requirements determined the sample sizes. The sampling weights, which reflect these unequal sampling rates across strata, were defined as the inverse of the beneficiary's selection probability, or $BWT_{hi} = N_h/n_h$, where BWT_{hi} is the sampling weight for the ith sampled beneficiary from the hth stratum, N_h is the total number of beneficiaries in the hth stratum, and n_h is the number of sampled beneficiaries from stratum h. The sum of the sampling weights over selections from the hth stratum equals the total population size of the hth stratum or N_h.

C. CHECKS FOR THE SELECTED SAMPLE

After drawing the sample, we evaluated the selection procedure by checking sample sizes for all strata. Appendix C contains these frequency tables:

- The number of sampled records for each stratum (STRATUM)

- The weighted count of sampled records for STRATUM, where the weight is equal to BWT_h, where h = stratum

- The number of frame records for each stratum

- The number of sampled records for each branch of service (SVCCD)

- The weighted count of sampled records for SVCCD

- The number of frame records for SVCCD

- The number of sampled records for each enrollment/beneficiary type (ENBGSMPL)

- The weighted count of sampled records for ENBGSMPL

- The number of frame records for ENBGSMPL

The sample counts after selection must be the same as the predetermined sample sizes for each stratum. Also, the weighted sample counts must be the same as the population counts for each stratum. For non-sampling variables such as SVCCD and ENBGSMPL, sample count distributions were checked against the corresponding population distributions to ensure that no operational errors occurred and that the sample appeared to be reasonably balanced. Because the sampling rates used in the selection process varied, the weighted distributions do not exactly match the population distributions.

After completing the sample checks, we attached the data elements that will be used in the survey mailing and operations to each record in the sample extract file. The file was then sent to Altarum for updating contact information. All variables in the sample extract file are specified in Appendix D.

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APPENDIX A

DEERS VARIABLES REQUESTED BY MATHEMATICA

DEERS VARIABLES

Variable	Explanation
B.1.	Age of beneficiary in years, representing the difference between the date-of-birth and the date of the reference date
B.2.	Beneficiary's date of birth
B.3.	Beneficiary's record type
B.4.	Beneficiary's race/ethnicity
B.5.	Beneficiary's sex
B.6.	Beneficiary's Medicare eligibility code
B.7.	Medicare A Begin Reason Code
B.8.	Medicare A Effective Date
B.9.	Medicare A Expiration Date
B.10.	Beneficiary's primary care manager code
B.11.	Beneficiary's alternative care value
B.12.	Beneficiary's enrolled DMIS
B.13.	Beneficiary's first name
B.14.	Beneficiary's last name
B.15.	Beneficiary's middle name
B.16.	Beneficiary's generation
B.17.	Beneficiary's residential address - line 1
B.18.	Beneficiary's residential address - line 2
B.19.	Beneficiary's residential address – city
B.20.	Beneficiary's residential address – state
B.21.	Beneficiary's residential address – country
B.22.	Beneficiary's residential address – zip
B.23.	Beneficiary's residential address – zip extension
B.24.	Beneficiary's residential address flag - 0 if no res. Address available, 1 if there is a residential address
B.25.	Beneficiary's residence phone number
B.26.	Beneficiary Category coded as one of the following groups: (1) Active duty; (2) Dependent of active duty; (3) Dependent of Medically Eligible Guard/Reserve; (4) Dependents of Retiree; (5) Dependent Survivor; (6) Medically Eligible Guard/Reserve; (7) Dependent of Inactive Guard; (8) Inactive Guard/Reserve; (9) Other; (10) Retirees; and (11) Unknown
B.27.	Beneficiary Type coded as one of these four groups: (1) Active duty; (2) Active duty dependents; (3) Retirees and their dependents less than 65; or (4) Retirees and their dependents 65 and over
B.28.	Beneficiary's Catchment area from the consolidation of (i) the list of MTFs for Prime enrollees with military Primary Care Organization; (ii) the list of catchment areas for Prime enrollees with a civilian Primary Care Organization; and (iii) the list of service areas for non- enrollees
B.29.	The code represents a geographical PRISM service area that is similar in concept to the inpatient catchment area except this is based on a 20-mile service area

Variable	Explanation
B.30.	Beneficiary's TRICARE region based on the constructed Catchment area assignment
B.31.	Beneficiary's TNEX region based on the newly defined TNEX organization
B.32.	Person/Patient ID
B.33.	Primary Record Identifier/Flag
B.34.	Beneficiary's SSN
B.35.	Beneficiary's DMDC Dependent Suffix
B.36.	Beneficiary's MTF Service Area
B.37.	Beneficiary's Medical Eligibility Status
C.1.	DEERS last update date
C.2.	CHCS mailing address line 1
C.3.	CHCS mailing address line 2
C.4.	CHCS mailing address line 3
C.5.	CHCS city
C.6.	CHCS home telephone number
C.7.	CHCS first name
C.8.	CHCS last name
C.9.	CHCS state
C.10.	CHCS last update date
C.11.	CHCS zip code
D.1.	Dependent's relationship to sponsor
S.1.	Sponsor's social security number
S.2.	Sponsor's duty status
S.3.	Sponsor duplicate identifier
S.4.	Sponsor's marital status
S.5.	Sponsor's pay grade
S.6.	Sponsor's rank abbreviation
S.7.	Branch classification of Service with which the sponsor is affiliated
S.8.	The code that represents an aggregated sponsor branch of service based on Service Branch Classification Code, General Location Code, and Derived Beneficiary Category
S.9.	Medical privileges of sponsor
S.10.	Sponsor's unit address -street 1
S.11.	Sponsor's unit address -street 2
S.12.	Sponsor's unit address – city
S.13.	Sponsor's unit address -state/with asterisks to distinguish foreign vs. domestic addresses
S.14.	Sponsor's unit address – zip
S.15.	Sponsor's unit address flag - 0 if no unit address available, 1 if there is a unit address
S.16.	Sponsor's unit—region
S.17.	Sponsor's unit address - DMIS code
S.18.	Sponsor's residential address – line 1

Variable	Explanation
S.19.	Sponsor's residential address – line 2
S.20.	Sponsor's residential address – city
S.21.	Sponsor's residential address – state
S.22.	Sponsor's residential address – country
S.23.	Sponsor's residential address – zip
S.24.	Sponsor's residential address – zip extension
S.25.	Sponsor's residential address flag - 0 if no res. address available, 1 if there is a residential address
S.26.	Sponsor's residence phone number
S.27.	Sponsor's pay category
S.28.	Sponsor's DMDC ID
S.29.	Sponsor's Reserve Component Code

APPENDIX B

Q1 2012 TABLES FOR ENROLLEES WITH A MILITARY PCM AND GEOGRAPHIC AREA EQUAL TO CATCHMENT AREA

Table B.1

Enrollees with a Military PCM and Geographic Area Equal to Catchment Area

ASSIGN	DMIS_ID	DMIS_FAC
MANAGED CARE CONTRACTOR	6901	MANAGED CARE CNTRCTR-REGION 01
	6902	MANAGED CARE CNTRCTR-REGION 02
	6903	MANAGED CARE CNTRCTR-REGION 03
	6904	MANAGED CARE CNTRCTR-REGION 04
	6905	MANAGED CARE CNTRCTR-REGION 05
	6906	MANAGED CARE CNTRCTR-REGION 06
	6907	MANAGED CARE CNTRCTR-REGION 07
	6908	MANAGED CARE CNTRCTR-REGION 08
	6909	MANAGED CARE CNTRCTR-REGION 09
	6910	MANAGED CARE CNTRCTR-REGION 10
	6911	MANAGED CARE CNTRCTR-REGION 11
	6912	MANAGED CARE CNTRCTR-REGION 12
	6913	MANAGED CARE CNTRCTR-REGION 13
	6914	MANAGED CARE CNTRCTR-REGION 14
	6915	MANAGED CARE CNTRCTR-REGION 15
	6916	MANAGED CARE CNTRCTR-REGION AK
	6917	MANAGED CARE CNTRCTR-REGION 17
	6918	MANAGED CARE CNTRCTR-REGION 18
	6919	MANAGED CARE CNTRCTR-REGION 19
	8001	88TH MED GROUP-TSC PCM
	8002	SCOTT MED CENTER TSC-PCM
	8003	NAV HOSP GREAT LAKES TSC-PCM
	8004	BLANCHFIELD ARMY HOSP TSC-PCM
	8005	IRELAND ACH-KNOX TSC-PCM
	8006	PORTSMOUTH VA-MCS-PCM
	8007	CAMP LEJEUNE-MCS-PCM
	8008	SEYMOUR JOHNSON AFB-MCS-PCM
	8009	FT BRAGG-MCS-PCM
	8010	779TH MED GRP ANDREWS TSC-PCM
	8011	87TH MED GRP MCGUIRE TSC-PCM
	8012	66TH MED GRP HANSCOM TSC-PCM
	8013	436TH MED GRP DOVER TSC-PCM

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
MANAGED CARE CONTRACTOR, CONT.	8014	WALTER REED AMC TSC-PCM
	8015	KELLER ACH TSC-PCM
	8016	GUTHRIE AHC-FT. DRUM TSC-PCM
	8017	NNMC BETHESDA TSC-PCM
	8018	NAVAMBCARECEN GROTON TSC-PCM
	8019	CHANUTE AFB(RANTOUL) TSC-PCM
	8020	FT BENJAMIN HARRISON TSC-PCM
	8021	GRISSOM AFB(PERU) TSC-PCM
	8022	KI SAWYER AFB(GWINN) TSC-PCM
	8023	WURTSMITH AFB(OSCODA) TSC-PCM
	8024	AKRON/CANTON TSC-PCM
	8025	CHICAGO/GARY TSC-PCM
	8026	CINCINNATI TSC-PCM
	8027	CLEVELAND TSC-PCM
	8028	COLUMBUS TSC-PCM
	8029	DETROIT TSC-PCM
	8030	LANGLEY AFB TSC-PCM
	8031	NH CHERRY POINT TSC-PCM
	8032	FORT LEE TSC-PCM
	8033	FORT EUSTIS TSC-PCM
	8034	MILWAUKEE TSC-PCM
	8035	ST LOUIS TSC-PCM
	8036	YOUNGSTOWN TSC-PCM
INACTIVE	0002	NOBLE AHC-FT. MCCLELLAN
	0012	97th STRAT HOSP-EAKER
	0041	BMC KEY WEST
	0044	31st MED GRP-HOMESTEAD
	0082	WALSON ACH-FT. DIX
	0111	64th MED GRP-REESE
	0213	NMCL LONG BEACH
	0235	750th MED SQUAD-ONIZUKA AS
	0250	77th MED GRP-MCCLELLAN
	0449	24th MED GRP-HOWARD
	0585	10 SPEC FORCES-FT. CARSON

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
INACTIVE, CONT.	0626	52nd MED GRP-BITBURG
	5208	USUHS
AT SEA	3031	USS JOHN F KENNEDY (CV67)
	3032	USS NIMITZ (CVN68)
	3033	USS EISENHOWER (CVN69)
	3034	USS T ROOSEVELT (CVN71)
	3035	USS ABRAHAM LINCOLN (CVN72)
	3036	USS JOHN STENNIS (CVN74)
	3037	USS MT WHITNEY (LCC20)
	3038	USS TARAWA (LHA1)
	3039	USS SAIPAN (LHA2)
	3040	USS NASSAU (LHA4)
	3041	USS PELELIU (LHA5)
	3042	USS WASP (LHD1)
	3043	USS ESSEX (LHD2)
	3044	USS KEARSARGE (LHD3)
	3045	USS BOXER (LHD4)
	3046	USS BATAAN (LHD5)
	3047	USS AUSTIN (LPD4)
	3048	USS OGDEN (LPD5)
	3049	USS DULUTH (LPD6)
	3050	USS CLEVELAND (LPD7)
	3051	USS DUBUQUE (LPD8)
	3052	USS DENVER (LPD9)
	3053	USS JUNEAU (LPD10)
	3054	USS SHREVEPORT (LPD12)
	3055	USS NASHVILLE (LPD13)
	3056	USS TREMTOM (LPD14)
	3057	USS PONCE (LPD15)
ADMINISTRATIVE PURPOSES	1976	BMC CAMP MARGUARITA
	1977	BMC CAMP LAS FLORES
	1978	BMC CAMP LAS PULGAS
	1979	BMC CAMP HORNO
	1980	BMC CAMP SAN MATEO

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6301	OP FORCES-NH CAMP PENDLETON
	6302	OP FORCES-NH LEMOORE
	6303	OP FORCES-NMC SAN DIEGO
	6304	OP FORCES-NH TWENTY-NINE PALM
	6305	OP FORCES-NBHC GROTON
	6306	OP FORCES-NH PENSACOLA
	6307	OP FORCES-NH JACKSONVILLE
	6308	OP FORCES-NH GREAT LAKES
	6309	OP FORCES-NNMC BETHESDA
	6310	OP FORCES-NMCL PAXTUXENT
	6311	OP FORCES-NH CAMP LEJEUNE
	6312	OP FORCES-NH CHERRY POINT
	6313	OP FORCES-NACC NEWPORT
	6314	OP FORCES-NH CHARLESTON
	6315	OP FORCES-NH BEAUFORT
	6316	OP FORCES-NH CORPUS CHRISTI
	6317	OP FORCES-NMC PORTSMOUTH
	6318	OP FORCES-NH BREMERTON
	6319	OP FORCES-NH OAK HARBOR
	6320	OP FORCES-NMCL PEARL HARBOR
	6321	OP FORCES-NMCL ANNAPOLIS
	6322	OP FORCES-NBHC PORTSMOUTH
	6323	OP FORCES-NMCL QUANTICO
	6501	TRICARE SRVC AREA (PORTSMOUTH)
	6502	SAN ANTONIO SRVC AREA (LACKLAN
	6503	SAN FRANCISCO SRVC AREA (TRAVI
	6504	SOUTH CA SRVC AREA (SAN DIEGO)
	6505	COLORADO SRVC AREA (CARSON)
	6506	FT STEWART/BEAUFORT SRVC AREA
	6507	NORTH CAROLINA SERVICE AREA
	6508	SOUTH CAROLINA SERVICE AREA
	6509	DELAWARE VALLEY SRVC AREA
	6510	WASHINGTON SRVC AREA
	6511	HAWAII TRICARE CATCHMENT AREA

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6512	CALIFORNIA/HAWAII ENROLLMENT
	6700	TRICARE EUROPE-SEMBACH AB
	6701	ARAXOS
	6702	MEDICAL AID STATION GLONS
	6703	MED AID STATION KLEIN BROGEL
	6704	401 EABG/SG-TUZLA AB
	6705	525 EABS/SG-YUGOSLAVIA
	6706	AMERICAN FORCES ISTRES AB
	6707	MED AID STATION BUECHEL
	6708	MED AID STATION KALKAR
	6709	12 SWS/SG (AFSPC)-THULE AB
	6710	406 EABG/SG-TASZAR AB
	6711	31 MUNSS-GHEDI AB
	6712	426 ABS/SG-STAVENGER
	6713	763 EXP AS-MUSCAT
	6714	DET 4 18 SPSS (SPACECOM)-MORON
	6715	DET 2 45TH LG AFSPC-AA AIR FLD
	6716	USDAO SCOTLAND
	6717	21SW DET AFSPC-RAF FYLINGDALES
	6718	AFSPC UNIT-OAKHANGER
	6719	USDAO KABUL
	6720	WESTERN EUROPE
	6721	EASTERN EUROPE
	6722	NORTHERN AFRICA
	6723	SOUTHERN AFRICA
	6724	CENTCOM
	6725	USDAO VIENNA
	6726	USDAO BAKU
	6727	USDAO MINSK
	6728	USDAO BRUSSELS
	6729	USDAO BENIN-PORTO-NOVO
	6730	USDAO SARAJEVO
	6731	USODC GABORONE
	6732	USDAO SOFIA

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6733	USDAO OUAGADOUGOU
	6734	AM EMB BUJUMBURA
	6735	USDAO YAOUNDE
	6736	USDAO PRAIA
	6737	AM EMB BANGUI
	6738	USDAO N'DJAMENA
	6739	USDAO BRAZZAVILLE
	6740	USDAO ABIDJAN
	6741	USDAO ZAGREB
	6742	USDAO NICOSIA
	6743	USDAO PRAGUE
	6744	USDAO KINSHASA
	6745	USDAO COPENHAGEN
	6746	USDAO DJIBOUTI
	6747	USDAO CAIRO
	6748	USDAO MALABO
	6749	USDAO ASMARA
	6750	USDAO TALLINN
	6751	USDAO ADDIS ABABA
	6752	USDAO HELSINKI
	6753	USDAO PARIS
	6754	AM EMB LIBREVILLE
	6755	AM EMB BANJUL
	6756	USDAO TBILISI
	6757	USDAO BERLIN
	6758	USDAO ACCRA
	6759	USODC ATHENS
	6760	JOINT CMND S CENTRAL-LARISSA
	6761	USDAO CONAKRY
	6762	USDAO BISSAU
	6763	USDAO VATICAN CITY
	6764	USDAO BUDAPEST
	6765	USDAO REYKJAVIK
	6766	USDAO TEHRAN

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6767	USDAO BAGHDAD
	6768	USDAO DUBLIN
	6769	USDAO TEL AVIV
	6770	USODC ROME
	6771	USDAO AMMAN
	6772	AM EMB ALMATY
	6773	USDAO NAIROBI
	6774	USDLO KUWAIT CITY
	6775	USDAO BISHKEK
	6776	USDAO RIGA
	6777	USDAO BEIRUT
	6778	USDAO MASERU
	6779	USDAO MONROVIA
	6780	USDAO TRIPOLI
	6781	USDAO VADUZ
	6782	USDAO VILNIUS
	6783	USDAO LUXEMBOURG
	6784	USDAO CAMP ABLE SENTRY-SKOPJE
	6785	USDAO LILONGWE
	6786	USDAO BAMAKO
	6787	USDAO VALETTA
	6788	USDAO NOUAKCHOTT
	6789	USDAO CHISINAU
	6790	USDAO MONTE CARLO
	6791	USDAO RABAT
	6792	USDAO MAPUTO
	6793	USDAO WINDHOEK
	6794	USDAO THE HAGUE
	6795	AF RHEINDAHLEM
	6796	US AID STATION VOLKEL
	6797	AM EMB NIAMEY
	6798	USDAO LAGOS
	6799	USDAO OSLO
	6800	USDAO MUSCAT

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6801	USDAO ISLAMABAD
	6802	USDAO WARSAW
	6803	CINCSOUTHLAND-LISBON
	6804	USDAO LISBON
	6805	USDAO DOHA
	6806	USDAO BUCHAREST
	6807	USDAO MOSCOW
	6808	USDAO KIGALI
	6809	USDAO SAN MARINO
	6810	USDAO DAKAR
	6811	USDAO PRISTINA
	6812	USDAO VICTORIA
	6813	USDAO FREETOWN
	6814	USDAO BRATISLAVA
	6815	USDAO LJUBLJANA
	6816	USDAO MOGADISHU
	6817	USDAO PRETORIA
	6818	JOINT COMMND SOUTHWEST-GRANADA
	6819	USDAO MADRID
	6820	USDAO KHARTOUM
	6821	USDAO MBABANE
	6822	USDAO STOCKHOLM
	6823	USDAO BERN
	6824	US MSN SPL LSN DET-GENEVA
	6825	USDAO DAMASCUS
	6826	USDAO DUSHANBE
	6827	USDAO DAR ES SALAAM
	6828	USDAO LOME
	6829	USDAO TUNIS
	6830	USDAO TURKMENISTAN
	6831	USDAO ABU DHABI
	6832	USDAO KAMPALA
	6833	USDAO KIEV
	6834	USDAO TASHKENT

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6835	USDAO SANAA
	6836	USDAO LUSAKA
	6837	USDAO HARARE
	6838	MARINE SEC BATT NICOSIA
	6839	USOMC-CAIRO
	6840	US NAVAL FORCES-CAIRO
	6841	NAMRU
	6842	USMC GUARD-BREMERHAVEN
	6843	USMC SEC BATTALION JERUSALEM
	6844	USMC NAIROBI
	6845	USOMC KUWAIT
	6846	USMC ROTTERDAM
	6847	USOMC MUSCAT
	6848	USMC KARACHI
	6849	USMC LAHORE
	6850	USMC PESHAWAR
	6851	USMC KRAKOW
	6852	USMC ST PETERSBURG
	6853	USMC YEKATERINBURG
	6854	USMC SEC JEDDAH
	6855	USMC CAPETOWN
	6856	MARINE SEC GRD DET-GENEVA
	6857	US SUPPORT UNIT MANAMA
	6858	FAROE ISLAND
	6859	KARUP
	6860	BASSAS DA INDIA
	6861	ILE EUROPA
	6862	ST. PIERRE & MIQUELON
	6863	US DET BONN
	6864	KIGAH
	6865	BOUVET ISLAND
	6866	SVALBARD
	6867	P3 DET CMD MASIRAH ISLAND
	6868	PRINCE SULTAN AIR BASE

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	6869	HOFUF
	6870	JUBAIL
	6871	KHAMIS
	6872	TABUK
	6873	RIYADAH
	6874	IZMIR
	6875	USMC ISTANBUL
	6876	UNITED ARAB EMIRATES
	6877	GIBRALTAR
	6878	GUERNSEY
	6879	ISLE OF MAN
	6880	JERSEY
	6881	ST. HELENA
	6991	ACTIVE DUTY ARMY
	6992	ACTIVE DUTY NAVY
	6993	ACTIVE DUTY USAF
	6994	ACTIVE DUTY NON-DOD
	7166	528th SPPT BAT (SPEC OP)-BRAGG
	7167	HQ-USASOC-FT. BRAGG
	7168	HQ-1st SFG (AIRBORNE)-LEWIS
	7169	1st SFG (1st BATTLION)-OKINAWA
	7170	1st SFG (2nd BATTALION)-LEWIS
	7171	1st SFG (3rd BATTALION)-LEWIS
	7172	HQ-3rd SFG (AIRBORNE)-BRAGG
	7173	3rd SFG (1st BATTALION)-BRAGG
	7174	3rd SFG (2nd BATTALION)-BRAGG
	7175	3rd SFG (3rd BATTALION)-BRAGG
	7176	HQ 5th SFG (AIRBORNE)-CAMPBELL
	7177	5th SFG (1st BATTALION)-CAMPBL
	7178	5th SFG (2nd BATTALION)-CAMPBL
	7179	5th SFG (3rd BATTALION)-CAMPBL
	7180	HQ 7th SFG (AIRBORNE)-BRAGG
	7181	7th SFG (1st BATTALION)-BRAGG
	7182	7th SFG (2nd BATTALION)-BRAGG

Table B.1 *(continued)*

ASSIGN	DMIS_ID	DMIS_FAC
ADMINISTRATIVE PURPOSES, CONT.	7183	7th SFG (3rd BATTALION)-BRAGG
	7184	HQ 160th SPEC OPS AV REG-CAMPB
	7185	160th SOAR (1ST BATTLN)-CAMPBL
	7186	160th SOAR (2nd BATTLN)-CAMPBL
	7187	160th SOAR (3rd BATTLN)-STEWRT
	7188	HQ 75th RANGER REG-BENNING
	7189	75th RNGR REG (1st BATTLN)-STE
	7190	75th RNGR REG (2nd BATTLN)-LEW
	7191	75th RNGR REG (3rd BATTLN)-BEN
	7192	10th SFG (1st BATTLN)-STUTTGAR
	7193	10th SFG (2nd BATTLN)-CARSON
	7194	10th SFG (3rd BATTLN)-CARSON
	7195	HQ-USA SPL OP SPPT CMD SOSCOM

APPENDIX C

Q1 2012 TABLES FOR SAMPLING CHECK

Table C-1 *(continued)*

Table C.1: Selected Sample Dataset By Zone and
Maximum Permanent Random Number Selected

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
0999911	128785	277	32159	32226	32308	32092	0.91330
1000101	1388	60	362	359	335	332	0.95405
1000103	1250	62	302	317	303	328	0.96272
1000106	5588	80	1452	1418	1308	1410	0.92651
1000301	6127	141	1548	1569	1515	1495	0.93211
1000303	2868	68	665	721	739	743	0.93608
1000306	4458	42	1105	1107	1120	1126	0.92085
1000401	3525	93	857	878	892	898	0.93906
1000403	2200	62	570	530	538	562	0.94402
1000406	5908	64	1496	1523	1446	1443	0.92114
1000501	14424	202	3723	3566	3506	3629	0.92432
1000503	3406	62	850	810	886	860	0.93199
1000506	2283	25	572	570	580	561	0.92119
1000601	7502	101	1894	1847	1896	1865	0.92505
1000603	7337	101	1797	1865	1830	1845	0.92435
1000606	8228	46	2041	2051	2119	2017	0.91700
1000801	4621	149	1183	1133	1149	1156	0.93965
1000803	2462	82	583	617	626	636	0.94242
1000806	2459	33	596	599	621	643	0.92544
1000901	5509	89	1345	1403	1412	1349	0.92478
1000903	3490	62	855	890	862	883	0.92599
1000906	10020	66	2426	2485	2537	2572	0.91891
1001001	7994	154	2009	1928	2059	1998	0.92944
1001003	3374	67	837	853	871	813	0.93258
1001006	4636	37	1183	1183	1129	1141	0.91898
1001301	7052	189	1747	1804	1731	1770	0.93622
1001303	1962	62	495	510	489	468	0.94637
1001306	2229	25	557	576	546	550	0.92237
1001401	10372	121	2601	2605	2631	2535	0.92312
1001403	4343	62	1103	1094	1075	1071	0.92719
1001406	11063	53	2775	2697	2808	2783	0.91507
1001801	2875	157	711	725	695	744	0.96035
1001803	1363	77	313	343	352	355	0.96224
1001806	1376	31	331	351	318	376	0.93676
1001901	2255	125	572	557	578	548	0.97624
1001903	1070	62	271	258	268	273	0.97261
1001906	2201	51	534	570	550	547	0.93176

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1002401	41158	201	10116	10247	10398	10397	0.91604
1002403	10696	62	2679	2579	2723	2715	0.91704
1002406	6581	25	1691	1628	1676	1586	0.91524
1002601	2257	119	504	594	556	603	0.97256
1002603	1786	96	429	427	480	450	0.97035
1002606	1806	39	426	492	455	433	0.93036
1002801	8423	182	2146	2087	2123	2067	0.93130
1002803	3161	70	774	820	790	777	0.93500
1002806	2177	25	556	534	557	530	0.92308
1002901	54268	211	13383	13762	13636	13487	0.91483
1002903	6510	62	1669	1617	1601	1623	0.91812
1002906	10941	25	2782	2648	2743	2768	0.91324
1003001	12682	195	3110	3161	3217	3194	0.92765
1003003	4041	64	1008	1024	1030	979	0.92482
1003006	2375	25	616	559	606	594	0.92212
1003201	28573	178	7093	7217	7194	7069	0.91689
1003203	11408	73	2778	2857	2917	2856	0.91789
1003206	9240	25	2340	2327	2315	2258	0.91428
1003301	7033	103	1771	1713	1812	1737	0.92579
1003303	2799	62	713	699	695	692	0.93101
1003306	10327	63	2613	2623	2552	2539	0.91639
1003801	22568	177	5598	5656	5594	5720	0.91875
1003803	7473	62	1962	1850	1815	1846	0.92059
1003806	9241	30	2266	2283	2285	2407	0.91474
1003901	21683	164	5561	5411	5271	5440	0.91840
1003903	8140	63	2027	2095	2007	2011	0.91827
1003906	11116	35	2860	2744	2713	2799	0.91514
1004201	9807	121	2412	2461	2487	2447	0.92472
1004203	4054	62	1046	1002	976	1030	0.92449
1004206	10539	54	2590	2655	2572	2722	0.91595
1004301	3206	102	837	788	774	807	0.94388
1004303	1767	62	434	478	445	410	0.93930
1004306	4647	61	1165	1206	1150	1126	0.92336
1004501	8608	102	2080	2121	2241	2166	0.92494
1004503	4284	62	1077	1083	1014	1110	0.92745
1004506	12554	61	3073	3171	3102	3208	0.91626
1004601	2332	65	607	579	558	588	0.93624
1004603	1522	62	380	362	413	367	0.95332
1004606	6859	78	1768	1684	1682	1725	0.92364

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1004701	16207	143	4075	4036	3966	4130	0.92101
1004703	5230	62	1276	1368	1255	1331	0.92375
1004706	12383	45	3114	3036	3122	3111	0.91547
1004801	23680	169	6058	5943	5897	5782	0.91713
1004803	8185	62	2058	2002	2040	2085	0.91749
1004806	11108	33	2724	2726	2913	2745	0.91458
1004901	27799	189	6986	7031	6940	6842	0.91776
1004903	9149	64	2273	2236	2339	2301	0.91742
1004906	6965	25	1717	1721	1833	1694	0.91491
1005101	5124	143	1255	1305	1274	1290	0.93974
1005103	1712	62	433	430	394	455	0.94350
1005106	3819	44	968	951	956	944	0.92296
1005201	36491	192	9058	9060	9138	9235	0.91597
1005203	12590	68	3162	3147	3091	3190	0.91675
1005206	6756	25	1745	1694	1685	1632	0.91522
1005301	3970	162	1007	1006	1004	953	0.94888
1005303	1606	67	383	425	402	396	0.95595
1005306	1961	33	466	471	491	533	0.93107
1005501	6117	117	1522	1547	1571	1477	0.92993
1005503	3620	71	914	888	913	905	0.92956
1005506	6452	51	1625	1641	1604	1582	0.91828
1005601	16394	206	4150	4044	4044	4156	0.92394
1005603	2151	62	530	533	546	542	0.93906
1005606	3895	25	977	953	991	974	0.91933
1005701	20557	188	5059	5241	5175	5082	0.91929
1005703	7923	74	2017	2019	1929	1958	0.92165
1005706	3613	25	900	925	880	908	0.91800
1005801	4660	127	1150	1121	1158	1231	0.93709
1005803	2622	73	652	640	672	658	0.94346
1005806	4048	46	1021	1029	1004	994	0.91900
1006001	36037	200	9149	8850	9040	8998	0.91650
1006003	11169	64	2829	2878	2749	2713	0.91651
1006006	5523	25	1406	1333	1404	1380	0.91486
1006101	16885	168	4327	4110	4199	4249	0.92077
1006103	5069	62	1217	1326	1295	1231	0.92284
1006106	8288	34	2133	2120	2060	1975	0.91532
1006201	6203	158	1533	1597	1515	1558	0.93791
1006203	3104	81	784	764	782	774	0.93771
1006206	2797	30	658	740	707	692	0.92174

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1006401	10328	178	2624	2546	2529	2629	0.29665
1006403	4321	77	1071	1117	1016	1117	0.92755
1006406	2507	25	672	645	580	610	0.92200
1006601	9137	135	2326	2301	2233	2277	0.92437
1006603	3005	62	757	731	754	763	0.93522
1006606	7998	49	1981	2040	2019	1958	0.91736
1006701	24753	167	6294	6128	6081	6250	0.91831
1006703	5613	62	1362	1413	1393	1445	0.92213
1006706	13262	37	3375	3357	3279	3251	0.91361
1006801	5533	151	1411	1364	1391	1367	0.93523
1006803	2458	69	559	618	628	653	0.93851
1006806	3295	37	845	812	780	858	0.92166
1006901	19008	138	4825	4711	4708	4764	0.91905
1006903	8001	62	1981	1952	2055	2013	0.91863
1006906	15287	46	3782	3869	3841	3795	0.91362
1007301	10874	150	2727	2687	2738	2722	0.92595
1007303	2821	62	677	732	728	684	0.93910
1007306	7727	44	1945	1942	1934	1906	0.91638
1007401	1675	144	389	444	428	414	0.99654
1007403	1872	165	459	454	462	497	0.93056
1007501	13321	197	3315	3305	3346	3355	0.92497
1007503	2574	62	635	655	631	653	0.93630
1007506	3208	25	787	800	801	820	0.91738
1007601	3843	146	946	1003	963	931	0.94954
1007603	1862	73	471	464	476	451	0.95174
1007606	2412	38	600	584	623	605	0.92363
1007701	3501	150	876	891	878	856	0.95110
1007703	1574	70	397	382	384	411	0.95227
1007706	2081	37	523	517	531	510	0.92838
1007801	6848	113	1709	1716	1717	1706	0.92969
1007803	3747	63	948	908	909	982	0.92621
1007806	8205	56	2071	2075	2029	2030	0.91818
1007901	11829	114	2981	3010	2920	2918	0.92146
1007903	5782	62	1478	1455	1395	1454	0.92055
1007906	14150	56	3413	3532	3584	3621	0.91555
1008301	4406	114	1126	1108	1094	1078	0.93360
1008303	1538	62	412	358	403	365	0.95040
1008306	5425	58	1362	1363	1364	1336	0.92346
1008601	10186	207	2537	2507	2592	2550	0.93058
1008603	1562	62	405	388	409	360	0.94652

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1008606	1795	25	459	412	465	459	0.92711
1008901	58749	202	14764	14635	14699	14651	0.91461
1008903	19610	69	4942	4860	4876	4932	0.91489
1008906	7311	25	1860	1860	1793	1798	0.91466
1009101	47581	225	12025	11751	11766	12039	0.91556
1009103	8662	62	2129	2232	2182	2119	0.91831
1009106	3432	25	823	891	834	884	0.92105
1009201	2544	83	620	627	661	636	0.94613
1009203	3383	113	842	843	850	848	0.94135
1009206	3493	47	882	886	863	862	0.92364
1009401	5655	182	1420	1361	1413	1461	0.94646
1009403	2284	75	604	534	589	557	0.94503
1009406	1185	25	304	283	304	294	0.93237
1009501	7149	90	1782	1786	1760	1821	0.92356
1009503	3687	62	915	900	964	908	0.92798
1009506	12874	67	3226	3255	3212	3181	0.91712
1009601	9043	158	2286	2275	2273	2209	0.93034
1009603	4002	72	1022	1008	1007	965	0.93000
1009606	4646	34	1152	1103	1155	1236	0.91984
1009801	14703	181	3740	3718	3652	3593	0.92305
1009803	5554	70	1415	1345	1444	1350	0.92447
1009806	4479	25	1153	1093	1083	1150	0.91730
1010001	11591	177	2850	2938	2955	2848	0.92644
1010003	4389	69	1075	1077	1142	1095	0.92587
1010006	4260	27	1062	1081	1087	1030	0.91683
1010101	5856	182	1426	1509	1476	1445	0.94066
1010103	1877	62	473	483	471	450	0.94166
1010106	2113	27	558	544	481	530	0.92021
1010301	8860	190	2261	2184	2197	2218	0.93084
1010303	2434	62	604	583	641	606	0.93730
1010306	2259	25	571	554	547	587	0.92259
1010401	8751	189	2141	2251	2207	2152	0.93243
1010403	2546	62	640	650	627	629	0.93399
1010406	2341	25	568	600	588	585	0.92462
1010501	11939	169	3029	2973	2929	3008	0.92807
1010503	3066	62	753	778	796	739	0.93069
1010506	5928	35	1481	1450	1503	1494	0.91607
1010801	28700	175	7277	7081	7188	7154	0.91759
1010803	12630	79	3136	3143	3164	3187	0.91799
1010806	7774	25	1915	1964	1949	1946	0.91434

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1010901	14878	110	3729	3797	3722	3630	0.91914
1010903	6312	62	1558	1551	1581	1622	0.92296
1010906	19151	59	4790	4714	4799	4848	0.91400
1011001	53535	207	13307	13515	13228	13485	0.91494
1011003	14691	62	3566	3660	3770	3695	0.91499
1011006	6882	25	1682	1701	1724	1775	0.91445
1011201	4875	185	1228	1174	1248	1225	0.94842
1011203	1110	62	262	275	285	288	0.97565
1011206	1756	28	436	443	428	449	0.92942
1011301	2367	115	554	622	570	621	0.96056
1011303	1308	65	318	317	352	321	0.96078
1011306	2667	54	695	656	639	677	0.92722
1011701	18182	139	4482	4533	4607	4560	0.91854
1011703	6822	62	1723	1725	1643	1731	0.92134
1011706	14455	46	3587	3636	3560	3672	0.91414
1011801	6261	177	1529	1565	1634	1533	0.94018
1011803	1395	62	351	357	333	354	0.96319
1011806	2725	32	702	673	682	668	0.92063
1011901	5010	127	1300	1243	1224	1243	0.93781
1011903	2717	71	684	684	659	690	0.93491
1011906	4478	47	1098	1085	1128	1167	0.92000
1012001	10563	125	2588	2706	2670	2599	0.92309
1012003	6705	81	1684	1636	1721	1664	0.92194
1012006	8861	44	2151	2196	2193	2321	0.91569
1012101	7254	125	1838	1759	1839	1818	0.92888
1012103	4501	80	1150	1095	1120	1136	0.92815
1012106	6179	44	1516	1580	1567	1516	0.91688
1012201	6513	131	1624	1625	1603	1661	0.93063
1012203	3239	67	777	811	868	783	0.93122
1012206	5592	47	1396	1404	1408	1384	0.91910
1012301	12594	80	3158	3146	3201	3089	0.91714
1012303	14020	91	3510	3478	3579	3453	0.91724
1012306	22542	59	5588	5682	5601	5671	0.91322
1012401	52838	200	13222	13213	13177	13226	0.91494
1012403	12698	62	3162	3105	3151	3280	0.91665
1012406	9253	25	2287	2289	2341	2336	0.91312
1012501	44677	176	11067	11377	11142	11091	0.91530
1012503	16287	66	4015	4053	4061	4158	0.91567
1012506	17688	29	4454	4438	4383	4413	0.91263
1012601	14784	149	3710	3767	3657	3650	0.92195

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1012603	6661	69	1674	1630	1638	1719	0.92221
1012606	9239	39	2286	2365	2332	2256	0.91609
1012701	7695	164	1945	1942	1853	1955	0.92948
1012703	3285	72	828	793	811	853	0.93428
1012706	3529	31	910	861	888	870	0.92030
1012801	3295	124	854	828	800	813	0.94975
1012803	1544	62	368	395	400	381	0.95229
1012806	3301	51	807	875	834	785	0.92499
1012901	3449	168	891	828	873	857	0.95651
1012903	1644	82	408	408	430	398	0.96252
1012906	1140	25	290	293	260	297	0.92657
1013101	5483	199	1355	1337	1396	1395	0.94604
1013103	2989	111	711	759	759	760	0.94701
1023101	6432	201	1580	1680	1575	1597	0.94094
1023103	1298	62	329	329	323	317	0.95398
1023106	1121	25	294	280	278	269	0.93109
1024801	3201	166	846	780	779	796	0.95477
1024803	2712	144	658	707	691	656	0.97245
1025201	6972	127	1770	1724	1747	1731	0.93073
1025203	4049	75	1016	994	1009	1030	0.93181
1025206	6001	45	1423	1551	1604	1423	0.91701
1028001	9663	145	2397	2457	2458	2351	0.92697
1028003	8083	125	1979	2044	2067	1993	0.92847
1028006	1747	25	470	457	414	406	0.92706
1030601	7656	197	1889	1938	1957	1872	0.93720
1030603	1298	62	306	334	325	333	0.97256
1030606	2416	26	558	591	634	633	0.92055
1031001	2982	170	734	741	761	746	0.97625
1031003	1076	63	263	273	261	279	0.96821
1031006	1307	31	336	321	331	319	0.93170
1033001	20631	222	5314	5139	5100	5078	0.92211
1033003	5413	62	1332	1337	1433	1311	0.92249
1033006	1393	25	332	350	350	361	0.93352
1036401	2630	146	653	651	658	668	0.97390
1036403	1134	65	290	270	306	268	0.96913
1036406	1749	40	451	432	443	423	0.92641
1036601	3368	64	845	795	850	878	0.93112
1036603	3134	62	838	756	769	771	0.93153
1036606	9796	76	2392	2422	2477	2505	0.91815
1037801	4523	106	1129	1150	1119	1125	0.93515

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1037803	5479	131	1331	1374	1381	1393	0.93652
1037806	3200	31	757	852	790	801	0.91863
1038501	12620	198	3147	3151	3088	3234	0.92583
1038503	2510	62	620	619	636	635	0.93487
1038506	2742	25	686	666	703	687	0.91661
1038701	4425	149	1094	1083	1141	1107	0.94509
1038703	2561	88	630	627	678	626	0.94763
1038706	2174	31	536	539	568	531	0.92405
1040501	2792	107	713	687	697	695	0.95355
1040503	3208	126	872	767	786	783	0.94740
1040506	2039	33	517	467	505	550	0.92824
1040701	4899	145	1198	1203	1255	1243	0.94286
1040703	2131	65	496	536	530	569	0.94871
1040706	3420	42	850	832	871	867	0.92299
1050801	13596	272	3390	3433	3337	3436	0.93128
1050803	1071	62	279	261	254	277	0.96152
1060601	8197	162	2004	2018	2100	2075	0.93383
1060603	4369	89	1066	1078	1102	1123	0.93018
1060606	2967	25	746	756	723	742	0.91930
1060701	17167	180	4340	4286	4275	4266	0.92031
1060703	7161	77	1766	1784	1769	1842	0.92586
1060706	3856	25	964	991	957	944	0.91689
1060901	21956	218	5499	5545	5407	5505	0.92060
1060903	9181	93	2390	2375	2219	2197	0.92122
1061201	18284	217	4618	4477	4593	4596	0.92170
1061203	3838	62	973	939	976	950	0.92662
1061206	1686	25	442	403	438	403	0.92317
1062001	3942	143	936	1019	1002	985	0.95025
1062003	1699	63	453	420	424	402	0.94694
1062006	2868	43	676	756	748	688	0.92476
1062101	15032	217	3715	3858	3684	3775	0.92498
1062103	4672	69	1212	1168	1166	1126	0.92579
1062106	917	25	209	223	228	257	0.93890
1062201	16428	238	4136	3970	4150	4172	0.92400
1062203	4862	72	1195	1237	1200	1230	0.92481
1063301	9658	180	2401	2390	2444	2423	0.93008
1063303	4228	81	1088	1036	1068	1036	0.93226
1063306	1843	25	465	455	465	458	0.92140
1080401	7922	199	2011	1875	2021	2015	0.93578

Table C-1 *(continued)*

STRATUM	FRAME SIZE	SAMPLE SIZE (Quarter 1 only)	FRAME				Maximum PRN (Zone 1 only)
			ZONE1	ZONE2	ZONE3	ZONE4	
1080403	4366	112	1094	1099	1066	1107	0.94111
1080501	4934	194	1216	1223	1263	1232	0.95459
1080503	2886	116	702	720	739	725	0.95511
1080601	9284	205	2313	2377	2287	2307	0.93438
1080603	4673	106	1158	1145	1199	1171	0.93435
1621503	1584	62	368	417	402	397	0.94899
1621506	6750	102	1696	1652	1663	1739	0.92810
1713901	7741	186	1909	2008	1910	1914	0.93792
1713903	2574	64	620	680	623	651	0.93824
1713906	2332	25	610	546	562	614	0.92276
1900101	122899	1331	30864	30789	30627	30619	0.92180
1900103	8529	95	2133	2154	2137	2105	0.92351
1900106	7537	34	1925	1881	1929	1802	0.91637
1900201	84507	1301	21166	21015	21150	21176	0.92596
1900203	6577	104	1600	1670	1634	1673	0.92496
1900206	6578	42	1614	1643	1683	1638	0.91748
1900301	114142	1196	28614	28264	28682	28582	0.92171
1900303	15302	164	3851	3847	3820	3784	0.92148
1900306	14192	62	3505	3521	3590	3576	0.91565
1900401	70761	1288	17641	17772	17653	17695	0.92961
1900403	9529	178	2419	2452	2263	2395	0.93062
1900406	1484	25	384	339	366	395	0.92692
2900102	100336	635	25023	25089	25122	25102	0.91741
2900105	247792	457	61689	61863	62213	62027	0.91294
2900202	87651	458	22036	21962	21973	21680	0.91636
2900205	333428	508	83189	83328	83437	83474	0.91273
2900302	87452	714	21758	21728	21912	22054	0.91946
2900305	182220	434	45876	45677	45449	45218	0.91344
2900405	4713	608	1180	1240	1152	1141	0.99801
3900104	80441	1715	20069	20166	20022	20184	0.93251
3900107	502781	903	126142	125603	125619	125417	0.91292
3900204	55852	1714	13912	13942	13981	14017	0.94345
3900207	383990	903	95864	95979	96288	95859	0.91358
3900304	57336	1714	14430	14234	14342	14330	0.94051
3900307	348784	903	87148	87027	87533	87076	0.91376
3900404	11813	1703	2918	2996	2963	2936	0.99632
3900407	44890	901	11136	11346	11280	11128	0.93098
6900199	606801	389	152188	151007	152201	151405	0.91179
6900299	757415	406	189579	189704	188742	189390	0.91166
6900399	612430	389	153423	153315	152881	152811	0.91178

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Table C.2: Unweighted Sample Counts, Weighted Sample Counts,
and Frame Counts by Stratum

STRATUM	Sample Size	Weight Sample	Frame Size
0999911	277	128785	128785
1000101	60	1388	1388
1000103	62	1250	1250
1000106	80	5588	5588
1000301	141	6127	6127
1000303	68	2868	2868
1000306	42	4458	4458
1000401	93	3525	3525
1000403	62	2200	2200
1000406	64	5908	5908
1000501	202	14424	14424
1000503	62	3406	3406
1000506	25	2283	2283
1000601	101	7502	7502
1000603	101	7337	7337
1000606	46	8228	8228
1000801	149	4621	4621
1000803	82	2462	2462
1000806	33	2459	2459
1000901	89	5509	5509
1000903	62	3490	3490
1000906	66	10020	10020
1001001	154	7994	7994
1001003	67	3374	3374
1001006	37	4636	4636
1001301	189	7052	7052
1001303	62	1962	1962
1001306	25	2229	2229
1001401	121	10372	10372
1001403	62	4343	4343
1001406	53	11063	11063
1001801	157	2875	2875
1001803	77	1363	1363
1001806	31	1376	1376
1001901	125	2255	2255
1001903	62	1070	1070
1001906	51	2201	2201
1002401	201	41158	41158
1002403	62	10696	10696
1002406	25	6581	6581

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1002601	119	2257	2257
1002603	96	1786	1786
1002606	39	1806	1806
1002801	182	8423	8423
1002803	70	3161	3161
1002806	25	2177	2177
1002901	211	54268	54268
1002903	62	6510	6510
1002906	25	10941	10941
1003001	195	12682	12682
1003003	64	4041	4041
1003006	25	2375	2375
1003201	178	28573	28573
1003203	73	11408	11408
1003206	25	9240	9240
1003301	103	7033	7033
1003303	62	2799	2799
1003306	63	10327	10327
1003801	177	22568	22568
1003803	62	7473	7473
1003806	30	9241	9241
1003901	164	21683	21683
1003903	63	8140	8140
1003906	35	11116	11116
1004201	121	9807	9807
1004203	62	4054	4054
1004206	54	10539	10539
1004301	102	3206	3206
1004303	62	1767	1767
1004306	61	4647	4647
1004501	102	8608	8608
1004503	62	4284	4284
1004506	61	12554	12554
1004601	65	2332	2332
1004603	62	1522	1522
1004606	78	6859	6859
1004701	143	16207	16207
1004703	62	5230	5230
1004706	45	12383	12383
1004801	169	23680	23680
1004803	62	8185	8185
1004806	33	11108	11108

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1004901	189	27799	27799
1004903	64	9149	9149
1004906	25	6965	6965
1005101	143	5124	5124
1005103	62	1712	1712
1005106	44	3819	3819
1005201	192	36491	36491
1005203	68	12590	12590
1005206	25	6756	6756
1005301	162	3970	3970
1005303	67	1606	1606
1005306	33	1961	1961
1005501	117	6117	6117
1005503	71	3620	3620
1005506	51	6452	6452
1005601	206	16394	16394
1005603	62	2151	2151
1005606	25	3895	3895
1005701	188	20557	20557
1005703	74	7923	7923
1005706	25	3613	3613
1005801	127	4660	4660
1005803	73	2622	2622
1005806	46	4048	4048
1006001	200	36037	36037
1006003	64	11169	11169
1006006	25	5523	5523
1006101	168	16885	16885
1006103	62	5069	5069
1006106	34	8288	8288
1006201	158	6203	6203
1006203	81	3104	3104
1006206	30	2797	2797
1006401	178	10328	10328
1006403	77	4321	4321
1006406	25	2507	2507
1006601	135	9137	9137
1006603	62	3005	3005
1006606	49	7998	7998
1006701	167	24753	24753
1006703	62	5613	5613
1006706	37	13262	13262

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1006801	151	5533	5533
1006803	69	2458	2458
1006806	37	3295	3295
1006901	138	19008	19008
1006903	62	8001	8001
1006906	46	15287	15287
1007301	150	10874	10874
1007303	62	2821	2821
1007306	44	7727	7727
1007401	144	1675	1675
1007403	165	1872	1872
1007501	197	13321	13321
1007503	62	2574	2574
1007506	25	3208	3208
1007601	146	3843	3843
1007603	73	1862	1862
1007606	38	2412	2412
1007701	150	3501	3501
1007703	70	1574	1574
1007706	37	2081	2081
1007801	113	6848	6848
1007803	63	3747	3747
1007806	56	8205	8205
1007901	114	11829	11829
1007903	62	5782	5782
1007906	56	14150	14150
1008301	114	4406	4406
1008303	62	1538	1538
1008306	58	5425	5425
1008601	207	10186	10186
1008603	62	1562	1562
1008606	25	1795	1795
1008901	202	58749	58749
1008903	69	19610	19610
1008906	25	7311	7311
1009101	225	47581	47581
1009103	62	8662	8662
1009106	25	3432	3432
1009201	83	2544	2544
1009203	113	3383	3383
1009206	47	3493	3493
1009401	182	5655	5655
1009403	75	2284	2284

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1009406	25	1185	1185
1009501	90	7149	7149
1009503	62	3687	3687
1009506	67	12874	12874
1009601	158	9043	9043
1009603	72	4002	4002
1009606	34	4646	4646
1009801	181	14703	14703
1009803	70	5554	5554
1009806	25	4479	4479
1010001	177	11591	11591
1010003	69	4389	4389
1010006	27	4260	4260
1010101	182	5856	5856
1010103	62	1877	1877
1010106	27	2113	2113
1010301	190	8860	8860
1010303	62	2434	2434
1010306	25	2259	2259
1010401	189	8751	8751
1010403	62	2546	2546
1010406	25	2341	2341
1010501	169	11939	11939
1010503	62	3066	3066
1010506	35	5928	5928
1010801	175	28700	28700
1010803	79	12630	12630
1010806	25	7774	7774
1010901	110	14878	14878
1010903	62	6312	6312
1010906	59	19151	19151
1011001	207	53535	53535
1011003	62	14691	14691
1011006	25	6882	6882
1011201	185	4875	4875
1011203	62	1110	1110
1011206	28	1756	1756
1011301	115	2367	2367
1011303	65	1308	1308
1011306	54	2667	2667
1011701	139	18182	18182
1011703	62	6822	6822
1011706	46	14455	14455

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1011801	177	6261	6261
1011803	62	1395	1395
1011806	32	2725	2725
1011901	127	5010	5010
1011903	71	2717	2717
1011906	47	4478	4478
1012001	125	10563	10563
1012003	81	6705	6705
1012006	44	8861	8861
1012101	125	7254	7254
1012103	80	4501	4501
1012106	44	6179	6179
1012201	131	6513	6513
1012203	67	3239	3239
1012206	47	5592	5592
1012301	80	12594	12594
1012303	91	14020	14020
1012306	59	22542	22542
1012401	200	52838	52838
1012403	62	12698	12698
1012406	25	9253	9253
1012501	176	44677	44677
1012503	66	16287	16287
1012506	29	17688	17688
1012601	149	14784	14784
1012603	69	6661	6661
1012606	39	9239	9239
1012701	164	7695	7695
1012703	72	3285	3285
1012706	31	3529	3529
1012801	124	3295	3295
1012803	62	1544	1544
1012806	51	3301	3301
1012901	168	3449	3449
1012903	82	1644	1644
1012906	25	1140	1140
1013101	199	5483	5483
1013103	111	2989	2989
1023101	201	6432	6432
1023103	62	1298	1298
1023106	25	1121	1121
1024801	166	3201	3201
1024803	144	2712	2712

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1025201	127	6972	6972
1025203	75	4049	4049
1025206	45	6001	6001
1028001	145	9663	9663
1028003	125	8083	8083
1028006	25	1747	1747
1030601	197	7656	7656
1030603	62	1298	1298
1030606	26	2416	2416
1031001	170	2982	2982
1031003	63	1076	1076
1031006	31	1307	1307
1033001	222	20631	20631
1033003	62	5413	5413
1033006	25	1393	1393
1036401	146	2630	2630
1036403	65	1134	1134
1036406	40	1749	1749
1036601	64	3368	3368
1036603	62	3134	3134
1036606	76	9796	9796
1037801	106	4523	4523
1037803	131	5479	5479
1037806	31	3200	3200
1038501	198	12620	12620
1038503	62	2510	2510
1038506	25	2742	2742
1038701	149	4425	4425
1038703	88	2561	2561
1038706	31	2174	2174
1040501	107	2792	2792
1040503	126	3208	3208
1040506	33	2039	2039
1040701	145	4899	4899
1040703	65	2131	2131
1040706	42	3420	3420
1050801	272	13596	13596
1050803	62	1071	1071
1060601	162	8197	8197
1060603	89	4369	4369
1060606	25	2967	2967
1060701	180	17167	17167
1060703	77	7161	7161

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
1060706	25	3856	3856
1060901	218	21956	21956
1060903	93	9181	9181
1061201	217	18284	18284
1061203	62	3838	3838
1061206	25	1686	1686
1062001	143	3942	3942
1062003	63	1699	1699
1062006	43	2868	2868
1062101	217	15032	15032
1062103	69	4672	4672
1062106	25	917	917
1062201	238	16428	16428
1062203	72	4862	4862
1063301	180	9658	9658
1063303	81	4228	4228
1063306	25	1843	1843
1080401	199	7922	7922
1080403	112	4366	4366
1080501	194	4934	4934
1080503	116	2886	2886
1080601	205	9284	9284
1080603	106	4673	4673
1621503	62	1584	1584
1621506	102	6750	6750
1713901	186	7741	7741
1713903	64	2574	2574
1713906	25	2332	2332
1900101	1331	122899	122899
1900103	95	8529	8529
1900106	34	7537	7537
1900201	1301	84507	84507
1900203	104	6577	6577
1900206	42	6578	6578
1900301	1196	114142	114142
1900303	164	15302	15302
1900306	62	14192	14192
1900401	1288	70761	70761
1900403	178	9529	9529
1900406	25	1484	1484
2900102	635	100336	100336
2900105	457	247792	247792
2900202	458	87651	87651

Table C-2 *(continued)*

STRATUM	Sample Size	Weight Sample	Frame Size
2900205	508	333428	333428
2900302	714	87452	87452
2900305	434	182220	182220
2900405	608	4713	4713
3900104	1715	80441	80441
3900107	903	502781	502781
3900204	1714	55852	55852
3900207	903	383990	383990
3900304	1714	57336	57336
3900307	903	348784	348784
3900404	1703	11813	11813
3900407	901	44890	44890
6900199	389	606801	606801
6900299	406	757415	757415
6900399	389	612430	612430

Table C.3: Unweighted Sample Counts, Weighted Sample Counts,
and Frame Counts for Branch of Service

SVCCD	Unweighted Sample Count	Weighted Sample Count	Frame Count
1: Foreign Army	7	1699.12	2755
2: Foreign Navy	6	1517.75	1606
3: Foreign Marine Corps	1	49.82	102
4: Foreign Air Force	11	3151.56	4581
A: Army	19462	3031874.37	3012901
C: Coast guard	1122	164486.16	159939
D: Office of the Sec Def	0	0	33
F: Air Force	15471	2135599.84	2126464
H: Public Health Service	167	18245.18	23097
M: Marine Corps	4326	579842.78	584907
N: Navy	10422	1648592.39	1667796
O: NOAA	5	402.03	1280

Table C.4: Unweighted Sample Counts, Weighted Sample Counts, and Frame Counts
for Enrollee/Beneficiary Group(ENBGSMPL)

ENBGSMPL	Unweighted Sample Count	Weighted Sample Count	Frame Count
01: active duty	22544	1786302.65	1786285
02: active duty family member, prime, civilian pcm	2309	279330.33	279479
03: active duty family member, prime, military pcm	8372	540458.47	541841
04: active duty family member, nonenrollee	6851	213852.81	208778
05: retired or family member or retiree, less than 65, civilian pcm	1505	764261.67	764259
06: retired or family member of retiree, less than 65, military pcm	4353	623789.89	623352
07: retired or family member of retiree, less than 65, military pcm	3610	1280445.00	1280445
08: retired or family member of retiree, 65 or older, civilian pcm	27	43106.61	38974
09: retired or family member of retiree, 65 or older, military pcm	80	132342.97	141080
10: retired or family member of retiree, 65 or older, nonenrollee	1072	1792785.62	1792183
11: TRICARE Reserve Select enrollee	277	128785.00	128785

Table C.5: Unweighted Sample Counts, Weighted Sample Counts, and Frame Counts
for Collapsed Enrollee/Beneficiary Group (EBSMPL)

EBSMPL	Unweighted Sample Count	Weighted Sample Count	Frame Count
01: active duty	22541	1786226	1786226
02: active duty family member, prime, civilian pcm	1807	275439	275439
03: active duty family member, prime, military pcm	8645	546865	546865
04: active duty family member, nonenrollee	6846	205442	205442
05: retired or family member of retiree, less than 65, civilian pcm	2007	768153	768153
06: retired or family member of retiree, less than 65, military pcm	4083	617460	617460
07: retired or family member of retiree, less than 65, nonenrollee	3610	1280445	1280445
11: TRICARE Reserve Select (TRS) enrollee	277	128785	128785
99: 65 and older and not active duty and not enrolled in TRS	1184	1976646	1976646

APPENDIX D

Q1 2012 VARIABLES DELIVERED TO ALTARUM

LIST OF VARIABLES IN THE DATA SET DELIVERED TO ALTARUM (FORM A - SAMPLA02.SAS7BDAT)

#	Variable	Type	Length	Label	Values	Source
1	ACV	Char	1	Alternate Care Value	A = Active Duty Prime enrollee D = TRICARE Senior Prime enrollee E = TRICARE Prime enrollee G = TRICARE Plus (CHAMPUS Eligible) L = TRICARE Plus (non-CHAMPUS Eligible) U = Enrolled to Uniformed Services Family Health Plan (formerly USTFs) Blank = Not enrolled in TRICARE Prime or USFHP	DEERS
2	C_ADDR1	Char	40	CHCS Mailing Address Line 1		CHCS
3	C_ADDR2	Char	40	CHCS Mailing Address Line 2		CHCS
4	C_ADDR3	Char	40	CHCS Mailing Address Line 3		CHCS
5	C_CITY	Char	20	CHCS City		CHCS
6	C_HMFON	Char	14	CHCS Home Telephone Number		CHCS
7	C_NAME1	Char	20	CHCS First Name		CHCS
8	C_NAME2	Char	26	CHCS Last Name		CHCS
9	C_STATE	Char	2	CHCS State		CHCS
10	C_UPDT	Char	8	CHCS Last Update Date		CHCS
11	C_ZIP	Char	5	CHCS Zip Code		CHCS
12	DAGEQY	Char	3	Beneficiary Age at time of Deers Extract	18 or older, Blank as missing	DEERS
13	DBENCAT	Char	3	Beneficiary Category	ACT = Active Duty DA = Dependent of Active Duty GRD = Guard/Reserve DGR = Dependent of Guard/Reserve RET = Retiree DR = Dependent of Retiree DS = Survivor OTH = Other Z = Unknown	DEERS
14	DCATCH	Char	4	Catchment Area at Time of Extract		DEERS

#	Variable	Type	Length	Label	Values	Source
15	DHSRGN	Char	2	Health Service Region	01 - Northeast 02 - Mid-Atlantic 03 - Southeast 04 - Gulf South 05 - Heartland 06 - Southwest 07 - Central 08 - Central 09 - Southern California 10 - Golden Gate 11 - Northwest 12 - Hawaii AK - Alaska 13 - Europe 14 - Pacific 15 - Latin America/Canada XX/ZZ - Unknown	DEERS
16	DMDCSPON	Char	10	DMDC Sponsor EDI PN		DEERS
17	DMEDELG	Char	1	Medical Privilege Code	1 - Direct Care Only 2 - Direct Care and CHAMPUS 4 - Transitional Direct Care Only 5 - Transitional Direct Care and CHAMPUS 6 - Transitional Direct Care and Medicare 7 - Direct Care and Medicare 8 - Other C - No Direct Care but CHAMPUS Eligible U - USTF Enrollee	
18	DPRISM	Char	4	PRISM (20 mile) clinic service area		DEERS
19	DSPONSVC	Char	1	Derived Sponsor Branch of Service	A = Army C = Coast Guard F = Air Force M = Marine Corps N = Navy V = Navy Afloat X = Other Z = Unknown	DEERS

#	Variable	Type	Length	Label	Values	Source
20	D_UPDT	Char	8	DEERS Last Update Date		DEERS
21	ENBGSMPL	Num	3	Beneficiary/Enrollment Group	01-Active Duty (AD) 02-AD family member, prime, civilian pcm 03-AD family member, prime, military pcm 04-AD family member, nonenrollee 05-Ret/fam. mem. retiree, <65, civilian pcm 06-Ret/fam. mem. retiree, <65, military pcm 07-Ret/fam. mem. retiree, <65, nonenrollee 08-Ret/fam. mem. retiree, >65, civilian pcm 09-Ret/fam. mem. retiree, >65, military pcm 10-Ret/fam. mem. retiree, >65, nonenrollee 11-TRICARE Reserve Select	MPR
22	ENRID	Char	4	Enrollment DMISID		DEERS
23	HADDFLG	Char	1	Residential Address - FLAG	0 = No address line1 1 = Address line1 present	DEERS
24	MACITYNM	Char	20	Residential Address - City		DEERS
25	MACTRYCD	Char	2	Residential Address, Country		DEERS
26	MALN1TX	Char	40	Residential Address - Line1		DEERS
27	MALN2TX	Char	40	Residential Address - Line2		DEERS
28	MAPRZIP	Char	5	Residential Address - ZIP		DEERS
29	MAPRZIPX	Char	4	Residential Address - ZIPX		DEERS
30	MASTCD	Char	2	Residential Address - State		DEERS
31	MBRRELCD	Char	1	Member Relationship Code	A = Self B = Spouse C = Child or stepchild D = Ward (not court ordered) E = Ward (court ordered) F = Dependent parent, stepparent, parent-in-law, or stepparent-in-law G = Surviving spouse H = Former spouse (20/20/20) I = Former spouse (20/20/15) J = Former spouse (10/20/10) K = Former spouse (transitional assistance (composite))	DEERS

#	Variable	Type	Length	Label	Values	Source
32	MEDTYPE	Char	1	Medicare Eligibility	A - Medicare A Only B - Medicare B Only C - Medicare A and B N - No Medicare eligibility	
33	MPRID	Char	8	Unique MPR Identifier		MPR
34	MRTLSTAT	Char	1	Marital Status	A = Annulled D = Divorced I = Interlocutory decree L = Legally separated M = Married N = Never married S = Single / Not married [nonstandard] W = Widow or widower Z = Unknown	DEERS
35	MSA_ID	Char	4	MTF Service Area		DEERS
36	NHFF	Num	8	NHFF - Stratum Sample Size		MPR
37	PATCAT	Char	7	Aggregated Beneficiary Category	ACTDTY = Active Duty and Guard/Reserve (no age cut). DEPACT = Dependent of Active Duty & Guard/Reserve (no age cut). NADD<65 = Retiree, Dependent of Retiree, Survivor, & Other under the age of 65. NADD65+ = Retiree, Dependent of Retiree, Survivor, & Other 65 years of age and older. UNKNOWN = Unknown (Derived Beneficiary Category equal to Z)	DEERS
38	PAYPLNCD	Char	5	Pay Plan Code		DEERS
39	PCM	Char	3	Enrolled to a Military or Civilian PCM - recoded so IF ACV = 'Z' THEN PCM = ' '; ELSE IF ('6900' < ENRID < '6999' OR '7900' < ENRID < '7999' OR '8000' < ENRID < '8099' OR '0180' <= ENRID <= '0199') THEN PCM='CIV'; ELSE PCM='MTF';	CIV = DMIS values of '8000' to '8050', or '6900' to '6916', or '7900' to '7916', or '0190' to '0199' (these last codes are USFHP enrollees). MTF = All other enrollment DMIS Codes. Blank = Not enrolled to TRICARE Prime or USFHP	DEERS

#	Variable	Type	Length	Label	Values	Source
40	PGCD	Char	2	Pay Grade	00 = Unknown 00 – ZZ (not WW) = Used when pay plan is civil service 01 = Used when pay plan is cadet 01 – 05 = Used when pay plan is warrant officer 01 – 09 = Used when pay plan is enlisted 01 – 11 = Used when pay plan is officer	DEERS
41	PN1STNM	Char	20	Beneficiary First Name		DEERS
42	PNBRTHDT	Char	8	Beneficiary Date of Birth		DEERS
43	PNCDNCY	Char	4	Beneficiary Generation		DEERS
44	PNID	Char	9	Beneficiary/Dependent SSN		DEERS
45	PNLCATCD	Char	1	Personnel Category Code (Duty Status)	A = Active duty B = Presidential Appointee C = DoD civil service D = Disabled American veteran E = DoD contractor F = Former member H = Medal of Honor I = Other Government Agency Employee J = Academy student K = Non-appropriated fund DOD employee L = Lighthouse service M = Non-government Agency Personnel N = National Guard O = Other Government Agency Contractor Q = Reserve retiree R = Retired military T = Foreign military U = Foreign national employee V = Reserve W = DOD beneficiary based on prior sponsor's eligibility	DEERS
46	PNLSTNM	Char	26	Beneficiary Last Name		DEERS

#	Variable	Type	Length	Label	Values	Source
47	PNSEXCD	Char	1	Beneficiary Sex	F = Female M = Male Z = Unknown	DEERS
48	PNTYPCD	Char	1	Beneficiary Type Code	B = Both sponsor and dependent (i.e., the person has a joint marriage spouse) D = Dependent O = Other (e.g., someone who collapses in front of a military hospital and is treated at the hospital) S = Sponsor X = Prior sponsor (e.g., a sponsor who has been archived) Y = Prior dependent (e.g., a dependent who has been archived)	DEERS
49	PRN	Num	8	Permanent Random Number		MPR
50	PRRECFLG	Char	1	Primary Record Identifier/Flag	1 = Primary Record	DEERS
51	PTNT_ID	Char	10	Unique Patient ID		DEERS
52	RACEETHN	Char	1	Sponsor's Race/Ethnicity	A = American Indian or Alaskan Native B = Asian or Pacific islander C = Black (not Hispanic) D = White (not Hispanic) E = Hispanic X = Other Z = Unknown	DEERS
53	RANKCD	Char	6	Rank Code	See RANKCD.xlsx for list of values	DEERS
54	SADDFLG	Char	1	Sponsor Address - FLAG	0 = No address line1 1 = Address line1 present	DEERS
55	SPCITYNM	Char	20	Sponsor Address - City		DEERS
56	SPCTRYCD	Char	2	Sponsor Address, Country		DEERS
57	SPDUPID	Char	1	Family Sequence Number	1 = First occurrence of an SSN 2 = Second occurrence of an SSN 3 = Third occurrence of an SSN 4 = Fourth occurrence of an SSN	DEERS
58	SPLN1TX	Char	40	Sponsor Address - Line1		DEERS
59	SPLN2TX	Char	40	Sponsor Address - Line2		DEERS

#	Variable	Type	Length	Label	Values	Source
60	SPONSSN	Char	9	Sponsor Social Security Number		DEERS
61	SPPRZIP	Char	5	Sponsor Residential Address - ZIP		DEERS
62	SPPRZIPX	Char	4	Sponsor Address - ZIPX		DEERS
63	SPSTCD	Char	2	Sponsor Residential Address - State		DEERS
64	SPTNUMCD	Char	14	Sponsor Phone Number		DEERS
65	STRATUM	Char	7	Stratum		MPR
66	SVCCD	Char	1	Branch of Service	A = Army N = Navy M = Marine Corps F = Air Force C = Coast Guard D = Office of the Secretary of Defense H = The Commissioned Corps of the PHS O = The Commissioned Corps of the NOAA 1 = Foreign Army 2 = Foreign Navy 3 = Foreign Marine Corps 4 = Foreign Air Force X = Not applicable	DEERS
67	TNEXREG	Char	1	Next Generation of Contracts Region	N = North (MHS Regions 1,2,5) S = South (MHS Regions 3,4,6) W = West (MHS Regions 7,8,9,10,11,12,AK) O = Other (MHS Regions 13,14,15,16)	DEERS
68	TNUMCD	Char	14	Residence Telephone Number		DEERS
69	UADDFLG	Char	1	Unit Address - FLAG	0 = No address line1 1 = Address line1 present	DEERS
70	UICADD1	Char	30	Unit Address - Line1		DEERS
71	UICADD2	Char	30	Unit Address - Line2		DEERS
72	UICCITY	Char	30	Unit Address - City		DEERS
73	UICST	Char	2	Unit Address - State		DEERS
74	UICZIP	Char	5	Unit Address - ZIP		DEERS
75	ULOCDMIS	Char	4	Unit Address - DMIS Code		DEERS
76	ULOCGRN	Char	2	Unit Address - Region		DEERS

APPENDIX E

**Q1 2012 SAS CODE FOR SAMPLE FRAME CONSTRUCTION
AND SAMPLE SELECTIONS**

DEERS.SAS

```
*****************************************************************************
* PROGRAM: DEERS.SAS
* TASK:    DOD Health Care Survey, Sampling (06663.200)
* PURPOSE: Convert the DEER file into SAS data files.
*          (Split DEERS raw datasets into smaller parts for CDs and
*          convert in SAS data format)
*
* WRITTEN: 10/18/2000 by KEITH RATHBUN
*
* MODIFIED: 1) 04/22/2002 by K Rathbun, removed TSPSITE from FREQs.
*           2) 10/10/2003 by D Ferragamo, added TNEXREG to FREQS.
*           3) 07/02/2004 by K Rathbun, added Primary Record Identifier/Flag
*              (PRRECFLG) and removed reference to PNARSNCD.
*           4) 01/07/2005 by R Gramss, removed codes for TNEXREG since they
*              were included in the file.
*           5) 06/29/2005 by R Gramss, changed libname to rerun for child
*              data.
*           6) 01/24/2006 by K Rathbun, for Q2 2006 recode PCM = ' ' when
*              ACV = 'Z'.
*           7) 01/14/2006 by K Rathbun, added PCM*ACV*ENRID crosstab to check
*              for potential PCM problems.
*           8) 07/12/2006 by K Rathbun, modified to split one file into four
*              parts. One big file is provided on DVD now.
*           9) 10/19/2006 by S Andrecheck, changed output names to DEERS
*              instead of old contractor name (STI)
*
* INPUTS:
* 1) Name Varies - RAW DEERS Population Extract File
*
* OUTPUTS:
* 1) DEERS001.sas7bdat - DEERS Population Extract File (Part 1)
* 2) DEERS002.sas7bdat - DEERS Population Extract File (Part 2)
* 3) DEERS003.sas7bdat - DEERS Population Extract File (Part 3)
* 4) DEERS004.sas7bdat - DEERS Population Extract File (Part 4)
*
* INCLUDES:
* 1) LAYOUT.SAS - Input step for raw data from ALTARUM
*
* NOTES:
*
* 1) As of 07/12/2006 the DEERS PITE file is provided by STI on DVD.
*    This raw file is converted into 4 SAS datasets for more
*    efficient subsequent processing.
*
* 2) Under the new contract, the suvey year was changed
*    to be based on the year the survey is administered (2002)
*    as opposed to the questioning reference frame (2001). This program
*    references folders named according to the new convention [i.e.
*    the survey administration year (2002 for Project 8860)].
*
* 3) Since Q2FY2011, DEERS file contains HCSDB population and Select Reserve
*    population.
*****************************************************************************;
OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER;

%LET QUARTER=Q1FY2012;
```

```
LIBNAME  OUT "K:\&QUARTER.";
FILENAME IN "K:\&QUARTER.\jul11a_flag.txt";  *File Ref.Date is June 30, 2011;

%let pathlayout=L:\&QUARTER.\Programs\Sampling;

PROC FORMAT;
VALUE $ADDFMT ' '  = 'missing'
              OTHER = 'nonmissing';
VALUE $IDFMT ' ', '.'  = 'Missing'
         '0190'-'0199'  = '[0190,0199]: USFHP,d_fac=T'
         '6900'<-'6919' = '(6900,6919]: Managed Care Contractor, d_fac=TSCPCM'
         '7900'<-'7919' = '(7900,7919]: Tricare remote prime, d_fac=TPR'
         '8000'<-<'8090'= '(8000,8090)'
         Other          = 'Other nonmissing';
RUN;

DATA OUT.DEERS001 OUT.DEERS002 OUT.DEERS003 OUT.DEERS004;
   INFILE IN LRECL=99999 RECFM=V MISSOVER;
   %INCLUDE "&pathlayout.\LAYOUT.SAS";

*****************************************************************************
* Begining in Q3 2005 the variable PCM had different values than in previous
* data. Reformat PCM values to values we had before so the data is consistent
* with previous DEERS extracts.
*****************************************************************************;
   IF ACV in ( 'Z','R' ) THEN PCM = ' ';
         ELSE IF ('6900' < ENRID <= '6919' OR
                  '7900' < ENRID <= '7919' OR
                  '8000' < ENRID <  '8090' OR
                  '0190' <= ENRID <= '0199' OR
      ACV IN ('B','F'))
      THEN PCM='CIV';
      ELSE PCM='MTF';

   IF      _N_ LE 2500000 THEN OUTPUT OUT.DEERS001;
   ELSE IF _N_ LE 5000000 THEN OUTPUT OUT.DEERS002;
   ELSE IF _N_ LE 7500000 THEN OUTPUT OUT.DEERS003;
   ELSE OUTPUT OUT.DEERS004;
RUN;

*****************************************************************************
* PRINTIT - MACRO PARAMETERS:
* 1) PNUM = SAS output file suffix
*****************************************************************************;
%MACRO PRINTIT(PNUM=);

TITLE1 "DOD Health Care Survey, Sampling (06663.200)";
TITLE2 "PROGRAM: DEERS.SAS (&QUARTER.)";
TITLE3 "PURPOSE: Convert the DEER File into SAS Data Files";
TITLE4 "PROC CONTENTS: DEERS&PNUM.sas7bdat";
PROC CONTENTS DATA=OUT.DEERS&PNUM; RUN;

TITLE4 "PROC FREQ: DEERS&PNUM.sas7bdat";
PROC FREQ DATA=OUT.DEERS&PNUM;
   FORMAT ENRID $IDFMT.;
   TABLES
      PCM*ACV*ENRID
```

```
        TNEXREG
        PRRECFLG
        PNTYPCD
        MRTLSTAT
        PNSEXCD
        MDCABRSN
        PNLCATCD
        SVCCD
        PAYPLNCD
        PGCD
        MBRRELCD
        RANKCD
        ULOCGRN
        ULOCDMIS
        RACEETHN
        DCATCH
        DMEDELG
        DAGEQY
        DBENCAT
        DPRISM
        DHSRGN
        DSPONSVC
        MEDTYPE
        ENRID
        ACV
        PCM
        PATCAT
        MSA_ID
        RSVCC
        DELGIND
        DELGIND*RSVCC
     /MISSING LIST;
RUN;

PROC FREQ DATA=OUT.DEERS&PNUM;
    TABLES C_ADDR1  C_ADDR2  C_ADDR3  C_CITY  C_STATE C_ZIP
        MALN1TX MALN2TX MACITYNM MASTCD MACTRYCD MAPRZIP MAPRZIPX
        UICADD1 UICADD2 UICCITY UICST UICZIP
        SPLN1TX SPLN2TX SPCITYNM SPSTCD SPCTRYCD SPPRZIP SPPRZIPX
       /MISSING LIST;

    FORMAT C_ADDR1  C_ADDR2  C_ADDR3  C_CITY  C_STATE C_ZIP
        MALN1TX MALN2TX MACITYNM MASTCD MACTRYCD MAPRZIP MAPRZIPX
        UICADD1 UICADD2 UICCITY UICST UICZIP
        SPLN1TX SPLN2TX SPCITYNM SPSTCD SPCTRYCD SPPRZIP SPPRZIPX $ADDFMT.;
RUN;
%MEND PRINTIT;
*************************************************************************
* END PRINTIT MACRO
*************************************************************************;
%PRINTIT(PNUM=001);
%PRINTIT(PNUM=002);
%PRINTIT(PNUM=003);
%PRINTIT(PNUM=004);


*------------------------------END-------------------------------;
```

LAYOUT.SAS

```
*****************************************************************************
* PROGRAM:  LAYOUT.SAS
* TASK:     DOD Health Care Survey, Sampling (06663.200)
* PURPOSE:  INPUT step for the DEERS Extract file from contractor
*
* WRITTEN:  10/18/2000 by KEITH RATHBUN
*
* MODIFIED: 1) 04/22/2002 by K Rathbun, removed TSPSITE from layout.
*           2) 10/10/2003 by D Ferragamo, added TNEXREG to layout.
*           3) 04/09/2004 by K Rathbun, added PTNT_ID to layout.
*           4) 06/29/2004 by K Rathbun, removed PNARSNCD, PNMIDNM, SPTNUMCD,
*              and TNUMCD from layout since they are no longer available on
*              the STI-provided DEERS extract. Added Primary Record
*              Identifier/Flag (PRRECFLG) to layout.
*           5) 01/07/2005 by R Gramss, added back TNUMCD & SPTNUMCD in layout
*              and labels.
*           6) 01/29/2007 by S Andrecheck, added variable DMDCSPON
*           7) 04/26/2007 by H Xu, changed LEGDDSCD to filler3 and ssnsmpl
*              is not created, since LEGDDSCD is not no longer provided.
*           8) 08/01/2007 by H Xu, added CHCS addresses variables
*           9) Q3FY2010 MSA_ID added to variable list
*           10)Q2FY2011 RSVCC (Reserve Component Category Code),
*              DELGIND (MHS eligibility indicator) were added to the variable
*              list
*
* NOTE:     We change Reference Date for DAGEQY Each Qtr
*****************************************************************************
*****************************************************************************
* Input RAW data (ignore delimiters!)
*****************************************************************************;
INPUT
   @1      SPONSSN    $CHAR9.
   @11     SPDUPID    $CHAR1.
   @13     PNTYPCD    $CHAR1.
   @15     PNID       $CHAR9.
   @25     PNBRTHDT   $CHAR8.
   @34     MRTLSTAT   $CHAR1.
   @36     PNSEXCD    $CHAR1.
   @38     FILLER1    $CHAR2. /* KRR - DELETED PNARSNCD 06/29/2004 */
   @41     MDCABRSN   $CHAR1.
   @43     MDCAEFDT   $CHAR8.
   @52     MDCAEXDT   $CHAR8.
   @61     FILLER3    $CHAR2. /*HX - DELETED LEGDDSCD 04/26/2007*/
   @64     PNLCATCD   $CHAR1.
   @66     SVCCD      $CHAR1.
   @68     PAYPLNCD   $CHAR5.
   @74     PGCD       $CHAR2.
   @77     MBRRELCD   $CHAR1.
   @79     MALN1TX    $CHAR40.
   @120    MALN2TX    $CHAR40.
   @161    MACITYNM   $CHAR20.
   @182    MASTCD     $CHAR2.
   @185    MACTRYCD   $CHAR2.
   @188    MAPRZIP    $CHAR5.
   @194    MAPRZIPX   $CHAR4.
   @199    HADDFLG    $CHAR1.
   @201    TNUMCD     $CHAR14. /* RSG - ADDED BACK IN TNUMCD 01/07/2005 */
```

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```
@216     PNLSTNM    $CHAR26.
@243     PN1STNM    $CHAR20.
@264     FILLER2    $CHAR20. /* KRR - DELETED PNMIDNM 06/29/2004 */
@285     PNCDNCY    $CHAR4.
@290     RANKCD     $CHAR6.
@297     ULOCGRN    $CHAR2.
@300     ULOCDMIS   $CHAR4.
@305     RACEETHN   $CHAR1.
@307     DCATCH     $CHAR4.
@312     DMEDELG    $CHAR1.
@314     DAGEQY     $CHAR3.
@318     DBENCAT    $CHAR3.
@322     DPRISM     $CHAR4.
@327     DHSRGN     $CHAR2.
@330     DSPONSVC   $CHAR1.
@332     MEDTYPE    $CHAR1.
@334     UICADD1    $CHAR30.
@365     UICADD2    $CHAR30.
@396     UICCITY    $CHAR30.
@427     UICST      $CHAR2.
@430     UICZIP     $CHAR5.
@436     UADDFLG    $CHAR1.
@438     SPLN1TX    $CHAR40.
@479     SPLN2TX    $CHAR40.
@520     SPCITYNM   $CHAR20.
@541     SPSTCD     $CHAR2.
@544     SPCTRYCD   $CHAR2.
@547     SPPRZIP    $CHAR5.
@553     SPPRZIPX   $CHAR4.
@558     SADDFLG    $CHAR1.
@560     SPTNUMCD   $CHAR14. /* RSG - ADDED BACK IN SPTNUMCD 01/07/2005 */
@575     ENRID      $CHAR4.
@580     ACV        $CHAR1.
@582     PCM        $CHAR3.
@586     PATCAT     $CHAR7.
@594     TNEXREG    $CHAR1.
@596     PTNT_ID    $CHAR10.
@607     PRRECFLG   $CHAR1.  /* KRR - ADDED PRRECFLG 06/30/2004 */
@609     DMDCSPON   $CHAR10. /* HXu - The following 11 variables added on
                                      08/01/2007 */
@620     D_UPDT     $CHAR8.
@629     C_ADDR1    $CHAR40.
@670     C_ADDR2    $CHAR40.
@711     C_ADDR3    $CHAR40.
@752     C_CITY     $CHAR20.
@773     C_HMFON    $CHAR14.
@788     C_NAME1    $CHAR20.
@809     C_NAME2    $CHAR26.
@836     C_STATE    $CHAR2.
@839     C_UPDT     $CHAR8.
@848     C_ZIP      $CHAR5.
@854     MSA_ID     $CHAR4.  /*Added by HXu on 1/21/2010 for Q3FY2010*/
@859     RSVCC      $CHAR2.  /*Added by HXu on 10/22/2010 for q2fy2011*/
@862     DELGIND    $CHAR1.  /*Added by HXu on 10/22/2010 for q2fy2011*/
;
DROP FILLER1-FILLER3;
```

```
**************************************************************************
* LABEL variables
**************************************************************************;
LABEL
     SPONSSN   =   "Sponsor SSN"
     SPDUPID   =   "Family Sequence Number"
     PNTYPCD   =   "Person Type Code"
     PNID      =   "Person SSN"
     PNBRTHDT  =   "Person Birth Date"
     MRTLSTAT  =   "Marital Status"
     PNSEXCD   =   "Person Gender"
     MDCABRSN  =   "Medicare A Begin Reason Code"
     MDCAEFDT  =   "Medicare A Effective Date"
     MDCAEXDT  =   "Medicare A Expiration Date"
     PNLCATCD  =   "Personnel Category Code (Duty Status)"
     SVCCD     =   "Branch of Service"
     PAYPLNCD  =   "Pay Plan Code"
     PGCD      =   "Pay Grade"
     MBRRELCD  =   "Member Relationship Code"
     MALN1TX   =   "Residential Address, Line 1"
     MALN2TX   =   "Residential Address, Line 2"
     MACITYNM  =   "Residential Address, City"
     MASTCD    =   "Residential Address, State"
     MACTRYCD  =   "Residential Address, Country"
     MAPRZIP   =   "Residential Address, ZIP Code"
     MAPRZIPX  =   "Residential Address, ZIP Code Extension"
     HADDFLG   =   "Residential Address Flag"
     TNUMCD    =   "Residence Telephone Number"
     PNLSTNM   =   "Person Last Name"
     PN1STNM   =   "Person First Name"
     PNCDNCY   =   "Person Generation (Cadency)"
     RANKCD    =   "Rank Code"
     ULOCGRN   =   "Unit Region"
     ULOCDMIS  =   "Unit DMISID"
     RACEETHN  =   "Race/Ethnic Code"
     DCATCH    =   "Catchment Area"
     DMEDELG   =   "Medical Privlege Code"
     DAGEQY    =   "Age (As of June 30, 2011)"  /*Q1FY2012: The file Ref Date*/
     DBENCAT   =   "Beneficiary Category"
     DPRISM    =   "PRISM (20 mile) clinic service area"
     DHSRGN    =   "Health Service Region"
     DSPONSVC  =   "Derived Sponsor Branch of Service"
     MEDTYPE   =   "Medicare Type"
     UICADD1   =   "Unit Address, Line 1"
     UICADD2   =   "Unit Address, Line 2"
     UICCITY   =   "Unit Address, City"
     UICST     =   "Unit Address, State"
     UICZIP    =   "Unit Address, ZIP Code"
     UADDFLG   =   "Unit Address Flag"
     SPLN1TX   =   "Sponsor Address, Line 1"
     SPLN2TX   =   "Sponsor Address, Line 2"
     SPCITYNM  =   "Sponsor Address, City"
     SPSTCD    =   "Sponsor Address, State"
     SPCTRYCD  =   "Sponsor Address, Country"
     SPPRZIP   =   "Sponsor Address, ZIP Code"
     SPPRZIPX  =   "Sponsor Address, ZIP Code Extension"
     SADDFLG   =   "Sponsor Address Flag"
```

```
    SPTNUMCD =    "Sponsor Telephone Number"
    ENRID    =    "Enrollment DMISID"
    ACV      =    "Alternate Care Value"
    PCM      =    "Primary Manager Code (CIV or MIL)"
    PATCAT   =    "Aggregated Beneficiary Category"
    TNEXREG  =    "Beneficiary's TNEX Region"
    PTNT_ID  =    "unique Patient ID"
    PRRECFLG =    "Primary Record Identifier/Flag"
    DMDCSPON =    "DMDC Sponsor EDI PN"
    D_UPDT   =    "DEERS LAST UPDATE DATE"
    C_ADDR1  =    "CHCS MAILING ADDRESS LINE 1"
    C_ADDR2  =    "CHCS MAILING ADDRESS LINE 2"
    C_ADDR3  =    "CHCS MAILING ADDRESS LINE 3"
    C_CITY   =    "CHCS CITY"
    C_HMFON  =    "CHCS HOME TELEPHONE NUMBER"
    C_NAME1  =    "CHCS FIRST NAME"
    C_NAME2  =    "CHCS LAST NAME"
    C_STATE  =    "CHCS STATE"
    C_UPDT   =    "CHCS LAST UPDATE DATE"
    C_ZIP    =    "CHCS ZIP CODE"
    MSA_ID   =    "MTF Service Area"
    RSVCC    =    "Reserve Component Category Code" /*added in Q2FY2011 H.Xu*/
    DELGIND  =    "MHS eligibility indicator"        /*added in Q2FY2011 H.Xu*/
  ;
```

RECODER.SAS

```
****************************************************************************
* PROGRAM:  RECODER.SAS
* TASK:     DOD Health Care Survey, Sampling (06663.200)
* PURPOSE:  Randomly/Proportionally Assign Missing Region
* WRITTEN:  S Andrecheck
* INPUT  :  DEERS001-DEERS004
* OUTPUT :  DEERS001-DEERS004
* NOTE:     Background of the Recorder SAS (an old email) in:
*           L:\Q1FY2010\Programs\Sampling\INFO_FOR_RECORDER_SAS
****************************************************************************;

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

%LET QUARTER=Q1FY2012;


LIBNAME IN   "K:\&QUARTER.";
LIBNAME OUT  "K:\&QUARTER.";

TITLE1 "DOD Health Care Survey, Sampling (06663.200)     ";
TITLE2 "PROGRAM: RECODER.SAS (&QUARTER.)                  ";
TITLE3 "Randomly/Proportionally Assign Missing Region     ";
TITLE4 "OUTPUT: DEERS001-DEERS004                         ";
TITLE5 "----------------------------------------------";

PROC FORMAT;
   VALUE $FDAGEQY ' ' = ' '
                  '000'-'017' = '<18'
                  '018' - HIGH = '18 and older';
   VALUE $FRSVCC 'FX','MA','S9','SA','SB','SC','SD','SG','SM','ST',
                 'TA','TB','TC','TD','TR','TW',
                 'UA','UF','UL','UP','UQ','US','UT','UU','UX' = "Checked SR
values"
                 ' ' = ' '
                 Other = "Other";
RUN;

DATA deers;
   SET IN.deers001 IN.deers002 IN.deers003 IN.deers004;
Run;

DATA deers;
SET deers;
TNEXREG_OLD=TNEXREG;

/*Re-assigning TNEXREG*/
    IF DHSRGN = '16' and MASTCD IN ('CA','OR','WA','ID','MT','CO','ND','SD'
    'MN','IA','MO','NE','KS','WY','AZ','NM','UT','NV','HI','AK') then
    TNEXREG='W';
    ELSE IF DHSRGN='16' and MASTCD IN ('TX','OK','AR','LA','TN','AL','MS',
    'GA','SC','FL') then TNEXREG='S';
    ELSE IF DHSRGN='16' and MASTCD IN ('WI','IL','MI','IN','KY','OH','WV',
    'PA','VA','NC','DC','MD','DE','NJ','NY','CT','RI','MA','VT','NH','ME')
    then TNEXREG='N';
    ELSE IF DHSRGN='16' and MASTCD NOT IN ('99','XX','US',' ') THEN
    TNEXREG='O';
    ELSE IF DHSRGN='16' and MACTRYCD NOT IN (' ','US','XX) then TNEXREG='O';
    ELSE IF DHSRGN='16' then TNEXREG=' ';        *go for random assignment;
```

E-13

```
/*moves those in western Texas to West region*/
    ZIP_TEMP=MAPRZIP;
    if ZIP_TEMP>'79770' AND MASTCD='TX' and DHSRGN='16' then TNEXREG='W';

/*Random number to be used in Random Assignment*/
    randomnum=uniform(4353623);

/*Creating grp_temp for Rendom Assignment*/
    if ACV='R' then grp_temp=0;
    else if DELGIND = '0' then grp_temp=6;/*Changed for q2fy2011 by H.Xu*/
    else if PATCAT='ACTDTY' or (dageqy<65 and PCM='MTF') then grp_temp=1;
    else if dageqy<65 and pcm='CIV' then grp_temp=2;
    else if dageqy<65 and pcm=' ' then grp_temp=3;
    else if dageqy>=65 and ACV in ('L', 'G') then grp_temp=4;
    else grp_temp=5;
run;

TITLE6 "Check the construction of grp_temp";
PROC FREQ DATA=DEERS;
    TABLES GRP_TEMP*ACV*DELGIND*PATCAT*DAGEQY*PCM/MISSING LIST;
    FORMAT DAGEQY $FDAGEQY.;
RUN;

Title6 " Proc Freq of DEERS Data (where DHSRGN='16')";
Title7 "       (before the Random Assignment)        ";
Proc Freq data=deers;
    tables TNEXREG*TNEXREG_OLD*MASTCD*DHSRGN/LIST MISSING;
    tables TNEXREG*TNEXREG_OLD*DHSRGN*ACV*PCM/LIST MISSING;
     where DHSRGN='16';
RUN;

/*Check Texas Recode */
Title4 "Checks Texas Recode (where, MASTCD=TX and DHSRGN=16):";
proc freq data=deers;
table ZIP_TEMP*TNEXREG_OLD*TNEXREG/list missing;
where MASTCD='TX' and DHSRGN='16';
run;

%macro docount;
%do group = 0 %to 6;
Title4 "Freq of TNEXREG where grp_temp=&group. and tnexreg~=' '";
proc freq data=deers;
table tnexreg/ out=counts&group.;
where grp_temp=&group. and tnexreg~=' ';
run;

proc transpose data=counts&group. out=counts&group.;
id tnexreg;
run;

data counts&group.;
set counts&group.;
if _name_='COUNT' then delete;
grp_temp=&group.;
north=N/100;
oconus=(N+O)/100;
```

```
south=(N+O+S)/100;
run;
%end;
%mend docount;
%docount;

data counts (keep=grp_temp north oconus south);
set counts0 counts1 counts2 counts3 counts4 counts5 counts6;
run;

Title4 "Proc Print of Data=Counts";
proc print data=counts;
run;

data deers1;
set deers;
where tnexreg=' ';
run;

data deers2;
set deers;
where tnexreg~=' ';
run;

proc sort data=deers1;
by grp_temp;
where tnexreg=' ';
run;

proc sort data=counts;
by grp_temp;
run;

/*Random Assignment of TNEXREG*/
data deers1;
merge deers1 (in=A) counts (in=B);
by grp_temp;
if A and B;
if randomnum<north then tnexreg='N';
else if randomnum<oconus then tnexreg='O';
else if randomnum<south then tnexreg='S';
else tnexreg='W';
run;

title4 "Proc Freq of those Records where,TNEXREG were Missing";
proc freq data=deers1;
table mastcd*mactrycd*tnexreg /list missing;
run;

data deers;
set deers1 deers2;
run;

proc sort data=deers;
by ptnt_id;
run;
```

```
data OUT.DEERS001 OUT.DEERS002 OUT.DEERS003 OUT.DEERS004;
set deers;
    IF      _N_ LE 2500000 THEN OUTPUT OUT.DEERS001;
    ELSE IF _N_ LE 5000000 THEN OUTPUT OUT.DEERS002;
    ELSE IF _N_ LE 7500000 THEN OUTPUT OUT.DEERS003;
    ELSE OUTPUT OUT.DEERS004;
run;

title4 'FREQ of FINAL DEERS 001-004';
title5 "    where DHSRGN = '16'    ";
proc freq data=deers;
table mastcd*mactrycd*tnexreg/list missing;
where dhsrgn='16';
run;

/*Check Overall Recode */
title4 'Cross Freq of OLD and NEW TNEXREG:';
proc freq data=deers;
table tnexreg_old * tnexreg /list missing;
run;
```

XWALK.SAS

```
****************************************************************************
* PROGRAM:  XWALK.SAS
* TASK:     DOD Health Care Survey, Adult Sampling (06663.200)
* PURPOSE:  Build SAS Extract/Cross-walk file for the DOD sample
*           and assign permanent random numbers (PRN).
* WRITTEN:  01/17/2001 by K Rathbun
*
* MODIFIED:
* 1)  02/08/2001 by K Rathbun for Q3, added specific family exclusion
*     criteria as include file.
* 2)  06/29/2004 by K Rathbun for q4 2004, added PTNT_ID to XWALK file.
* 3)  07/13/2005 by R Gramss for Q4 2005, point to use STI files (1-4)
*     from Q3 that was used for Child resampling.
* 4)  07/19/2005 by R Gramss for Q4 2005, exclude ptnt_id that are in death
*     file (received from STI 7/19/2005).
* 5)  10/14/2005 by K Rathbun for Q1 2006, removed code relating to death
*     file provided in previous quarter.
* 6)  11/09/2005 by R Gramss for Q1 2006 - needed to add in KATRINA hit areas
*     that were left out of the original frame file sent in Oct 2005. KATRINA
*     file was created in LAYOUT_KATRINA.SAS, producing STI005.SD2 file.
* 7)  10/18/2006 by S Andrecheck for Q2 2007, changed input files to DEERS
*     instead of old contractor name (STI).
* 8)  05/04/2007 by H Xu for Q4FY2007, since legddscd is no longer available,
*     we will use PTNT_ID alone as merging ID in xwalk. Q3 xwalk will be
*     deduped by ptnt_id, and eligibility indicators E1-E26 will be
*     consolidated.
* 9)  07/23/2007 for q1fy2008, put all active duty in the adult sample
*     regardless of their age.
* 10) 12/06/2007 by K Rathbun for Collateral Access Analysis project.
*     Added survey to keep track of which new records are added for which
*     survey.
* 11) 10/27/2009 by H. Xu for Q2FY2010 Adult sampling, removed outputting
*     permanent dataset containing the random number seed (seed.sas7bdat).
*     From now on the period no.(PD macro variable) will be used to seed the
*     random no. generator. This will prevent different results from being
*     generated if the program is accidentally rerun and it will also make it
*     easier to replicate results if output files are lost/corrupted.
* 12) 11/16/2009 by K Rathbun, added EXCLUDE_FtHood.SAS.
* 13) The following changes made for Q2FY2011 on 10/21/2010 by H.Xu:
*     a)Removed EXCLUDE_FtHood.SAS
*     b)Changed the value of SURVEY from HCSDB to HCSDB/SR
*     c)Xwalk.sas7bdat file now includes eligible adult beneficiaries as
*       usual plus the eligible select reserve
*     d)ESR&PD. is created to indicate the TRS study population
*     e)All Adults with checked values of RSVCC are eligible Select Reserve,
*       but The TRS study population just includes Select Reserve not in the
*       HCSDB population (DELGIND =0) plus those enrolled in TRS (ACV=R).
* 14) On 1/21/2011, add a part to populate delgind, rsvcc, acv for PID_NEW
*     for q2fy2011 xwalk.
* 15) Removed 33) for q4fy2011 and so on.
*
* INPUTS:
* 1) DEERS001.sas7bdat - DEERS Population SAS data set (Part 1)
* 2) DEERS002.sas7bdat - DEERS Population SAS data set (Part 2)
* 3) DEERS003.sas7bdat - DEERS Population SAS data set (Part 3)
* 4) DEERS004.sas7bdat - DEERS Population SAS data set (Part 4)
* 5) XWALK.sas7bdat    - Previous DEERS Population XWALK SAS data set
```

```
*
* OUTPUTS:
* 1) XWALK.sas7bdat - Current DEERS Population XWALK SAS data set
*
* INCLUDES:
* 1) EXCLUDE.SAS - Exclude specific family by SPONSSN and PTNT_ID.
**********************************************************************;
OPTIONS PS=79 LS=132 COMPRESS=YES NOCENTER OBS=MAX;

%LET QUARTER=Q1FY2012;

LIBNAME  IN1  "K:\Q4FY2011";   * Previous XWALK for Q1FY2012;
LIBNAME  IN2  "K:\&QUARTER.";  * Current Contractor DEERS Files;
LIBNAME  OUT  "K:\&QUARTER.";  * Current Output;

%INCLUDE "L:\&QUARTER.\Programs\Sampling\F2RSVCC.INC";

TITLE1 "DOD Health Care Survey, Sampling (06663.200)";
TITLE2 "Program Name: XWALK.SAS (&QUARTER.)";
TITLE3 "Generate XWALK from DOD DEERS Pop/Assign PRN, MPRID to Newly Added";

**********************************************************************
* Set period number as global variable.
**********************************************************************;
%LET PD = 44; *  Q1FY2012 <Increase by 1 every quarter> ;

**********************************************************************
* Set survey as global variable.
* Change to HCSDB or CollateralAccess.
**********************************************************************;
*Starting from Q2fy2011, changed from HCSDB to HCSDB/SR (SR stands for Select
Reserve);
%LET SURVEY = HCSDB/SR;

**********************************************************************
* Formats
**********************************************************************;
PROC FORMAT;
  VALUE $FDAGEQY ' '  = ' '
               '000'-'017' = '<18'
               '018' - HIGH = '18 and older';
  VALUE $FRSVCC 'FX','MA','S9','SA','SB','SC','SD','SG','SM','ST',
               'TA','TB','TC','TD','TR','TW',
               'UA','UF','UL','UP','UQ','US','UT','UU','UX' = "Checked SR
values"
               ' '=' '
               Other="Other";
RUN;
**********************************************************************
* Assign LASTID from previous XWALK file as global variable. This will later
* be used as the starting point for assigning new MPRIDs.
**********************************************************************;
DATA _NULL_;
   SET IN1.XWALK END=FINISHED;
   LENGTH MPRIDX 8; RETAIN MPRIDX;
   IF MPRID > MPRIDX THEN MPRIDX = MPRID;
   IF FINISHED THEN CALL SYMPUT("LASTID",MPRIDX);
```

```
RUN;


**************************************************************************
* Get PTNT_ID from current quarter file.
**************************************************************************;
%MACRO SORTIT(NUM=);
  PROC SORT DATA=IN2.DEERS&NUM
    (KEEP=SPONSSN RSVCC DELGIND ACV PNTYPCD PATCAT DBENCAT MBRRELCD DAGEQY
PNBRTHDT PTNT_ID)
  OUT=DEERS&NUM;
    BY PTNT_ID;
  RUN;
%MEND SORTIT;

%SORTIT(NUM=001);
%SORTIT(NUM=002);
%SORTIT(NUM=003);
%SORTIT(NUM=004);


****************************************************************************
* Since Q2FY2011, DEERS file contains HCSDB and Select Reserve population
* Include all the active duty regardless of age for HCSDB Adult Population
* Remove children (<18) prior to assigning permanent random number (PRN).
**************************************************************************;
DATA PID_Q;
   SET DEERS001
       DEERS002
       DEERS003
       DEERS004
     ;
   BY PTNT_ID;
RUN;
TITLE4 "Check the variables before excluding anything";
PROC FREQ DATA=PID_Q;
   TABLES DELGIND*PATCAT*DAGEQY*PNTYPCD*MBRRELCD*RSVCC*ACV/MISSING LIST;
         FORMAT DAGEQY $FDAGEQY. RSVCC $FRSVCC.;
RUN;

DATA PID_Q;
   SET PID_Q;
   IF (DELGIND = '1' AND PATCAT = 'ACTDTY') OR
      (DAGEQY GE "018" OR (DAGEQY = " " AND NOT (PNTYPCD ='D' AND MBRRELCD in
       ('C','D','E')))));
   ********************************************************************
   * Update EXCLUDE.SAS if contractor failed to remove all duplicates.
   * Exclude specific families from survey.
   ********************************************************************;
   %INCLUDE "L:\&QUARTER.\Programs\Sampling\EXCLUDE.SAS";
RUN;

TITLE4 "Check the criteria after excluding the duplicates and non-eligible
cases";
PROC FREQ DATA=PID_Q;
   TABLES DELGIND*PATCAT*DAGEQY*PNTYPCD*MBRRELCD/MISSING LIST;
   FORMAT DAGEQY $FDAGEQY.;
RUN;
```

```
PROC SORT DATA=IN1.XWALK OUT=XWALK; BY PTNT_ID;RUN;

**************************************************************************
* Combine Qn PTNT_ID with previous XWALK, keeping only the
* new eligibles (PID_NEW).
**************************************************************************;
DATA PID_NEW OLDXWALK;
   MERGE XWALK(IN=IN2) PID_Q(IN=IN1 KEEP=PTNT_ID ACV DELGIND RSVCC);
   BY PTNT_ID;

   **********************************************************************
   * Assign eligibility indicator for new eligibles.
   **********************************************************************;
   /*The part below was changed by H.Xu for q2fy2011 to take ESR&PD. into
     account*/
   LENGTH E&PD $1 ESR&PD. $1;

   FLAG_NEWDEERS=0;
   FLAG_OLDXWALK=0;
   IF IN1 THEN FLAG_NEWDEERS=1;
   IF IN2 THEN FLAG_OLDXWALK=1;

   IF IN1 THEN DO;
      IF DELGIND = '1' THEN DO;
         E&PD = "Y";
         ESR&PD. = "N";
         IF ACV = "R" THEN ESR&PD. = "Y";
      END;
      ELSE IF DELGIND = '0' THEN DO;
         E&PD. = "N";
         ESR&PD. ="Y";
      END;
   END;
   ELSE IF IN2 THEN DO;
      E&PD = "N";
      ESR&PD. = "N";
   END;

   LENGTH SURVEY $25; * KRR Added SURVEY 12/06/2007;
   IF IN1 AND NOT IN2 THEN DO;
      SURVEY = "&SURVEY";
      OUTPUT PID_NEW;
   END;

   IF IN2 THEN OUTPUT OLDXWALK;
RUN;

title4 "PID_NEW";
PROC FREQ DATA=PID_NEW;
   TABLES FLAG_NEWDEERS*FLAG_OLDXWALK*DELGIND*E&PD.*ESR&PD.*ACV
SURVEY/MISSING LIST;
RUN;
title4 "OLDXWALK";
PROC FREQ DATA=OLDXWALK;
   TABLES FLAG_NEWDEERS*FLAG_OLDXWALK*DELGIND*E&PD.*ESR&PD.*ACV
SURVEY/MISSING LIST;
RUN;
```

```
************************************************************************
* Assign PRN for all new eligibles.
************************************************************************;
DATA NEWXWALK (KEEP=MPRID PRN PTNT_ID E&PD ESR&PD. SURVEY DELGIND RSVCC ACV);
   SET PID_NEW;
   LENGTH MPRID  $8;
   ************************************************************************
   * Assign PRN for new eligibles.
   * 10/27/2009: Using PD as the seed for generating PRN;
   ************************************************************************;
   PRN = RANUNI(&PD.);
   LABEL PRN = "Permanent Random Number";
   ************************************************************************
   * Assign MPRID starting with previous XWALKs LASTID+1.
   ************************************************************************;
   IF _N_ = 1 THEN MPRIDX = %EVAL(&LASTID+1);
   ELSE MPRIDX + 1; RETAIN MPRIDX;
   MPRID  = PUT(MPRIDX,Z8.);
RUN;

%MACRO XWALK;
DATA OUT.XWALK;
   SET NEWXWALK OLDXWALK(DROP=FLAG_NEWDEERS FLAG_OLDXWALK);
   BY PTNT_ID;
   ************************************************************************
   * Recode missing values to Not eligible.
   ************************************************************************;
   %DO I = 1 %TO &PD;
        IF E&I = " " THEN E&I = "N";
        IF ESR&I = " " THEN ESR&I = "N";
        LABEL E&I = "Eligibility indicator for period = &I"
              ESR&I. = "TRS Study Population indicator for period = &I";
   %END;
RUN;
%MEND XWALK;
%XWALK;

TITLE3 "Proc Contetns of XWALK.sas7bdat";
PROC CONTENTS; RUN;

Title3 "Proc freq of Xwalk data";
PROC FREQ; *PD=E44, Q1FY2012;
   TABLES SURVEY
          E1-E&PD
          ESR&PD.
          E&PD.*ESR&PD.
          E37*E38*E39*E40*E41*E42*E43*E&PD.*ESR&PD.
   /MISSING LIST;
RUN;
```

DUPCHECK.SAS

```
****************************************************************************
* PROGRAM:  DUPCHECK.SAS
* TASK:     DOD Health Care Survey, Sampling (06663.200)
* PURPOSE:  Check cross-walk for duplicate permanent random numbers (PRN).
*
* WRITTEN:  01/19/2001 by K Rathbun
*
* MODIFIED: 1) 04/10/2002 by K Rathbun, added duplicate checking and
*              notes for Child Population XWALK checking.
*           2) 01/29/2008 by K Rathbun, removed printing of duplicates.
*
* INPUTS:
* 1) XWALK.sas7bdat  - DEERS Adult Population XWALK SAS data set
* 2) XWALKC.sas7bdat - DEERS Child Population XWALK SAS data set
*
* OUTPUTS: None
*
* NOTES:
* 1) Since the XWALK.SAS program is run each quarter to append new eligibles
*    to the previous quarters XWALK.sas7bdat, this program needs to be run
*    to be sure that duplicate PRNs have not been created.  It is highly
*    unlikely that the XWALK.SAS program will generate duplicate PRNs;
*    however, we must be sure that there are in fact no duplicates.
* 2) Since the XWALKC.SAS program is run each year to append new eligibles
*    to the previous years XWALKC.sas7bdat, this program needs to be run
*    to be sure that duplicate PRNs have not been created.  It is highly
*    unlikely that the XWALKC.SAS program will generate duplicate PRNs;
*    however, we must be sure that there are in fact no duplicates.
*
****************************************************************************;


%LET QUARTER=Q1FY2012;

LIBNAME  IN "K:\&QUARTER.";

OPTIONS PS=79 LS=132 COMPRESS=NO NOCENTER;

TITLE1 "Check cross-walk file for duplicate permanent random numbers (PRN).";
TITLE2 "Program Name: DUPCHECK.SAS (&QUARTER.)";


****************************************************************************
* Check for duplicate PRNs.  If duplicates are found, then the XWALK.SAS
* and/or XWALKC.SAS programs will need to be rerun until this program
* detects no duplicates.
****************************************************************************;
PROC SORT DATA=IN.XWALK  OUT=DUPCHECK NODUPKEY; BY PRN; RUN;
/* PROC SORT DATA=IN.XWALKC OUT=DUPCHECK NODUPKEY; BY PRN; RUN; */
```

EXTRACT.SAS

```
******************************************************************************
* PROGRAM:  EXTRACT.SAS
* TASK:     DOD Health Care Survey, Sampling (06663.200)
* PURPOSE:  Build SAS extract file for the DOD sample
*
* WRITTEN:  10/19/2000 by K Rathbun
*
* MODIFIED:
* 1)  01/18/2001 by K Rathbun for Q2 removed sorting of XWALK and EXTRACT
*     files by MPRID.
* 2)  02/08/2001 by K Rathbun for Q3 added specific family exclusion
*     criteria as include file.
* 3)  04/23/2002 by K Rathbun for Q3 200, removed TSPSITE.
* 4)  01/14/2003 by K Rathbun for Q2 2003 added address flags (SADDFLG,
*     HADDFLG, UADDFLG) and zip code (MAPRZIP) to the extract file.
* 5)  10/10/2003 by D Ferragamo for Q1 2004 added TNEXREG.
* 6)  06/29/2004 by K Rathbun for Q4 2004 added PTNT_ID, PRRECFLG, PNBRTHDT,
*     PN1STNM, PNLSTNM, and PNID to extract file. Removed PNARSNCD from
*     extract file since it is no longer being provided by STI.
* 7)  01/13/2005 by R Gramss add codes to construct PATCAT values for
*     inactive guard DBENCAT values. This should be removed for next quarter
*     since STI will take care of it for Q3 2005.
* 8)  01/19/2005 by R Gramss added codes to replace ENRID and ACV field with
*     new values sent by STI.  This was done to remedy several thousand
*     missing values found in ENRID. This code should only be done this
*     quarter and should not have to be run in Q3.
* 9)  07/12/2005 by R Gramss used STI files from Q3 2005 Child resampling.
* 10) 07/21/2005 by R Gramss saved original PCM value as PCM_OLD, then
*     reassign PCM according to ACV and ENRID.
* 11) 10/17/2005 by R Gramss changed Civilian ENRID codes according to DEERS
*     DICTIONARY.
* 12) 11/09/2005 by R Gramss added in Katrina supplement file and also
*     create flag to indicate which records were from the supplement file.
*     This should only be done for this quarter. Additionally, use original
*     frame file with extension "A" in the name – these are files where the
*     duplicates/overlap records (records in both original frame and Katrina
*     files) were eliminated. Again, this should only be done for this
*     quarter.
* 13) 01/23/2006 by K Rathbun for Q2 2006 removed Katrina-related code and
*     PCM recode. PCM was corrected by STI for Q2 2006.
* 14) 10/18/2006 by S Andrecheck for Q2 2007 changed input files to DEERS
*     instead of old contractor name (STI).
* 15) 05/07/2007 by H Xu for Q4FY2007 used PTNT_ID as merging ID and output
*     extract file to the restircited folder.
* 16) 07/23/2007 for q1fy2008 put all active duty in the adult sample
*     regardless of their age.
* 17) 12/06/2007 by K Rathbun for Collateral Analysis task: added DPRISM and
*     MAPRZIPX variables to the extract.
* 18) 12/10/2007 by K Rathbun for Q3FY2008 moved IFs for PTNT_ID deletions
*     into the EXCLUDE.SAS program.
* 19) The following changes made for q2fy2011 on 10/21/2010 by H.Xu:
*     a)Removed EXCLUDE_FtHood.SAS
*     b)EXTRACT.sas7bdat file now includes eligible adult beneficiaries as
*       usual plus the eligible select reserve
*
* INPUTS:
* 1) DEERS001.sas7bdat - DEERS Population SAS data set (Part 1)
```

```
* 2) DEERS002.sas7bdat - DEERS Population SAS data set (Part 2)
* 3) DEERS003.sas7bdat - DEERS Population SAS data set (Part 3)
* 4) DEERS004.sas7bdat - DEERS Population SAS data set (Part 4)
* 5) XWALK.sas7bdat  - DEERS Population XWALK SAS data set (sorted by
*    PTNT_ID)
*
* OUTPUTS:
* 1) EXTRACT.sas7bdat - DEERS Population EXTRACT SAS data set (complete –
*    sorted by PTNT_ID)
*
* INCLUDES:
* 1) EXCLUDE.SAS - Exclude specific family by SPONSSN and PTNT_ID.
***************************************************************************;


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


%LET QUARTER=Q1FY2012;


LIBNAME  IN  "K:\&QUARTER."; /*DEERS001-DEERS004, xwalk*/
LIBNAME  OUT "K:\&QUARTER."; /*EXTRACT*/


TITLE1 "Build SAS EXTRACT file for the DOD sample";
TITLE2 "Program Name: EXTRACT.SAS (&QUARTER.)";


%LET PD = 44; * <Increase by 1 every quarter> 44 FOR Q1FY2012;


PROC FORMAT;
   VALUE $FDAGEQY ' '  = ' '
                 '000'-'017' = '<18'
                 '018' - HIGH = '18 and older';
   VALUE $FRSVCC 'FX','MA','S9','SA','SB','SC','SD','SG','SM','ST',
                 'TA','TB','TC','TD','TR','TW',
                 'UA','UF','UL','UP','UQ','US','UT','UU','UX' = "Checked SR
values"
                 ' '=' '
                 Other="Other";
RUN;


*Include format for RSVCC;
%INCLUDE "L:\&QUARTER.\Programs\Sampling\F2RSVCC.INC";
****************************************************************************
* Extract key sampling variables.
***************************************************************************;
%MACRO SORTIT(NUM=);
   PROC SORT DATA=IN.DEERS&NUM
             (KEEP=SPONSSN  PNTYPCD  MRTLSTAT  PNSEXCD
                   MDCABRSN MDCAEFDT MDCAEXDT  DPRISM
                   PNLCATCD SVCCD    PAYPLNCD
                   PGCD     MBRRELCD RANKCD    ULOCGRN
                   ULOCDMIS RACEETHN DCATCH    DMEDELG
                   DAGEQY   DBENCAT  DPRISM    DHSRGN
                   DSPONSVC MEDTYPE  ENRID     ACV
                   PCM      PATCAT   SADDFLG   HADDFLG
                   UADDFLG  MAPRZIP  MAPRZIPX  TNEXREG
                   PTNT_ID  PNBRTHDT PN1STNM   PNLSTNM
                   PNID     PRRECFLG MSA_ID    D_UPDT
                   C_UPDT
```

```
                      DELGIND  RSVCC)
                  OUT=DEERS&NUM;
         BY PTNT_ID;
    RUN;
%MEND SORTIT;


%SORTIT(NUM=001);
%SORTIT(NUM=002);
%SORTIT(NUM=003);
%SORTIT(NUM=004);


*****************************************************************************
* Remove children (<18) and exclude specific families.
*****************************************************************************;
DATA EXTRACT;
    SET DEERS001
        DEERS002
        DEERS003
        DEERS004;
    BY PTNT_ID;

    IF (DELGIND = '1' AND PATCAT = 'ACTDTY') OR
       (DAGEQY GE "018" OR (DAGEQY = " " AND NOT (PNTYPCD ='D' AND MBRRELCD in
       ('C','D','E'))))
    ;
    *************************************************************************
    * Add code to EXCLUDE.SAS if contractor failed to remove all duplicates.
    *************************************************************************;
    %INCLUDE "L:\&QUARTER.\Programs\Sampling\EXCLUDE.SAS";
RUN;

DATA OUT.EXTRACT;
    MERGE IN.XWALK(IN=IN1) EXTRACT(IN=IN2);
    BY PTNT_ID;
    IF IN1 AND IN2;
    FORMAT RSVCC $F2RSVCC.;
RUN;

TITLE1 "Build SAS EXTRACT file for the DOD sample";
TITLE2 "Program Name: EXTRACT.SAS (&QUARTER.)";
TITLE3 "CONTENTS of Extract file";
PROC CONTENTS DATA=OUT.EXTRACT;
RUN;

TITLE3 " Proc Freq of Key Variables in Data=EXTRACT.sas7bdat";
PROC FREQ DATA=OUT.EXTRACT;
    TABLES
        E1-E&PD. ESR&PD. E&PD.*ESR&PD.
        E37*E38*E39*E40*E41*E42*E43*E&PD.*ESR&PD. /*E44 for Q1FY2012*/
        TNEXREG
        PRRECFLG
        PNTYPCD
        MRTLSTAT
        PNSEXCD
        MDCABRSN
        PNLCATCD
        SVCCD
```

```
        PAYPLNCD
        PGCD
        MBRRELCD
        RANKCD
        ULOCGRN
        ULOCDMIS
        RACEETHN
        DCATCH
        DMEDELG
        DAGEQY
        DBENCAT
        DPRISM
        DHSRGN
        DSPONSVC
        MEDTYPE
        ENRID
        ACV
        PCM
        PATCAT
        SADDFLG
        HADDFLG
        UADDFLG
        DPRISM
        PCM*ACV*ENRID
        MSA_ID
        RSVCC
        DELGIND
    /MISSING LIST;
RUN;

Title3 " Cross tab of (DELGIND*RSVCC*ACV)";
PROC FREQ;
    TABLES DELGIND*RSVCC*ACV/MISSING LIST;
    FORMAT RSVCC $FRSVCC.;
RUN;
```

FRAMEA_PRELIM.SAS

```
*****************************************************************************
*** Program: framea_prelim.sas
*** Project: Health Care Survey of DoD Beneficiaries - Adult (06663.200)
*** Purpose: Create the Preliminary Sampling Frame for the Adult Survey.
***
*** Inputs:  extract.sas7bdat: Extracted DoD data set used to create the
***                            adult sampling frame.
***          tma.sas7bdat:     DMIS information
***          frame.inc:        Include file
***
*** Outputs: framea_Prelim.sas7bdat: Preliminary adult sampling frame created
***                                  from the extracted DoD data set.
***
*** Written: H Xu on 08/15/2006
***
*** Note:   1)The stratification changed in Q1FY2007.
***         2)LISTDMIS: Need to check if there is any updated file available
***                     (Current ListDmis file using from Q3FY2009)
***         3)TMA.sas7bdat: We Download the latest excel from website for TMA
***         4)Starting from Q2FY2011, extract.sas7bdat includes both Adult
***           HCSDB Beneficiaries and TRS study population so make sure to
***           only include HCSDB Adult Beneficiaries when reading
***           extract.sas7bdat
***         5)In Q2FY2012 listdmis.sas7bdat will need to be updated due to
***           Walter Reed Medical Center closing.
*****************************************************************************;

options ls=132 ps=79 compress=yes nocenter;* mprint mlogic symbolgen;

%LET QUARTER=Q1FY2012;

libname in1   "K:\&QUARTER.";                *Extract.sas7bdat;
libname in2   "L:\&QUARTER.\Data\Afinal"; *TMA.sas7bdat, Listdmis.sas7bdat
                                            (update listdmis in Q2FY2012);
                                          *Download latest TMA spreadsheet;
libname out   "L:\&QUARTER.\Data\Afinal"; *Framea_prelim.sas7bdat;

%let folder=L:\&QUARTER.\Programs\Sampling;

TITLE1 "DOD Health Care Survey, Sampling (06663.200)";
title2 "Program: FRAMEA_PRELIM.SAS (&QUARTER.)";
title3 "Purpose: Construct the Preliminary Adult Sampling Frame";

proc format;
value $FMTage ' '='Missing'
              '001'-'064' ='<65'
              '065'-high  ='>=65'
              other='other';
value FMTprn  0    - 0.25 = '[0,0.25]'
              0.25 <- 0.50 = '(0.25-0.50]'
              0.50 <- 0.75 = '(0.50-0.75]'
              0.75 <- 1    = '(0.75-1.00]';
run;

*_____
Check some variables in the Extract file
_____;
```

```
data frame;
   set in1.extract(keep=mprid prn DELGIND enrid dcatch pcm patcat dageqy acv
                        pntypcd MBRRELCD pnlcatcd pnsexcd svccd TNEXREG
PRRECFLG);
   /*This condition is added by H. Xu starting from Q2fy2011 to include only
HCSDB population*/
   if DELGIND='1';
run;

title4 "Freq of the variables in the frame";
proc freq data=frame;
   tables PRRECFLG PATCAT DAGEQY DAGEQY*PNTYPCD*MBRRELCD
          patcat*pcm patcat*pcm*acv patcat*dageqy
          pcm*patcat*dageqy*acv/missing list;
   format dageqy $FMTage.;
run;

*_____
Assign com_geo
_____;

data TMA (keep = geocell d_par d_fac d_instal d_health d_dmis servaff);
   set in2.TMA;
   rename facility_type_code=d_fac installation_name=d_instal
dmis_facility_name=d_dmis facility_service_code=servaff ;
   length d_par $4.;
   d_par = DMIS_PARENT_ID;
   length geocell $4.;
   geocell = DMIS_ID;
   length d_health $2.;
   d_health = HEALTH_SERVICE_REGION;
run;

title4 "Freq of servaff, d_fac in TMA Spreadsheet";
proc freq data=TMA;
tables servaff d_fac/missing list;
run;

proc sort nodupkey data=TMA;
   by geocell;
run;

%include "&folder.\frame.inc";  *Include file;

*_____
Create the reporting MTFs
_____;

*listdmis is from Eric. It contains the reporting MTFs;
title4 "Contents of Listdmis.sas7bdat";
proc contents data=in2.listdmis; run;

title4 "Freq of Dmis (Listdmis.sas7bdat)";
proc freq data=in2.listdmis;
tables dmis/missing list;
run;
```

```
data listdmis;
set in2.listdmis(keep=dmis);
com_geo=put(dmis, z4.);
run;

title4 "Freq of com_geo*dmis (Data=Listdmis)";
proc freq data=listdmis;
table com_geo*dmis/missing list;
run;

proc sort data=listdmis; by com_geo; run;
proc sort data=t_frame;  by com_geo; run;

data merged both only1 only2 problem;
merge t_frame(in=A) listdmis(in=B);
by com_geo;
R_MTF=0;
if A and B then R_MTF=1;       *Reporting MTF;
if A then output merged;
if A and B then output both;
else if A and not B then output only1;
else if B and not A then output only2;
else output problem;
run;

title4 "Dmis/Com_gep in 'Reporting MTF' list (Listdmis), but not in 'Frame'";
proc print data=only2;
var com_geo;
run;

title4 "List of Reporting MTFs (in Preliminary Adult Sampling Frame):";
title5 " (where R_MTF=1)";
proc freq data=merged;
tables com_geo/missing list;
where R_MTF=1;
run;

title4 "Checks R_MTF ";
title5 " (If, in both 't_frame' and 'listdmis' then R_MTF=1)";
proc freq data=merged;
tables R_MTF/missing list;
run;

*_____
Create enbgsmpl
_____;

data merged;
set merged;
select (patcat);
   when ('ACTDTY') enbgsmpl='01';
   when ('DEPACT') do;
       select (pcm);
         when ('CIV') enbgsmpl='02';
         when ('MTF') enbgsmpl='03';
         when (' ')   enbgsmpl='04';
         otherwise enbgsmpl='c';
```

```
      end;
end;
when ('NADD<65') do;
   select (pcm);
      when ('CIV') enbgsmpl='05';
      when ('MTF') enbgsmpl='06';
      when (' ')   enbgsmpl='07';
      otherwise enbgsmpl='d';
   end;
end;
when ('NADD65+') do;
   select (pcm);
      when ('CIV') enbgsmpl='08';
      when ('MTF') enbgsmpl='09';
      when (' ')   enbgsmpl='10';
      otherwise enbgsmpl='e';
   end;
end;
when ('UNKNOWN') do;
   if pntypcd='S' then do;
      if pnlcatcd in ('A','J','N','V') then enbgsmpl='01';
      else if dageqy = ' ' then enbgsmpl='f';
      else if dageqy <= '064' then do;
            select (pcm);
               when ('CIV') enbgsmpl='05';
               when ('MTF') enbgsmpl='06';
               when (' ')   enbgsmpl='07';
               otherwise    enbgsmpl='g';
            end;
       end;
        else if dageqy > '064' then do;
            select (pcm);
               when ('CIV') enbgsmpl='08';
               when ('MTF') enbgsmpl='09';
               when (' ')   enbgsmpl='10';
               otherwise    enbgsmpl='h';
            end;
        end;
   end;
    else if pntypcd='D' then do;
       if pnlcatcd in ('A','J','N','V') then do;
          select (pcm);
             when ('CIV') enbgsmpl='02';
             when ('MTF') enbgsmpl='03';
             when (' ')   enbgsmpl='04';
             otherwise    enbgsmpl='i';
          end;
       end;
       else if dageqy = ' ' then enbgsmpl='j';
       else if dageqy <= '064' then do;
             select (pcm);
                when ('CIV') enbgsmpl='05';
                when ('MTF') enbgsmpl='06';
                when (' ')   enbgsmpl='07';
                otherwise    enbgsmpl='k';
             end;
      end;
```

```
            else if dageqy > '064' then do;
                 select (pcm);
                    when ('CIV') enbgsmpl='08';
                    when ('MTF') enbgsmpl='09';
                    when (' ')   enbgsmpl='10';
                    otherwise    enbgsmpl='l';
                 end;
            end;
      end;
       else enbgsmpl='m';
   end;
   otherwise enbgsmpl='n';
end;

if acv ='R' then enbgsmpl='11';
run;

title4 "Checks the ENBGSMPL Construction:";
title5 "Proc Freq of Enbgsmpl:";
proc freq data=merged;
tables enbgsmpl/missing list;
run;

title4 "Checks the ENBGSMPL Construction:";
proc freq data=merged;
tables patcat enbgsmpl*patcat*pcm*acv /missing list;
run;

title4 "Checks the ENBGSMPL Construction:";
title5 " (where, PATCAT=UNKNOWN)";
proc freq data=merged;
tables enbgsmpl*patcat*pntypcd*pnlcatcd*dageqy*PCM/missing list;
where PATCAT='UNKNOWN';
run;

*_____
Create Stratum
_____;
data merged;
set merged;
length group $1 stratum $7;

if acv='R' or NOT ( (PATCAT='ACTDTY' or (dageqy<'065' and PCM='MTF')) and
R_MTF=1 ) then do;
   if TNEXREG='N' then com_geo='9001';
   else if TNEXREG='S' then com_geo='9002';
   else if TNEXREG='W' then com_geo='9003';
   else if TNEXREG='O' then com_geo='9004';
end;

if acv ='R' then do; /*TRICRAE Reserve Select*/
   group='0';
   stratum=group||com_geo||enbgsmpl;
end;
else if PATCAT='ACTDTY' or (dageqy<'065' and PCM='MTF') then do; /*MTF
enrolled, <65*/
   group='1';
```

```
      stratum=group||com_geo||enbgsmpl;
end;
else if dageqy<'065' and PCM='CIV' then do; /*CIV enrolled, <65*/
   group='2';
   stratum=group||com_geo||enbgsmpl;
end;
else if dageqy<'065' and PCM=' ' then do;  /*non-enrolled, <65*/
   group='3';
   stratum=group||com_geo||enbgsmpl;
end;
else if dageqy >='065' then do;
   if ACV in ('L', 'G') then do; /*TRICARE-plus, >65*/
   group='4';
   stratum=group||com_geo||'99';
   end;
   else do;  /*All other(Nonenrolled), >65*/
   group='5';
   stratum=group||com_geo||'99';
   end;
end;

run;

title4 "Check Com_geo";
proc freq data=merged;
tables com_geo*R_MTF*tnexreg*patcat*dageqy*pcm /missing list;
format dageqy $FMTage.;
run;

title4 "Proc Freq Checking";
proc freq data=merged;
tables  group
        group*enbgsmpl
        group*acv*patcat*dageqy*pcm
        stratum*group*com_geo*enbgsmpl/missing list;
format dageqy $FMTage.;
run;

title4 "TRICARE Reserve Select";
proc freq data=merged;
where group='0';
tables group*stratum*TNEXREG*enbgsmpl/missing list;
run;

title4 "MTF-enrolled, <65 ";
proc freq data=merged;
where group='1';
tables group*R_MTF*stratum*com_geo*enbgsmpl*TNEXREG/missing list;
run;

title4 "CIV-enrolled, <65 ";
proc freq data=merged;
where group='2';
tables group*stratum*TNEXREG*enbgsmpl/missing list;
run;

title4 "non-enrolled, <65 ";
```

```
proc freq data=merged;
where group='3' ;
tables group*stratum*TNEXREG*enbgsmpl/missing list;
run;

title4 "TRICARE-plus, >65 ";
proc freq data=merged;
where group='4' ;
tables group*stratum*acv*TNEXREG/missing list;
run;

title4 "The other(nonenrolled), >65 ";
proc freq data=merged;
where group='5' ;
tables group*stratum*acv*TNEXREG*enbgsmpl/missing list;
run;

*Switch the zone definition to be consisitent with the fiscal year;
data out.framea_prelim;
set merged;
if 0.75 < prn <= 1 then do;
   zone1=1;
   zone=1;
end;
else if 0.00 <= prn <= 0.25 then do;
   zone2=1;
   zone=2;
end;
else if 0.25 < prn <= 0.50 then do;
   zone3=1;
   zone=3;
end;
else if 0.50 < prn <= 0.75 then do;
   zone4=1;
   zone=4;
end;
run;

title4 "Checks Zone Assignment in Preliminary Adult Sampling Frame:";
proc freq data=out.framea_prelim;
tables zone*zone1*zone2*zone3*zone4*prn/missing list;
format prn FMTprn.;
run;

title4 "Contents for the Preliminary Adult Sampling Frame:";
proc contents data = out.framea_prelim;
run;



*************** The End ******************;
```

FRAME.INC

```
****************************************************************************
*** Project:  Health Care Survey of DoD Beneficiaries - Quarterly/Annual
***           Adult Dataset
*** Program:  Frame.inc -- include file used in adjwt.sas and cacsmpl.sas
*** Purpose:  Geographic collapsements from q4 framea to be run on all
***           quarters
***
*** Modified: 1) 01/15/2003 by K Rathbun moved collapsement parts of the
***              CACSMPL.SAS program into this include file.
***           3) 01/28/03 by E Friedman additional collapsements for q2 2003
***           4) 11/11/2004 by H Xu made 9 Navy sites stand alone. Collapsed
***              9 Air Force sites. Cleaned the codes by removing the
***              commented codes
***           5) 04/26/2005 by H Xu for Q3, 2005 added a macro
***              assigngeocell.sas and assigncom_geo to assign the needed
***              assignments automatically
***
*** Notes:    1) Com_geo = Cacsmpl
***           2) This include file was originally used in adjwt.sas. It was
***              adapted with macro to accomodate reprocessing of the 2000.
***           3) Beginning with q2 2003, this include file has been run in
***              framea.sas
****************************************************************************;

/***NOTE added on 05/06/2005 by H Xu: In q3 2005, Nancy, Sonya, and I decided
on the following assignments in frame.inc:
1) For PCM ='MTF' and d_fac in (ADMIN, DENTAL, INACT, SHIP, TSCPCM),
   servaff=T, and enrid=' ', we assign geocell=dcatch.
2) For PCM ='MTF' and d_fac in (ADMIN, INACT, SHIP, TSCPCM), we assign
   com_geo=geocell.
3) All others: PCM='MTF' and d_fac=DENTAL, servaff=T, and enrid=' ', we
   assign com_geo=d_par.

We haven't found why we assigned com_geo=geocell only for those with
PCM='MTF' and d_fac in (ADMIN, INACT, SHIP, TSCPCM). We'll try  to find out
the reason behind that, and do something accordingly from q1 2006. ***/

/***NOTE added on 05/11/2005 by Haixia Xu: After we used the macros for the
assignments as described above,we found there is one small cacsmpl=6992 which
we need to collapse(see the old_framea01_chk.lst). When Sonya and I tried to
figure out how to collpase 6992, we noticed that in frame.inc in the previous
quarters, we actually put 6992 in the administrative assignments, so we
decided that we will put both the old assignments and the macros in frame.inc
so we can catch those special cells as many as possible. I think the macros
should come before the old assignments ***/

*******************************************************;
*** Define the macros: assigngeocell, assigncom_geo  ***;
*******************************************************;

***Macro assigngeocell does the assignments describe in NOTE 1) above;
%macro assigngeocell;

  %do i = 1 %to &loopnum.;

    %let category_name=%scan(&category_list., &i.);
    %let var_name=%scan(&var_list., 1);
```

```
      %if &i. = &loopnum. %then %do;
        %let var_name=%scan(&var_list., 2);
      %end;

    title4 "Freq of &var_name.*geocell for cases with
&var_name.=&category_name.";
    proc freq data=TMA NOPRINT;
    where &var_name.="&category_name.";
    tables &var_name.*geocell/missing list out=&category_name.;
    run;

      data &category_name.(keep=&var_name. dmis_id);
      set &category_name.;
      rename geocell=dmis_id; /*rename geocell as dmis_id */
    run;

    data _null_;
    set &category_name.;

      %if &i. = 1 %then %do; /*open a new file*/
        file "&listout..inc" LRECL=9999 RECFM=v;
        %end;
      %else %do; /*modify the existing file */
        file "&listout..inc" LRECL=9999 RECFM=v mod;
        %end;

      if _N_=1 then do;
        if &var_name.='ADMIN' then do;
          put "******************************************************;";
          put "*** Administration assignment                      ***;";
          put "******************************************************;";
            end;
        else if &var_name. ='DENTAL' then do;
          put "******************************************************;";
          put "*** Dental assignment                              ***;";
          put "******************************************************;";
            end;
        else if &var_name. ='INACT' then do;
          put "******************************************************;";
          put "*** Inactive assignment                            ***;";
          put "******************************************************;";
            end;
        else if &var_name. ='SHIP' then do;
          put "******************************************************;";
          put "*** On board ship assignment                       ***;";
          put "******************************************************;";
            end;
        else if &var_name. ='TSCPCM' then do;
          put "******************************************************;";
          put "*** Managed care contractor assignment             ***;";
          put "******************************************************;";
            end;
        else if &var_name. ='T' then do;
          put "******************************************************;";
          put "*** Uniformed Services Family Health Plan assignment ***;";
          put "******************************************************;";
```

```
         end;

         if &i. = 1 then do;
           put "if enrid = '" dmis_id +(-1) "' then &fromvar.=&tovar.;";
         end;
         else do;
         put "else if enrid = '" dmis_id +(-1)"' then &fromvar.=&tovar.;";
         end;
       end;
       else do;
         put "else if enrid = '" dmis_id +(-1)"' then &fromvar.=&tovar.;";
       end;

    run; /*end of the data-set step */

  %end; /*end of do loop*/

%mend assigngeocell;

***Macro assigncom_geo does the assignments describe in NOTE 2) above;
%macro assigncom_geo;

  %do i = 1 %to &loopnum.;

    %let category_name=%scan(&category_list., &i.);
    %let var_name=%scan(&var_list., 1);

    title4 "Freq of &var_name.*geocell for cases with
&var_name.=&category_name.";
    proc freq data=TMA NOPRINT;
    where &var_name.="&category_name.";
    tables &var_name.*geocell/missing list out=&category_name.;
    run;

      data &category_name.(keep=&var_name. dmis_id);
      set &category_name.;
      rename geocell=dmis_id; /*rename geocell as dmis_id */
    run;

    data _null_;
    set &category_name.;

      %if &i. = 1 %then %do; /*open a new file*/
        file "&listout..inc" LRECL=9999 RECFM=v;
        %end;
      %else %do; /*modify the existing file */
        file "&listout..inc" LRECL=9999 RECFM=v mod;
        %end;

      if _N_=1 then do;
        if &var_name.='ADMIN' then do;
          put "***************************************************;";
          put "*** Administration assignment                 ***;";
          put "***************************************************;";
            end;
        else if &var_name. ='INACT' then do;
          put "***************************************************;";
```

```
            put "*** Inactive assignment                          ***;";
            put "*****************************************************;";
              end;
          else if &var_name. ='SHIP' then do;
            put "*****************************************************;";
            put "*** On board ship assignment                      ***;";
            put "*****************************************************;";
              end;
          else if &var_name. ='TSCPCM' then do;
            put "*****************************************************;";
            put "*** Managed care contractor assignment            ***;";
            put "*****************************************************;";
          end;

          if &i. = 1 then do;
            put "if enrid = '" dmis_id +(-1)"' then &fromvar.=&tovar.;";
          end;
          else do;
          put "else if enrid = '" dmis_id +(-1)"' then &fromvar.=&tovar.;";
          end;
        end;
        else do;
          put "else if enrid = '" dmis_id +(-1)"' then &fromvar.=&tovar.;";
        end;

     run; /*end of the data-set step */

   %end; /*end of do loop*/

%mend assigncom_geo;


****************************************;
*** Invoke the macro assigngeocell   ***;
****************************************;

%let category_list = ADMIN DENTAL INACT SHIP TSCPCM T;
%let var_list = d_fac servaff;
%let loopnum =6;

%let listout = &folder.\assigngeocell;
%let fromvar=geocell;
%let tovar=dcatch;

%assigngeocell;


DATA FRAME;
   SET FRAME;
   if pcm='MTF' then do;
      /* Use the list produced by the macro */
      %include "&listout..inc" ;

      /* all the old assignments from frame.inc for q2, 2005 */
      else if ('1976' <= enrid <= '1980' ) or ( '6301' <= enrid <= '6323' )
or
         ('6991' <= enrid <= '6994')   or ('6501' <=enrid <='6512') or
```

```
        ('7166' <= enrid <= '7195') or ( '6700' <= enrid <= '6881' ) or
enrid='0000'
          then geocell=dcatch; *administrative assignment 1976-1980 added q4
2002, 6700-6881 added q1 2004, 0000 added q1,2005;
         else if ('8001' <= enrid <= '8036') or ('6901' <= enrid <= '6919')
          then geocell = dcatch; *Managed care contractor assignment, added in
q1 2005; *8001-8036 added q2 2005;
        else if ('3031' <= enrid <= '3057')
          then geocell = dcatch; ***On board ship***;
        else if enrid in ('0002', '0041', '0044', '0082', '0111', '0213',
'0235', '0585', '5208', '0250', '0449', '0626', '0012')
          then geocell = dcatch; ***Inactive***;  *0626 added q2 2003, 0012
added q4 2003, 0041, 0044, 0082, 0111, 0213, 0235, 0585 added q2 2005;
        else if enrid = ' ' then geocell = dcatch; ***enrolled, but missing
ENRID, added q2 2005***;
        ********************************************************************;
        else if ('0190' <= enrid <='0199') then geocell = dcatch;**BYDON;
        ********************************************************************;
        else geocell = enrid;
   end;
   else if patcat='ACTDTY' then geocell=dcatch; /*Added in q1fy2007, Put the
rest of ACTDTY in their dcatch for sampling purpose*/
   else geocell=dcatch;
RUN;

proc sort data=frame;
   by geocell;
run;

data frame2 both fr_only fy_only;
   merge frame (in=infr) TMA (in=infy);
   by geocell;
if infr=1 then output frame2;
if infr=1 and infy=1 then output both;
else if infr=1 and infy=0 then output fr_only;
else if infr=0 and infy=1 then output fy_only;
run;

title4 "The records in framea but not in TMA spreadsheet";
proc print data=fr_only;
run;

title4 "Freq of PCM*d_fac in the frame - Everybody";
proc freq data=frame2;
tables pcm*d_fac/missing list;
run;

*************************************;
*** Invoke the macro assigncom_geo  ***;
*************************************;
%let category_list = ADMIN INACT SHIP TSCPCM;
%let var_list = d_fac;
%let loopnum =4;

%let listout = &folder.\assigncom_geo;
%let fromvar=com_geo;
%let tovar=geocell;
```

```
%assigncom_geo;

data t_frame ;
   set frame2;
   *************************;
   com_geo=geocell;
   *************************;

   if pcm='MTF' then do;

      /* Use the list produced by the macro */

      %include "&listout..inc" ;

      /* all the old assignments from frame.inc for q2, 2005 */

      else if ('1976' <= enrid <= '1980') or ('6301' <= enrid <= '6323') or
          ('6991' <= enrid <= '6994') or ('6501' <= enrid <= '6512') or
          ('7166' <= enrid <= '7195') or ('6700' <= enrid <= '6881') or
enrid='0000'
          then com_geo = geocell; *Administrative assignment--1976-1980 added
q4 2002. 0000 added q1,2005;
          else if ('8001' <= enrid <= '8036') or ('6901' <= enrid <= '6919')
          then com_geo = geocell; *Managed care contractor assignment, added
in q1, 2005;*8001-8036 added q2 2005;
      else if ('3031' <= enrid <= '3057')
          then com_geo = geocell; ***On board ship***;
      else if enrid in ('0002', '0041', '0044', '0082', '0111', '0213',
'0235', '0585', '5208', '0250', '0449', '0626', '0012')
      then com_geo = geocell; ***Inactive***;  *'0626' added q2 2003, 0012
added q4 2003, 0041, 0044, 0082, 0111, 0213, 0235, 0585 added q2 2005;

      else com_geo = d_par;
   end;
   else if patcat='ACTDTY' then com_geo=d_par;

   **********************************************************************;
   ***Made the following 9 Navy sites stand alone in q1,2005:      ***;
   ***'0026','0068','0231','0378','0387','0405','0407','0508','6215'***;
   **********************************************************************;
   /*NOTE in q1fy2007: All thest 9 sites are in listdmis.sd2 that Eric
provides, which makes sense*/
   if geocell in
('0026','0068','0231','0378','0387','0405','0407','0508','6215') then
com_geo=geocell;

RUN;

title4 "Everybody";
proc freq data=t_frame;
tables com_geo*geocell/missing list;
run;

title4 "pcm='MTF' ";
proc freq data=t_frame;
tables com_geo*geocell*d_par/missing list;
```

```
where pcm='MTF';
run;

title4 "Check the beneficiaries with enrid =' '";
proc freq data=t_frame ;
tables pcm*pnlcatcd/missing list;
where enrid=' ' ;
run;

************** The end **************;
```

FRAMEA.SAS

```
****************************************************************************
*** Program : framea.sas
*** Project : Health Care Survey of DoD Beneficiaries - Adult (06663.200)
*** Purpose : Collapse the small stratum, and finalize the frame
*** Input   : framea_prelim.sas7bdat
*** Output  : framea.sas7bdat
*** Notes   : Data quality issue with April 2011 (affecting Q4FY2011)
***           enrollment counts reported in DEERS Eligibility. There are
***           smaller cell counts than usual
*** MODIFIED: 1) 07/27/11 A.Borgen for Q1FY2012 Walter Reed closing, merged
***              to Bethesda Naval Hospital
****************************************************************************;

*** Set up options. ***;
options ls=132 ps=79 compress=yes nocenter noxwait;

%let quarter=Q1FY2012;

*** Set up the titles. ***;
title1 "Program: FRAMEA.sas (&QUARTER.)";
title2 "Collapse the small stratum, and finalize the frame";

*** Set up the input and output paths. ***;
libname in  "L:\&QUARTER.\Data\Afinal"; /*framea_prelim.sas7bdat*/
libname out "L:\&QUARTER.\Data\Afinal"; /*framea.sas7bdat*/

data framea;
set in.framea_prelim;
stratumo=stratum;

*_____
                          COLLAPSE
_____;

*FIX COLLAPSEMENT (THIS PART DO NOT CHANGE QUARTER TO QUARTER) ;

/*Note: Collapse these cells to attempt to raise sample size*/
/*Note: Tom indicated he wanted to drop TRS regional estimates - so we could
do one MHS-wide stratum for TRS, instead of regional.*/

/*Note: Tom also said that he did not think we need to keep TRICARE Plus
separate from other 65+, so we could collapse all 65+ together, with same
objective as current nonenrolled 65+. */

/*Note: For the beneficiaries 65+, we don't separate sample TRICARE Plus
enrollees*/;

if stratumo in ('4900199','5900199') then stratum='6900199';
if stratumo in ('4900299','5900299') then stratum='6900299';
if stratumo in ('4900399','5900399') then stratum='6900399';
if stratumo in ('4900499','5900499') then stratum='6900299';

/*Note: We don't stratify TRICARE Reserve Select(TRS) enrollees by TNEX
region, instead, we just had all TRS enrollees in one stratum.*/
if stratumo in ('0900111','0900211','0900311','0900411') then
stratum='0999911';
```

```
/*Added in q3fy2009. As per Nancy's email below:
From: Nancy Clusen
Sent: Thursday, November 13, 2008 12:46 PM
To: Eric Schone; Keith Rathbun
Cc: Amang Sukasih; Haixia Xu
Subject: FW: checking dmid=1350
Hello,
37th Medical Group Lackland Air Force Base DMIS ID 1350 first appears in the
frame in Q2. The facility type is Clinic, but it also is its own Parent
facility. As you can from Haixia email below, most of the beneficiaries
enrolled to 1350 in Q2 were enrolled with the 59th Medical Wing-Lackland DMIS
ID 117 in Q1. Should we combine 117 and 1350 for the purposes of reporting?
*/
/*if substr(stratumo,2,4) = '0117' then substr(stratum,2,4)='1350';*/
if substr(stratumo,2,4) = '1350' then substr(stratum,2,4)='0117';

/*Q1FY2012 added Walter Reed closing, merged with Bethesda Naval Hospital*/
if substr(stratumo,2,4) = '0037' then substr(stratum,2,4)='0067';

run;

title3 "Check stratum after Permanent Cell Collapse";
proc freq data=framea;
tables stratum*stratumo /missing list;
run;

title3 "Check stratum";
proc freq data=framea noprint;
tables stratum*stratumo /missing list;
tables stratum/out=freqcnt missing list;
run;

title4 "Small stratum with count <1000";
proc print data=freqcnt noobs;
var stratum count;
where count<1000;
run;
```

```
*_____
                    CHECK FOR SMALL CELL
 (Each quarter, comment out this collapsement part and run program
         to see if we have same/new small cell.
       Do the necessary collapsement if necessary)
*_____;
*
Small stratum with count <1000
```

Stratum	Q1FY2012	Q4FY2011	Q3FY2011	Q2FY2010
1005103	–	328	–	–
1005106	–	17	–	–
1007403	673	659	682	707
1009406	–	578	–	–
1011203	–	956	771	815
1012703	–	71	–	–
1012706	–	207	–	–
1013106	566	571	589	596
1024806	728	731	755	745

```
1038703      -          8         -          -
1038706      -          7         -          -
1050803    672        662       328        355
1050806    399        408       395        402
1060906    699        596       666        679
1061206      -          -         -        553
1062106    917        846       765        666
1062206    376        369       396        415
1080406    889        909       944        971
1080506    608        619       689        693
1080606    428        378       467        487
1621501     59         50        59         59
2900405    819        794       708        760
;


data framea;
   set framea  /*(drop=stratumo)*/;
              /*stratumo=stratum;*/
*Note: We check Small Cell Collapsement Every Quarter before taking action;
* COLLAPSEMENT for Q1FY2012;
* ========================;
if stratumo in ('1007403','1007406') then stratum='1007403';
*else if stratumo='1009406' then stratum='1009403';
*else if stratumo='1011203' then stratum='1011206';
else if stratumo='1013106' then stratum='1013103';
else if stratumo='1024806' then stratum='1024803';
else if stratumo in ('1050803','1050806') then stratum='1050803';
else if stratumo='1060906' then stratum='1060903';
*else if stratumo='1061206' then stratum='1061203';
*else if stratumo='1062106' then stratum='1062103';
else if stratumo='1062206' then stratum='1062203';
else if stratumo='1080406' then stratum='1080403';
else if stratumo='1080506' then stratum='1080503';
else if stratumo='1080606' then stratum='1080603';

*Note : Cell 1621501 is so small because it is a Special Clinic in California
*Located far away from the base used mostly by family members:;
else if stratumo in ('1621501','1621503') then stratum='1621503';
else if stratumo in ('2900402','2900405') then stratum='2900405';
group=substr(stratum,1,1);
run;


*Checks the small stratum again after collapsements;
proc freq data=framea NOPRINT;
tables stratum /out=chksmallsize missing list;
run;

title3 "Checks the small Stratum again after Collapsements";
title4 "  (note: we leave count>900 As Is)";
title5 "(if count<900 listed here,carefully check the reason for not
collapsing any further)";
proc print data=chksmallsize;
where count <1000;
var stratum count;
run;

title3 'Check the Stratum Collapsements';
```

```
proc freq data=framea;
tables stratum*stratumo/missing list;
run;

title3 'CROSS FREQ: Stratum*Group';
proc freq data=framea;
table stratum*group/list missing;
run;

*_____
 Construction of Geosmpl, Ebsmpl and Grop_Geo from Stratum
_____;

data out.framea;
set framea(drop=stratumo);
geosmpl=substr(stratum, 2, 4);
ebsmpl=substr(stratum, 6, 2);
grp_geo=substr(stratum, 1, 5);
run;

title3 "Check the Construction of geosmpl, ebsmpl, grp_geo";
proc freq data=out.framea;
tables stratum*geosmpl/missing list;
tables stratum*ebsmpl  /missing list;
tables stratum*grp_geo/missing list;
run;

TITLE3 "CROSS FREQ: Check the ebsmpl";
proc freq data=out.framea;
tables group*enbgsmpl*ebsmpl/missing list;
run;

Title3 "CROSS FREQ : (where, enbgsmpl ~= ebsmpl):                ";
Title4 "     Note: the (ENBGSMPL ne EBSMPL) are because of two things";
Title5 "           - Collapsment of Strata,                       ";
Title6 "           - In Group 4 and 5 EBSMPL is always 99         ";
proc freq data=out.framea;
tables stratum*enbgsmpl*ebsmpl/missing list;
where enbgsmpl ne ebsmpl ;
run;

title3 'Freq of group grp_geo stratum in the Final Frame';
proc freq data=out.framea;
tables group  /missing list;
tables grp_geo/missing list;
tables stratum/missing list;
run;

title3 'Freq of Stratum*Zone in the Final Frame';
proc freq data=out.framea;
tables stratum*zone/missing list;
run;

title3 'Contents of the Final Frame (framea)';
proc contents data=out.framea;
run;
/********The End *********/
```

COUNTA.SAS

```
****************************************************************************
*** Project: Health Care Survey of DoD Beneficiaries - Adult (06663.200)
*** Purpose: Produce the population counts for different domains
*** Program: counta.sas
*** Input  : framea.sas7bdat
*** Output : counta.sas7bdat
*** Written: H Xu on 8/17/2006
****************************************************************************;

options ls=132 ps=79 compress=yes nocenter noxwait obs=max;

%LET QUARTER=Q1FY2012;

libname in  "L:\&QUARTER.\Data\Afinal"; /*framea.sas7bdat*/
libname out "L:\&QUARTER.\Data\Afinal"; /*counta.sas7bdat*/

TITLE1 "Produce cell counts - Form A (&QUARTER.)";
TITLE2 "Program Name: COUNTA.SAS";

*** Create a couple of macro variables for the program. ***;
%let indata=in.framea;
%let dsn = framea;
%let by_vars = stratum grp_geo geosmpl ebsmpl group  ;

data &dsn.;
set &indata.(keep=&by_vars. prn);
run;

TITLE3 "FREQS of the frame";
PROC FREQ DATA=&dsn.;
TABLES &by_vars./MISSING LIST;
RUN;

*** Get the total number of observations. ***;

TItle3 "Proc Means of PRN";
proc means data=&dsn.;
  var prn;
  output out=total n=total;
run;

data total;
  set total (keep=total);
run;

*** Sort the frame. ***;

PROC SORT DATA=&dsn. OUT=&dsn.;
   BY &by_vars.;
RUN;

*** Set up the table for the counts that will follow. ***;

PROC MEANS DATA=&dsn. NOPRINT;
   BY &by_vars.;
   VAR prn;
   OUTPUT
```

```
   OUT=T0(KEEP=&by_vars.)
   N=DUMMY;
RUN;

proc print data=T0;run;

PROC FREQ DATA=&dsn. NOPRINT;
   TABLES stratum
  /MISSING LIST OUT=T1(RENAME=(COUNT=PSUM0)
               KEEP=COUNT stratum) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=&dsn. NOPRINT;
   TABLES grp_geo
  /MISSING LIST OUT=T2(RENAME=(COUNT=PSUM1)
               KEEP=COUNT grp_geo) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=&dsn. NOPRINT;
   TABLES geosmpl
  /MISSING LIST OUT=T3(RENAME=(COUNT=PSUM2)
               KEEP=COUNT geosmpl) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=&dsn. NOPRINT;
   TABLES ebsmpl
  /MISSING LIST OUT=T4(RENAME=(COUNT=PSUM3)
               KEEP=COUNT ebsmpl) NOPERCENT NOCUM NOPRINT;
RUN;

PROC FREQ DATA=&dsn. NOPRINT;
   TABLES group
  /MISSING LIST OUT=T5(RENAME=(COUNT=PSUM4)
               KEEP=COUNT group) NOPERCENT NOCUM NOPRINT;
RUN;

*** Merge the tables together. ***;

PROC SORT DATA=T0; BY stratum; RUN;

DATA T0;
   MERGE T0 T1;
   BY stratum;
RUN;

PROC SORT DATA=T0; BY grp_geo; RUN;
DATA T0;
   MERGE T0 T2;
   BY grp_geo;
RUN;

PROC SORT DATA=T0; BY geosmpl; RUN;
DATA T0;
   MERGE T0 T3;
   BY geosmpl;
RUN;
```

```
PROC SORT DATA=T0; BY ebsmpl; RUN;
DATA T0;
    MERGE T0 T4;
    BY ebsmpl;
RUN;

PROC SORT DATA=T0; BY group; RUN;
DATA T0;
    MERGE T0 T5;
    BY group;
   LABEL  PSUM0 = 'PSUM0 - Stratum Count'
          PSUM1 = 'PSUM1 - grp_geo Count'
          PSUM2 = 'PSUM2 - geosmpl Count'
          PSUM3 = 'PSUM3 - ebsmpl Count'
          PSUM4 = 'PSUM4 - group Count'
        ;
RUN;

data t0;
    if _n_=1 then set total;
    set t0;
    label total = 'TOTAL - Population';
run;

*** Section to do some checking. ***;

proc sort data=t0 out=t0;
by group grp_geo geosmpl ebsmpl stratum;
run;

PROC PRINT data=t0;
  var stratum grp_geo geosmpl ebsmpl group psum0-psum4 total;
  sum psum0;
RUN;

*** Write the count data set to a permanent SAS data set. ***;

data out.counta;
  set T0;
run;

TITLE3 "CONTENTS of COUNTA.sas7bdat";
PROC CONTENTS data=out.counta; RUN;

*_____
Checking
_____;
TITLE3 "Check grp_geo sum: psum1";
proc freq data=T0;
tables grp_geo*psum1/missing list;
run;

proc sort data=T0 out=cntgrp_geo nodupkey;
by grp_geo psum1;
run;

proc print data=cntgrp_geo;
```

```
var grp_geo psum1;
sum psum1;
run;

TITLE3 "Check geosmpl sum: psum2";
proc freq data=T0;
tables geosmpl*psum2/missing list;
run;

proc sort data=T0 out=cntgeosmpl nodupkey;
by geosmpl psum2;
run;

proc print data=cntgeosmpl;
var geosmpl psum2;
sum psum2;
run;

TITLE3 "Check ebsmpl sum: psum3";
proc freq data=T0;
tables ebsmpl*psum3/missing list;
run;

proc sort data=T0 out=cntebsmpl nodupkey;
by ebsmpl psum3;
run;

proc print data=cntebsmpl;
var ebsmpl psum3;
sum psum3;
run;

TITLE3 "Check group sum: psum4";
proc freq data=T0;
tables group*psum4/missing list;
run;

proc sort data=T0 out=cntgroup nodupkey;
by group psum4;
run;

proc print data=cntgroup;
var group psum4;
sum psum4;
run;
                        /******* The End *******/
```

SAMSIZEA.SAS

```
     ************************************************************************
     * Project:  Health Care Survey of DoD Beneficiaries - Adult (06663.200)
     * PROGRAM:  SAMSIZEA.SAS
     * Purpose: Sample size determination for the HCSDB Quarterly Adult Survey
     * Programmer    : D Jang
     * INPUTS        : POPULATION COUNTS (COUNTA.sas7bdat)
     * OUTPUTS       : FINAL SAMPLE SIZES (SAMSIZEA.sas7bdat)
     ***********************************************************************;

     /* NHFF is equal to sample size by stratum
        NHF_2, NHF, NHZERO are intermediate variables used to construct NHFF */

     %LET QUARTER=Q1FY2012;


     libname in   "L:\&QUARTER.\Data\AFinal";
     libname out  "L:\&QUARTER.\Data\AFinal";


     OPTIONS PS=79 LS=132 NOCENTER mlogic symbolgen;


     TITLE1 "Sample Size Determination for DOD Quarterly Survey";
     TITLE2 "PROGRAM: SAMSIZEA.SAS (&QUARTER.)";


     %LET P = 0.5;            ***  PRODUCE THE MOST CONSERVATIVE SAMPLE SIZES;
     %LET Z = 1.96;           ***  97.5th PERCENTILE FOR Z-DIST;
     %LET SSQUARE = &P*(1-&P); ***  FORMULA FOR VARIANCE OF P;


     /*------------------------------------------------------------------------
             Create the macro variables to be used in main part of the program
     --------------------------------------------------------------------------*/
     /*Create three macro variables:
     largestreg - the largest TNEX region in group=6
     largestcnt - the frame count for the largest TNEX region in group=6
     oversecnt -  the frmae count for the oversea TNEX region in group=6
     */
     data temp1;
        set in.framea_prelim(keep=stratum group);
        where group in ('4', '5');
        tempvar=substr(stratum, 2, 6);
     run;

     proc freq data=temp1;
        tables tempvar*group/missing list out=temp2;
     run;

     proc transpose data=temp2 out=temp3;
        by tempvar;
        id group;
        var count;
     run;

     data temp3;
        set temp3;
        _6=_4+_5;
     run;

     data temp3;
        set temp3 end=finished;
```

```
   retain largestreg largestcnt ;
   if _6>largestcnt then do;
      largestreg=compress(substr(tempvar,1,4));
      largestcnt=_6;
   end;
   if finished then do;
      call symput("largestreg", largestreg);
      call symput("largestcnt", largestcnt);
   end;
   if tempvar="900499" then
      call symput("overseacnt", _6);
run;

title3 "Check the construction of macro variables";
proc print data=temp3;run;

%put The largest TNEX region in group=6: &largestreg.;
%put The count for the largest TNEX region in group=6: &largestcnt.;
%put The count for the oversea TNEX region in group=6: &overseacnt.;


/*-----------------------------------------------------------------------
  Assign precision
-------------------------------------------------------------------------*/
%let pre1=0.12;       /*each geosmpl domain precision for TRICARE reserve
                        selected,and over65/TRICARE-Plus*/
%let pre2=0.06;       /*each geosmpl domain precision for over65/non-enrollees
                        and under65/CIV-enrollees */
%let pre3=0.10;       /*stratum precision for under65,non-enrollees */
%let pre4=0.1325581;  /*Q1FY2012 (required 0.12)*/


/*-----------------------------------------------------------------------
  MACRO: CALCULATE NUMERICAL PORTIONS OF VARIANCES GIVEN SAMPLE SIZES
-------------------------------------------------------------------------*/

TITLE1 "SAMPLE SIZE DETERMINATION FOR DOD Quarterly FORM A SURVEY OF HEALTH
BENEFICIARIES";
TITLE2 "PROGRAM: SAMSIZEA.SAS (&QUARTER.)";

%MACRO VAR(DAT,DOMAIN,POPSIZE,NH,ODAT);
DATA VARA;
        SET &DAT;BY &DOMAIN;
        VH=&POPSIZE**2*((&POPSIZE-&NH)/(&POPSIZE-1))*&SSQUARE/&NH;
RUN;

PROC MEANS DATA=VARA NOPRINT;
        VAR VH;BY &DOMAIN;
        OUTPUT OUT=&ODAT SUM=VSUM;
RUN;
%MEND VAR;

*************************************************************************
*        TO DETERMINE OPTIMAL STRATUM SIZES GIVEN PREDETERMINED VARIANCE
*************************************************************************;
%MACRO OPTALLO(DAT,DOMAIN,POPSIZE,V0,ODAT);
/*--------------------------------------------------------
        TO CALCULATE PARTIAL SUMS OF REMAINING DOMAIN SIZES
        NOTE:  THIS SUM can be DIFFERENT FROM THE DOMAIN TOTAL !!!
```

```
                ------------------------------------------------------------*/
DATA &DAT;SET &DAT;
        DEN = (&POPSIZE/DSUM&ITE)**2/(&POPSIZE-1);
        COM = &POPSIZE*SQRT(&POPSIZE/(&POPSIZE-1));
        NUM = COM/DSUM&ITE;
RUN;
PROC MEANS DATA=&DAT NOPRINT;
        VAR NUM DEN COM;BY &DOMAIN;
        OUTPUT OUT=DSIZEA SUM=NUMS DENS COMS;
RUN;

DATA &ODAT;
        MERGE &DAT DSIZEA;BY &DOMAIN;
        ND=(&SSQUARE*NUMS**2)/(&V0+&SSQUARE*DENS);
        NHO=ND*COM/COMS;
        DROP ND NUM DEN COM NUMS DENS COMS;
RUN;
%MEND OPTALLO;
/*----------------------------------------------------------------
        TO RETREIVE THE NUMBER OF OBSERVATIONS IN A SAS DATA SET
----------------------------------------------------------------*/
%MACRO NUMOBS(DSN);
        %GLOBAL NUM;/* THIS MACRO CONTAINS THE NUMBER OF OBS IN THE DATA*/
        DATA _NULL_;
                IF 0 THEN SET &DSN NOBS=COUNT;
                CALL SYMPUT('NUM',LEFT(PUT(COUNT,8.)));
                STOP;
        RUN;
%MEND NUMOBS;

/*----------------------------------------------------------------
        ITERATE UNTIL THE REMAINING DOMAINS HAVE NHO GREATER THAN
        THE PREVIOUS SAMPLE SIZES
----------------------------------------------------------------*/
%MACRO ITERATE;
%OPTALLO(STE,DOM&ITE,POPSIZE,VSTAR,OSTAT);

DATA FIN&I STE;
        SET OSTAT;
        IF NHF < NHO THEN FIN = FIN +1;
IF FIN=&I then output FIN&I;
IF FIN = &I + 1 then output STE;
RUN;

%VAR(FIN&I,DOM&ITE,POPSIZE,NHF,SUMMARY);

DATA STE;
        MERGE STE (IN=A) SUMMARY ;BY DOM&ITE;
        IF A;
        IF VSUM=. THEN VSUM=0;****SHOULD EXIST!!!;
        VSTAR= VSTAR - VSUM/DSUM&ITE**2;
        DROP VSUM;
RUN;
%MEND ITERATE;
```

```
/*-------------------------------------------------------------------
        MAIN PART OF THE PROGRAM:  'ITE' INDICATES THE LEVEL OF DOMAINS
------------------------------------------------------------------------*/
%MACRO MPART(ITE);
PROC SORT data=indata;BY DOM&ITE;RUN;

%VAR(INDATA,DOM&ITE,POPSIZE,NHF,SUMMARY);

DATA CHKVAR;***TO COMPARE THE VARIANCE TO THE PRECISION REQUIREMENT;
        MERGE SUMMARY INDATA;BY DOM&ITE;
        FIN=1;
        MARGIN=SQRT((VSUM/DSUM&ITE**2)*1.96**2)/HL&ITE;
        IF MARGIN > 1 THEN FIN=FIN+1;
        DROP VSUM MARGIN; /* SHOULD DROP 'VSUM'VARIABLE HERE !!! */
RUN;

***DATA SET INCLUDING STRATA HAVING FINAL SAMPLE SIZE AT THIS STEP***;

DATA FIN1 STE;
        SET CHKVAR;BY DOM&ITE;
        VSTAR=(HL&ITE/1.96)**2;
IF FIN=1 then output FIN1;
IF FIN=2 then output STE;
RUN;

%NUMOBS(STE);

%LET I = 1;
%IF &NUM=0 %THEN %GOTO FDSN;
/*-------------------------------------------------------------------------
   ITERATE MACRO TO UPDATE SAMPLE SIZES TO MEET THE PRECISION REQUIREMENTS
   THIS PART NEEDS TO BE REFINED TO ALLOW TO STOP THE PROGRAM WHENEVER NEEDED
-----------------------------------------------------------------------------*/
%DO %UNTIL(&NUM = 0);
        %LET I = %EVAL(&I +1);
        %ITERATE;
        %NUMOBS(FIN&I);
%END;
/*-------------------------------------------------------------------------
        GIVE THE REMAINING DOMAINS OPTIMAL SAMPLE SIZES
-----------------------------------------------------------------------------*/
%LET I = %EVAL(&I +1);
DATA FIN&I;SET STE;
        NHF = NHO;
RUN;
/*-------------------------------------------------------------------------
        COMBINE THE DATASETS INTO ONE
-----------------------------------------------------------------------------*/
%FDSN:
DATA STEP9;
        SET FIN1;

%DO J=2 %TO &I;
        DATA STEP9;
                SET STEP9 FIN&J;
        RUN;
%END;
```

```
%MEND MPART;


**************************************************************************
*       START THE MAIN PROGRAM:
------------------------------------------------------------------------;

DATA INDATA;
        SET in.counta;
        DOM0 = STRATUM;
        DOM1 = grp_geo;/*group and geosmpl combination*/
        DOM2 = ebsmpl; /*only response rate for this domain*/
        DOM3 = 1;
        POPSIZE = PSUM0;
        DSUM1 = PSUM1;
        DSUM2 = PSUM3;
        DSUM3 = TOTAL;
**************************************************************************
*   PRECISION REQUIREMENTS FOR SITE-LEVEL ESTIMATES W.R.T. THE NUMBER OF BGs
**************************************************************************;


/**************************************************************************
The quarterly stratum precision is 0.12 for TRICARE reserve
selected('09001','09002','09003','09004') and 65 or older, TRICARE-
Plus('49001','49002','49003','49004')According to oversea collapsement, the
precision changed for the one oversea goes to. Those are geo level domains'
precision also.
**************************************************************************/
        if grp_geo in ('09999')  then do;
            HLA0=&pre1.;
            HL1=&pre1.;
        end;

/**************************************************************************
 The quarterly stratum precision is 0.06 for 65 or older, Non-
enrollees('59001','59002','59003','59004'). According to oversea
collapsement, the precision changed for the one oversea goes to. Those are
geo level domains' precision also.
**************************************************************************/
        else if group='6' and grp_geo ^= compress("6"||"&largestreg.") then
do;
            HLA0=&pre2.;
            HL1=&pre2.;
        end;
        else if grp_geo = compress("6"||"&largestreg.") then do;
            HLA0=&pre2./sqrt(1+&overseacnt./&largestcnt.);
            HL1=&pre2./sqrt(1+&overseacnt./&largestcnt.);
        end;

/**************************************************************************
The quarterly stratum precision is 0.10 for under 65, Non-
enrollees('39001','39002','39003','39004')
**************************************************************************/
        else if grp_geo in ('39001','39002','39003','39004') then do;
            HLA0=&pre3.;
            HL1=&pre3.;
        end;
```

```
/**********************************************************************
For other strata(Under 65, MTF and CIV enrollees), assign a small precision
to start with small initial stratum sample size since there are no quarterly
stratum precision requirement.
**********************************************************************/
        else do;
            HLA0=0.30;


/**********************************************************************
For precision is 0.06 for geo level domain, 0.12 for those specific 106 MTF
**********************************************************************/
            if grp_geo  in
('19001','19002','19003','19004','29001','29002','29003','29004') then
HL1=&pre2.;
/*NOTE:
The part below is to sample more cases in for MTF=NAVAL HLTH CLINIC NEW
ENGLAND, which has dmisid=0100. Since when we check Q4FY2007, we found that
this facility wasn't sampled alone starting from Q2FY2007. The reason is that
starting from Q2FY2007, 0100 is the reporting MTF for
'0035','0100','0299','0321','0328'). These 5 IDs used to have their parentID
6223 in Q1FY2007.*/
        else HL1=&pre4.;
        end;

        *HL2 = 0.05;  ** FOR ebsmpl   **********;
        *HL3 = 0.02;  ** FOR AS A WHOLE *****;


*********************************************************
*       SET INITIAL SAMPLE SIZES under stratum precision
*********************************************************;
        NUM=&Z**2*&SSQUARE/HLA0**2;
        NHZERO=NUM/(1+(NUM-1)/POPSIZE);
        NHF = NHZERO;
        DROP  NUM PSUM0 PSUM1 PSUM2 TOTAL;
RUN;

*------------------------------------------------------------------------
*  ADJUST INITIAL SAMPLE SIZE TO SATISFY THE DOM&ITE PRECISION REQUIREMENT
------------------------------------------------------------------------*;

%MPART(1);

**------------------------------------------------------------------------
*       CREATE STATUS&ITE SO THAT FIN VALUES CAN REFLECT ITE TOO
------------------------------------------------------------------------*;

DATA INDATA;SET STEP9;
        STATUS1=10+FIN;
        NHF1=NHF;
DROP FIN;
RUN;

*********************************************************
*       ACCOUNT FOR OVERALL PRECISION REQUIREMENT
*********************************************************;
DATA FINAL;SET INDATA;
        VH=POPSIZE**2*((POPSIZE-NHF)/(POPSIZE-1))*&SSQUARE/NHF;
```

```
RUN;


*-------------------------------------------------------------------------
          CHECK IF THE FINAL SAMPLE SIZES MEET ALL PRECISION REQUIREMENTS
-------------------------------------------------------------------------;

PROC SORT DATA=FINAL;BY DOM1;RUN;
PROC MEANS NOPRINT DATA=FINAL;VAR VH;BY DOM1;
        OUTPUT OUT=FDATA1 SUM=V1;
RUN;
DATA FINAL;MERGE FINAL FDATA1;BY DOM1;run;

PROC SORT DATA=FINAL;BY DOM2;RUN;
PROC MEANS DATA=FINAL NOPRINT;VAR VH;BY DOM2;
        OUTPUT OUT=FDATA2 SUM=V2;
RUN;
DATA FINAL;MERGE FINAL FDATA2;BY DOM2;run;

PROC SORT data=final;BY DOM3;RUN;
PROC MEANS DATA=FINAL NOPRINT;VAR VH;BY DOM3;
        OUTPUT OUT=FDATA3 SUM=V3;
RUN;
DATA FINAL;MERGE FINAL FDATA3;BY DOM3;run;

DATA FINAL;IF _N_ = 1 THEN SET FDATA3;
        SET FINAL;
        P0=SQRT(((POPSIZE-NHF)/(POPSIZE-1))*&SSQUARE/NHF)*1.96;
        P1=SQRT((V1/DSUM1**2)*1.96**2);
        P2=SQRT((V2/DSUM2**2)*1.96**2);
        P3=SQRT((V3/DSUM3**2)*1.96**2);
RUN;



****************************************************************************
*        ACCOUNT FOR EXPECTED ESTIMATION
* 1)for CIV enrollees,80% of the sample is expected to be users of Managed
*   Care Support Contractors, 73% and 92% for ADFM and Retirees respectively.
* 2)for under65, nonenrollees,1/3 of the sample is expected to be Standard
*   Extra Users, 45.5% and 27.5% for ADFM and Retirees respectively.
****************************************************************************;
DATA EST;
        SET FINAL;
        if grp_geo in ('29001','29002','29003','29004') then do;
           if DOM2='02' then NHF_2=NHF/0.73;
             else if DOM2='05' then NHF_2=NHF/0.92;
        end;
        else if grp_geo in ('39001','39002','39003','39004') then do;
           if DOM2='04' then NHF_2=NHF/0.455;
             else if DOM2='07' then NHF_2=NHF/0.275;
        end;
        else NHF_2=NHF;
RUN;
```

```
***************************    FY2012    ***************************
*                 ACCOUNT FOR EXPECTED RESPONSE RATES
*           Using Unweighted Response Rate from 3rd Quarter of FY2011
**********************************************************************;
DATA RESP;
        SET EST;
                IF DOM2='01' THEN NHFF=INT(NHF_2/0.177)+1;
                IF DOM2='02' THEN NHFF=INT(NHF_2/0.166)+1;
                IF DOM2='03' THEN NHFF=INT(NHF_2/0.173)+1;
                IF DOM2='04' THEN NHFF=INT(NHF_2/0.123)+1;
                IF DOM2='05' THEN NHFF=INT(NHF_2/0.452)+1;
                IF DOM2='06' THEN NHFF=INT(NHF_2/0.430)+1;
                IF DOM2='07' THEN NHFF=INT(NHF_2/0.387)+1;
                IF DOM2='11' THEN NHFF=INT(NHF_2/0.241)+1;
                IF DOM2='99' THEN NHFF=INT(NHF_2/0.687)+1;
RUN;

DATA LAST;SET RESP;
        nhf = int(nhf)+1;
        nhf_2 = int(nhf_2)+1;
        nhff = min(nhff, popsize);
        nhzero = int(nhzero)+1;
        BWT00 = POPSIZE/NHFF;
PROC SORT data=LAST;BY DOM0;run;
PROC MEANS DATA=LAST min max mean n sum;VAR NHZERO nhf NHF_2 NHFF BWT00;RUN;

PROC PRINT DATA=LAST;VAR DOM0 P0 DOM1 P1 DOM2 P2 DOM3 P3 POPSIZE NHFF bwt00;
sum nhff bwt00;
RUN;

proc means sum;
class dom1;
var popsize nhff;

proc means sum;
class dom2;
var popsize nhff;

proc means sum;
var nhff;

proc sort data=last;by stratum;run;

***************************************************************
*       CREATE THE DATA SET CONTAINING THE FINAL SAMPLE SIZES
***************************************************************;
DATA out.samsizea;
        SET LAST;
        KEEP STRATUM POPSIZE NHFF BWT00 dom2;
run;

Proc print data=out.samsizea;
where NHFF<20;
TITLE3 "Check for Sample Size less than 20";
run;
```

SAMPLA01.SAS

```
****************************************************************************
* PROGRAM: SAMPLA01.SAS (6663-200)
* TASK:    DOD ADULT Health Care Survey, Quarterly Sampling
* PURPOSE: Draw Sampling for DOD Quarterly Adult Survey Form A
*
* PROGRAMMER: D Creel
*
* INPUTS:   FRAMEA.sas7bdat   - Frame for Quarterly DOD Survey
*           SAMSIZEA.sas7bdat - Sample Sizes by Stratum for Quarterly DOD
*                               Survey
*
* OUTPUTS: SAMPLA01.sas7bdat - Sampling Frame for this Quarter DOD Survey
*          SAMPLA.sas7bdat   - Create the Internal Sampling File
*          SAMPLE.sas7bdat   - Sample Data Set
****************************************************************************;

options ls=132 ps=79 nocenter compress=yes;

*Update Marco Variable Quarter with current Quarter;
%LET QUARTER=Q1FY2012;

*** Set up the input and output paths. ***;
libname in "L:\&QUARTER.\Data\AFinal";
libname out "L:\&QUARTER.\Data\AFinal";

title1 "Program: SAMPLA01.SAS (&QUARTER.)";
title2 "Draw the Sample from Adult Frame";

proc contents data=in.samsizea;

*** Sort the data sets by stratum. ***;
proc sort data=in.framea out=framea;
   by stratum;
run;

proc sort data=in.samsizea(keep=stratum nhff popsize) out=samsizea;
   by stratum;
run;

*** Keep this in to check the match of the data sets. ***;
*** Create the f_framea data set to draw the sample. ***;

data both fr_only s_only problem;
   merge framea (in=infr) samsizea (in=ins);
   by stratum;
   if infr=1 and ins=1 then output both;
   else if infr=1 and ins=0 then output fr_only;
   else if infr=0 and ins=1 then output s_only;
   else output problem;
run;

*_____
Update for ZONE/ PRN Info:
_____;
*** Sort f_framea by stratum and permanent random number, prn. ***;
```

E-66

```
/*Q1FY2012*/
proc sort data=both out=r_framea;
  where zone1=1 and
      ((stratum='1007403' and prn>.834967) or
         (stratum='2900405' and prn>.870000) or
         (stratum='3900404' and prn>.851575) or
        ((stratum NOT IN ('1007403', '2900405', '3900404') and prn>.911140)));
  by stratum prn; *Default Sort Order=Ascending;
run;

*** Draw the sample from the r_framea file. ***;
*** Create a variable called count to keep track of the number       ***;
*** drawn is less than or equal to the sample size for each stratum. ***;
*** Since the data set was sorted in descending order by permanent   ***;
*** random number, we have the sample size of the largest permanent  ***;
*** random numbers from each stratum.                                ***;

data out.sample;
   set r_framea;
   by stratum;
   retain count;
   if first.stratum = 1 then count = 1;
   else count = count + 1;
   if count <= nhff then output out.sample;
run;


***** Check the distribution of permanent random numbers. *****;
proc sort data=out.sample out=sample;
by stratum;
run;

proc means data=sample noprint;
by stratum;
var prn;
output out=m_prn(keep=stratum min_prn max_prn) min=min_prn max=max_prn;
run;

proc means data=sample noprint;
by stratum;
id popsize nhff;
var zone1 zone2 zone3 zone4;
output out=sampdiag(drop=_type_ _freq_)
       sum(zone1 zone2 zone3 zone4 )=
       s_zone1 s_zone2 s_zone3 s_zone4;
run;

proc sort data=m_prn;
by stratum;
run;

proc sort data=sampdiag;
by stratum;
run;

data zone_tab;
merge sampdiag(in=A) m_prn(in=B);
```

```
by stratum;
if A and B;
diff =s_zone1-nhff;     *For Q1FY2012, Zone1=1;
run;

title3 'Information for the Zones';
title4 ' Checks if we have enough samples to draw';
proc print data=zone_tab;
sum popsize nhff s_zone1 s_zone2 s_zone3 s_zone4  diff;
run;

title3 'Univariate of the Difference';
title4 '(where, diff=zone*-nhff)';
proc univariate data=zone_tab;
var diff;
run;

* Added by Amang 2/6/07: comparing # cases, min and max prn, in the zone
(population) and in the sample ;
proc sort data=r_framea;
by stratum;
run;
proc sort data=out.sample out=sample;
by stratum;
run;
proc means data=r_framea noprint;
by stratum ;
var prn ;
output out=f n=size_pop min=min_prn_pop max=max_prn_pop ;
run ;
proc means data=sample noprint;
by stratum ;
var prn ;
output out=s n=size_samp min=min_prn_samp max=max_prn_samp ;
run ;
data fs ;
merge f s ;
by stratum ;
run ;

title3 'Proc Print: Stratum, Pop size, Sample size, Max-Min Prn:';
proc print data=fs ;
var stratum size_pop size_samp min_prn_pop min_prn_samp max_prn_pop
max_prn_samp;
sum size_pop size_samp;
run ;

title3 'Potential Problem Strata, POPSIZE < 1000';
proc print data=zone_tab noobs;
where popsize < 1000;
sum popsize nhff s_zone1 s_zone2 s_zone3 s_zone4;
run;

title3 'Information about PRNs';
proc univariate data = out.sample;
var prn;
run;
```

```
***** Create the *internal* sampling file. *****;
data out.sampla;
set in.sample (drop =count  popsize zone zone1-zone4);
label /*cacsmpl  = 'Catchment Area'*/
      geosmpl  = 'Geographic Area'
      group='Stratification group'
      grp_geo  = 'group||geosmpl'
      enbgsmpl = 'Enrollee/Beneficiary Group'
      /*ebg_com  = 'Enrollee/Beneficiary Group Prime Combined'*/
      ebsmpl   = 'Enrollee/Beneficiary Group Collapsed'
      nhff     = 'Stratum Sample Size'
      stratum  = 'Stratum';
run;

***** Create the *client* sampling file. *****;
data out.sampla01 (keep = mprid stratum /*cacsmpl*/ enbgsmpl /*ebg_com*/ nhff
PRRECFLG);
set in.sampla;
run;

Title3 'Proc Contents of Client Sampling File';
proc contents data=in.sampla01;
run;

*_____
Checking the sample
_____;
title3 'Freq of STRATUM in Frame';
proc freq data=in.framea noprint;
table STRATUM / list missing out=denom(rename=(count=frmcnt
percent=framepct));
run;

title3 'Freq of STRATUM in Sample';
proc freq data=in.sample noprint;
table STRATUM / list missing out=numer(rename=(count=samcnt
percent=samplpct));
run;

data bwt;
merge numer(in=A) denom(in=B);
by STRATUM;
if A and B;
sam_rat=samcnt/frmcnt;
bwt=frmcnt/samcnt;
run;

title5 'Sample count, Frame count, Sampling Ratio for STRATUM';
proc print data=bwt;
sum samcnt frmcnt framepct samplpct;
run;
* End of checking the sample ;


/*********The End*********/
```

BWT.SAS

```
*****************************************************************************
* PROGRAM: BWT.SAS (06663.200)
* TASK:    DoD Health Care Survey, Quarterly Sampling
* PURPOSE: Construct Sampling Weight for DOD (HCSDB) Quarterly Survey
*
* INPUTS:  FRAMEA.sas7bdat - Frame for current quarter  DoD Survey
*          SAMPLA.sas7bdat - Internal Sample file for current quarter DoD
*                            Survey
*
* OUTPUTS: BWT.sas7bdat - Sampling Weight  for current quarter DOD Survey
*****************************************************************************;

options ls=132 ps=79 nocenter compress=yes ;

*Update Marcro Variable Quarter with current Quarter;
%let quarter=Q1FY2012;

libname in   "L:\&quarter.\Data\AFinal";
libname out  "L:\&quarter.\Data\AFinal";
libname inv8 "L:\&quarter.\Data\AFinal";

%include "L:\&QUARTER.\Programs\Sampling\design_effects_unequal_weights.sas";


title1 "Program: BWT.SAS (&quarter.)";
title2 "Construct the Sampling Weight (BWT) from FRAMEA and SAMPLA";

*_____
Calculate the bwt
_____;

title5 'Information from the Frame';
proc freq data=in.framea noprint;
table stratum / list missing out=frame(keep = stratum count rename = (count =
Fcnt_str) );
run;

title5 'Information from the Sample';
proc freq data=in.sampla noprint;
table stratum / list missing out=sample(keep = stratum count rename = (count
= Scnt_str) );
run;

proc sort data=frame;
by stratum;
run;

proc sort data=sample;
by stratum;
run;

data weight;
merge frame sample;
by stratum;
bwt = Fcnt_str/ Scnt_str;
run;
```

```
title5 'Information for the Sampling Weight';
proc print data=weight;
var stratum Fcnt_str Scnt_str bwt;
sum Fcnt_str Scnt_str;
run;

***Append the bwt to the sample;
data wt;
set weight (keep = stratum bwt);
run;

proc sort data=wt;
by stratum;
run;

proc sort data=in.sampla out=sample;
by stratum;
run;

data bwt wonly sonly problem;
merge wt (in=inw) sample (in=ins);
by stratum;

if pnsexcd = "M" then sexsmpl = 1;
  else if pnsexcd = "F" then sexsmpl = 2;
  else if pnsexcd in ("Z"," ") then sexsmpl = 1;
  else sexsmpl = 3;

if svccd = "A" then svcsmpl = 1;
  else if svccd = "N" then svcsmpl = 2;
  else if svccd = "M" then svcsmpl = 3;
  else if svccd = "F" then svcsmpl = 4;
  else if svccd = "C" then svcsmpl = 5;
  else svcsmpl = 6;

if inw = 1 and ins = 1 then output bwt;
  else if inw = 1 and ins = 0 then output wonly;
  else if inw = 0 and ins = 1 then output sonly;
  else output problem;

run;

title5 'Check the Constructed Variables';
proc freq data=bwt;
tables pnsexcd*sexsmpl svccd*svcsmpl / list missing;
run;

title5 'Information for the Sampling Weight';
proc univariate data=bwt normal plot;
var bwt;
run;

* Added by Amang 2/6/07: comparing weights across strata ;
proc sort data=bwt ;
by stratum ;
run ;
proc means data=bwt noprint ;
```

```
by stratum ;
var bwt ;
output out=w n=sampsize min=min_bwt max=max_bwt mean=mean_bwt ;
run ;
proc print data=w ;
var stratum sampsize min_bwt max_bwt mean_bwt ;
run ;
******;

data inv8.bwt;
set bwt;
geosmpl=substr(stratum,2,4);
ebsmpl=substr(stratum,6,2);
label bwt = 'Sampling Weight';
run;

title5 'Checks for BWT Data Set';
proc means data=inv8.bwt n sum;
var bwt;
run;

title5 'Contents of the Sampling Weight Data Set';
proc contents data=inv8.bwt;
run;


*_____
Check the bwt
_____;

%macro checkvar(input_data, sorting_variable, weighting_variable);

data framea;
set in.framea;
geosmpl=substr(stratum,2,4);
ebsmpl=substr(stratum,6,2);
run;

title5 'Freq of &sorting_variable. from the Frame';
proc freq data=framea noprint;
table &sorting_variable.
/ list missing out=frame(keep = &sorting_variable. count rename = (count =
pop) );
run;

proc means data=&input_data. n sum noprint;
class &sorting_variable.;
var &weighting_variable.;
output out=bwtchk  n = sampcnt sum = bwtsum;
run;

data bwtchk;
set bwtchk;
where _type_ = 1;
run;
```

```
proc sort data=bwtchk;
by &sorting_variable.;
run;

data finalchk;
merge bwtchk frame;
by &sorting_variable.;
diff = pop - bwtsum;
run;

title5 "Final Checks for the Sampling Weight by &sorting_variable.";
proc print data=finalchk;
var &sorting_variable. sampcnt bwtsum pop diff;
sum sampcnt bwtsum pop diff;
run;

proc univariate data=finalchk;
var diff;
run;

%mend checkvar;

%checkvar(inv8.bwt, stratum, bwt);
%checkvar(inv8.bwt, group, bwt);
%checkvar(inv8.bwt, geosmpl, bwt);
%checkvar(inv8.bwt, ebsmpl, bwt);
%checkvar(inv8.bwt, enbgsmpl, bwt);
%checkvar(inv8.bwt, grp_geo, bwt);


***********************************;
*** Calculate the Design Effects ***;
***********************************;
%design_effects_unequal_weights ( inv8.bwt, stratum, bwt, deff_overall,
deff_stratum );
%design_effects_unequal_weights ( inv8.bwt, group, bwt, deff_overall,
deff_group );
%design_effects_unequal_weights ( inv8.bwt, geosmpl, bwt, deff_overall,
deff_geosmpl );
%design_effects_unequal_weights ( inv8.bwt, ebsmpl, bwt, deff_overall,
deff_ebsmpl);
%design_effects_unequal_weights ( inv8.bwt, enbgsmpl, bwt, deff_overall,
deff_enbgsmpl);
%design_effects_unequal_weights ( inv8.bwt, grp_geo, bwt, deff_overall,
deff_grp_geo );
%design_effects_unequal_weights ( inv8.bwt, tnexreg, bwt, deff_overall,
deff_tnexreg );
%design_effects_unequal_weights ( inv8.bwt, patcat, bwt, deff_overall,
deff_patcat );
%design_effects_unequal_weights ( inv8.bwt, servaff, bwt, deff_overall,
deff_servaff );

proc print data = deff_overall;
title5 "design effect overall";
run;
```

```
proc print data= deff_stratum;
title5 "design effect by stratum";
run;

proc print data= deff_group;
title5 "design effect by group";
run;

proc print data= deff_geosmpl;
title5 "design effect by geosmpl";
run;

proc print data= deff_ebsmpl;
title5 "design effect by ebsmpl";
run;

proc print data= deff_enbgsmpl;
title5 "design effect by enbgsmpl";
run;

proc print data= deff_grp_geo;
title5 "design effect by geosmpl";
run;

proc print data= deff_tnexreg;
title5 "design effect by TNEXREG";
run;

proc print data= deff_patcat;
title5 "design effect by PATCAT";
run;

proc print data= deff_servaff;
title5 "design effect by SERVAFF";
run;
************* The End ****************;
```

DESIGN_EFFECTS_UNEQUAL_WEIGHTS.INC

```
    *************************************************************************
    Name:
    design_effects_unequal_weights

    Purpose:
    Calculate the design effects due to unequal weights.  Creates two data sets.
    One data set contains the overall design effect and the information used to
    calculate the design effect.  The other data set contains the design effects
    for each category of the analysis variable and the information used to
    calculate these design effects.  In the two data sets, the additional
    information refers to the number of observations, the sum of the squared
    weights, and the sum of the weights squared.

    Programmer:
    Darryl V. Creel

    Parameters:
    There are five:
        (1) in_data_set - The input data set.
        (2) analysis_variable - The analysis variable contains the categories
                                  by which the design effects are calculated.
        (3) weight_variable - The weight variable.
        (4) out_overall_data_set - Name of the data set that contains the
                                      overall design effect.
        (5) out_data_set - Name of the output data set that contains the
                              design effects for each category of the analysis
                              variable.

    Output:
    There are two data sets:

        (1) A data set that contains the overall design effect and the
            information used to calculte the overall design effect.  It
            includes observations that have a missing value for the analysis
            variable.  This data set is named by the out_overall_data_set
            parameter.

        (2) A data set that contains the design effects for each category
            of the analysis variable and the information used to calculate
            these design effects.  There is one observation for each category
            of the analysis variable, including a missing category, if there
            are missing values for the analysis variable. This data set is
            named by the out_data_set parameter.

    Notes:

        (1) Use with SAS V8.

        (2) Do NOT use the following variable names as parameters:
            (a) _weight_variables
            (b) _overall_design_effect
            (c) _design_effect.
    *************************************************************************;

    %macro design_effects_unequal_weights
       ( in_data_set,
         analysis_variable,
```

```
        weight_variable,
        out_overall_data_set,
        out_data_set );

    data _weight_variables;
        set &in_data_set. ( keep = &analysis_variable. &weight_variable. );
        &weight_variable._sq = &weight_variable. * &weight_variable.;
    run;

    proc means data = _weight_variables missing noprint;
        var &weight_variable. &weight_variable._sq;
        output out = _overall_design_effect
                sum ( &weight_variable. &weight_variable._sq ) =
                sum_&weight_variable. sum_&weight_variable._sq;
    run;

    data &out_overall_data_set.;
        set _overall_design_effect ( drop = _type_ );
        design_effect = ( _freq_ * sum_&weight_variable._sq ) / (
sum_&weight_variable. * sum_&weight_variable. );
    run;

    proc sort data = _weight_variables;
        by &analysis_variable.;
    run;

    proc means data = _weight_variables missing noprint;
        var &weight_variable. &weight_variable._sq;
        by &analysis_variable;
        output out = _design_effect
                sum ( &weight_variable. &weight_variable._sq ) =
                sum_&weight_variable. sum_&weight_variable._sq;
    run;

    data &out_data_set.;
        set _design_effect ( drop = _type_ );
        design_effect = ( _freq_ * sum_&weight_variable._sq ) / (
sum_&weight_variable. * sum_&weight_variable. );
    run;

    proc datasets;
        delete _weight_variables _overall_design_effect _design_effect;
    run;

%mend design_effects_unequal_weights;
```

SAMPLA02.SAS

```
****************************************************************************
* PROGRAM:  SAMPLA02.SAS
* TASK:     DOD Health Care Survey, Sampling (06663.200)
* PURPOSE: Attach DEERS variables to FORM A Sample, Step 2
*
* WRITTEN:  10/23/2000 by K Rathbun
*
* MODIFIED: 1) 06/29/2004 by K Rathbun, removed references to PNARSNCD,
*              PNMIDNM, SPTNUMCD, and TNUMCD since they are no longer
*              available on the STI-provided DEERS extract. Added PTNT_ID
*              to sorting and mergeing to utilize the revised XWALK file.
*           2) 08/01/2005 by R Gramss, reassigned PCM value based on
*              ACV code - to mimic what was done in EXTRACT.SAS. This was
*              done specifically for Q4 2005, should check with STI to
*              see if this should be repeated for subsequent quarters.
*           3) 11/15/2005 by R Gramss, updated PCM value assignment
*              to reflect changes in EXTRACT.SAS. Added STI005.SD2 (ONLY
*              FOR THIS QUARTER) to include the Katrina supplement file.
*           4) 10/18/2006 by S Andrecheck for Q2 2007 changed input files to
*              DEERS instead of old contractor name (STI).
*           5) 02/18/2008 by K Rathbun, dropped unnecessary sampling
*              variables.
*           6) 07/29/2011 by A Borgen for Q1FY2012 removed 42 overlap cases
*              with TSS2011.
*
* INPUTS:
* 1) SAMPLA01.sas7bdat - DOD FORM A Sample from SIS
* 2) XWALK.sas7bdat
* 3) DOD DEERS Extract File
*    a) DEERS001.sas7bdat - DEERS Population Extract File (Part 1)
*    b) DEERS002.sas7bdat - DEERS Population Extract File (Part 2)
*    c) DEERS003.sas7bdat - DEERS Population Extract File (Part 3)
*    d) DEERS004.sas7bdat - DEERS Population Extract File (Part 4)
*
* OUTPUTS:
* 1) SAMPLA02.sas7bdat - DOD FORM A Sample combined with DEERS extract
* 2) Sampla02_AD_email.xls - All active duty file to be sent to DMDC by Rich
*                            for email address
****************************************************************************;

%LET QUARTER=Q1FY2012;

LIBNAME INr "K:\&QUARTER.";  /* DEERS001-DEERS004.sas7bdat, xwalk.sas7bdat */
LIBNAME IN  "L:\&QUARTER.\DATA\AFINAL"; /* sampla01.sas7dat */
LIBNAME OUT "K:\&QUARTER.";             /* sampla02.sas7dat */

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

TITLE1 "DOD Health Care Survey Sampling (&QUARTER.)";
TITLE2 "PROGRAM: SAMPLA02.SAS";

*Update the path for the include file/Delete if not needed;
%LET pathlayout=L:\&QUARTER.\Programs\Sampling;
```

```
*****************************************************************************
* Attach PTNT_ID variable and keep only the sampled records.
*****************************************************************************;
PROC SORT DATA=INr.XWALK    OUT=XWALK;    BY MPRID; RUN;
PROC SORT DATA=IN.SAMPLA01 OUT=SAMPLA01; BY MPRID; RUN;

DATA SAMPLA02;
   MERGE XWALK(IN=IN1) SAMPLA01(IN=IN2);
   BY MPRID;
   IF IN1 AND IN2;
RUN;

PROC SORT DATA=SAMPLA02; BY PTNT_ID; RUN;

%MACRO PROCESS(DSN=);
*****************************************************************************
* COMBINE each part (1-4) of the address/extract information file with
* sample file information.  DROP sampling variables (already on the file).
*****************************************************************************;
PROC SORT DATA=INr.&DSN
    (DROP=MDCABRSN MDCAEFDT MDCAEXDT)
    OUT=TEMP;
    BY PTNT_ID;
RUN;

*****************************************************************************
* MERGE the DEERS extract file information with the Form A Sample by PTNT_ID.
*****************************************************************************;
DATA &DSN;
   MERGE TEMP(IN=IN1) SAMPLA02(IN=IN2);
   BY PTNT_ID;
   IF IN1 AND IN2;
RUN;

*****************************************************************************
* DELETE temporary dataset to conserve disk space.
*****************************************************************************;
PROC DATASETS; DELETE TEMP; RUN;

%MEND PROCESS;

%PROCESS(DSN=DEERS001);
%PROCESS(DSN=DEERS002);
%PROCESS(DSN=DEERS003);
%PROCESS(DSN=DEERS004);

*****************************************************************************
* STACK the combined DEERS extract/sample file information into one dataset.
*****************************************************************************;
DATA SAMPLA02;
   SET DEERS001 DEERS002 DEERS003 DEERS004;
   BY PTNT_ID;
   * 02/18/2008 - KRR added the following to clean up the file;
   DROP SURVEY TNEXREG_OLD ZIP_TEMP grp_temp north oconus randomnum south;
RUN;
```

```
****************************************************************************
* SORT the combined DEERS extract/sample file information by PTNT_ID
* to check for duplicates.
****************************************************************************;
PROC SORT DATA=SAMPLA02 NODUPKEY; by PTNT_ID;  RUN;



****************************************************************************
                    :Q1FY2012: Overlap with TSS 2011 Survey:
*    Excluding 42 Overlap Cases between Q1FY2012 and TSS 2011 Samples   *
****************************************************************************;
DATA SAMPLA02;
 SET SAMPLA02;
 %INCLUDE "&pathlayout.\OverlapTSS2011.SAS"; *Q1FY2012;
RUN;


****************************************************************************
* SORT the combined DEERS extract/sample file information by MPRID.
****************************************************************************;
*note: need to update E* for each quarter, Q1FY2012=E44;
PROC SORT DATA=SAMPLA02 OUT=OUT.SAMPLA02 (DROP = E1-E44 ESR1-ESR44 DELGIND
RSVCC); BY MPRID; RUN;

PROC CONTENTS; RUN;

PROC FREQ DATA=OUT.SAMPLA02
     (DROP=
         DMDCSPON
         PTNT_ID
         MALN1TX
         MALN2TX
         MACITYNM
         MAPRZIP
         MAPRZIPX
         TNUMCD
         MPRID
         PN1STNM
         PNBRTHDT
         PNID
         PNLSTNM
         PRN
         SPCITYNM
         SPLN1TX
         SPLN2TX
         SPONSSN
         SPPRZIP
         SPPRZIPX
         SPTNUMCD
         UICADD1
         UICADD2
         UICCITY
         UICZIP
         D_UPDT
         C_ADDR1
         C_ADDR2
         C_ADDR3
         C_CITY
```

```
        C_HMFON
        C_NAME1
        C_NAME2
        C_STATE
        C_UPDT
        C_ZIP
        );
    TABLES _ALL_ /MISSING LIST;
RUN;


/*Output all active duty to an excel with sponssn attached.
This will be sent to Rich, who will send it to DMDC for the email address*/
proc freq data=OUT.sampla02;
tables patcat/missing list;
run;

LIBNAME outxls excel "K:\&quarter.\Sampla02_AD_email.xls";
data outxls.hcsdb12q1(drop=patcat);  *<== Q1FY2012: File name Updated;
    set OUT.sampla02(keep=sponssn mprid patcat rename=sponssn=ID);
    where patcat='ACTDTY';
run;

libname outxls clear ;
```

APPENDIX F

TECHNICAL BACKGROUND IN DETERMINING THE SAMPLE SIZES

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Technical Background for the Algorithm

To attain the required half length *HL* for confidence intervals, the required sample size *n* was obtained while incorporating finite population correction factors that recognized variable sampling rates across sampling strata.

For a simple random sample (SRS) of size *n* from a finite population of size *N*, the variance of a sample proportion *p* is:

(F.1)
$$V_{SRS}(p) = \frac{P(1-P)}{n} \left(\frac{N-n}{N-1} \right)$$

where *P* denotes the population proportion. Because the expected sample sizes for all strata for the FY2012 HCSDB survey are sufficiently large, the standard formula (4.1) in Chapter 4 can be used in constructing the confidence interval of *P*. Let *B* denote the required half-length interval for *P*. Using formula (F.1) for the simple random sample variance of *p*, the precision requirement *B* can be represented by the following equation:

(F.2)
$$B = z_{1-\alpha/2} \sqrt{\frac{P(1-P)}{n} \left(\frac{N-n}{N-1} \right)}$$

Consequently, the sample size to attain the precision requirement *B* can be determined by solving equation F.2 with respect to *n* as follows:

(F.3)
$$n = \frac{\dfrac{z_{1-\alpha/2}^2 \ [P(1-P)]}{B^2}}{1 + \dfrac{1}{N} \left(\dfrac{z_{1-\alpha/2}^2 \ [P(1-P)]}{B^2} - 1 \right)}$$

This formula was used as the first step in determining initial sample sizes for all strata in the 2012 HCSDB.

Note from formula (F.3), sample sizes vary according to values of the proportion *P*. As the value of *P* becomes closer to 0.5, *n* becomes larger. Because proportions of interest for this survey could have values ranging from zero to one, the resulting sample sizes lie within a wide range of values with the largest value associated with *P*=0.5. For sample size determination, we used a proportion value of *P*=0.5, which ensures that the sample size will be large enough to meet or exceed the predetermined precision requirement for all proportions to be estimated.

Since the sample size is being defined to construct a 95 percent interval for P = 0.5 with a half-length interval less than or equal to B, $z_{1-\alpha/2}$ can be replaced with $z_{.975}$ which is 1.96. Formula (F.3) can then be specified as the following:

$$\text{(F.4)} \qquad n = \frac{\dfrac{.9604}{B^2}}{1 + \dfrac{1}{N}\left(\dfrac{.9604}{B^2} - 1\right)}$$

where .9604 was obtained from $z^2_{0.975}\, P(1-P)$ with $P = 0.5$. The formula (F.4) can then be applied to determine the sample size to achieve B in estimating stratum-level estimates.

Recall that the 2012 HCSDB employs a stratified sample design. Since we wish to estimate the proportion of beneficiaries from domain d having a certain characteristic. An estimate of the proportion P_d can be obtained as the weighted sum of stratum-level proportion estimates:

$$\text{(F.5)} \qquad p_d = \sum_{h=1}^{H} \frac{N_{dh}}{N_d}\, p_{dh},$$

where N_{dh} is the population size of domain d for stratum h, N_d is the sum of N_{dh} over all strata, and p_{dh} is the estimated proportion for the h-th stratum. Since the sampling is independent across strata, the variance of estimated proportion p_d is the sum of stratum-level variances:

$$\text{(F.6)} \qquad V_d = \sum_{h \in d}\left(\frac{N_h}{N_d}\right)^2 \left(\frac{N_h - n_h}{N_h - 1}\right) \frac{P_h(1-P_h)}{n_h}$$

where n_h is the sample size in stratum h and P_h is the stratum-level proportion for stratum h. Like the single stratum case, all stratum-level proportions are assumed with 0.5, and thus the formula (F.6) can be reduced to the following:

$$\text{(F.7)} \qquad V_d = \sum_{h \in d}\left(\frac{N_h}{N_d}\right)^2 \left(\frac{N_h - n_h}{N_h - 1}\right) \frac{.25}{n_h}$$

The minimum sample size satisfying the requirements for a predetermined half-length interval B_d is:

$$\text{(F.8)} \qquad n_d = \frac{\left(\sum_{h \in d} \dfrac{N_h}{N_d}\sqrt{\dfrac{N_h}{N_h - 1}}\sqrt{P_h(1-P_h)}\right)^2}{\dfrac{B_d^2}{z^2_{1-\alpha/2}} + \sum_{h \in d}\dfrac{N_h^2}{N_d^2}\left(\dfrac{1}{N_h - 1}\right)P_h(1-P_h)}$$

With the same specifications above, formula (F.8) can be specified as:

$$
(F.9) \qquad n_d = \frac{.25\left(\sum_{h\in d}\frac{N_h}{N_d}\sqrt{\frac{N_h}{N_h-1}}\right)^2}{\dfrac{B_d^2}{3.8416} + .25\sum_{h\in d}\dfrac{N_h^2}{N_d^2}\dfrac{1}{N_h-1}} \, ,
$$

where $P_h(1-P_h) = (.5)(.5) = 0.25$ for all h and $z_{.975}^2 = 3.8416$.

The stratum sample size n_h is based on the following optimal stratum sample sizes:

$$
(F.10) \qquad n_h = n_d\,\frac{N_h\sqrt{\dfrac{N_h}{N_h-1}}\sqrt{P_h(1-P_h)}}{\sum_{h\in d}N_h\sqrt{\dfrac{N_h}{N_h-1}}\sqrt{P_h(1-P_h)}}
$$

Likewise, this formula becomes

$$
(F.11) \qquad n_h = n_d\,\frac{N_h\sqrt{\dfrac{N_h}{N_h-1}}}{\sum_{h\in d}N_h\sqrt{\dfrac{N_h}{N_h-1}}}
$$

After the stratum size for eligible respondents was finally determined, an anticipated response rate R was incorporated to get the final stratum sample size[11]:

$$
(F.12) \qquad n_{h,F} = \frac{n_h}{R}
$$

We used the unweighted response rates from the third quarter of 2011 HCSDB response rates for beneficiary groups as the expected response rates R.

---

[11] For some strata we also inflated the sample size by the exptected proportion of valid respondents in certain analytic domains.

APPENDIX G

STRATIFICATION SCHEME

HCSDB FY2012 Q1 SAMPLING SCHEME

GROUP=1
MTF enrollees

MTF 1~113 (hl=0.12)

North (hl=0.06)

South (hl=0.06)

West (hl=0.06)

Overseas (hl=0.06)

2 or 3 beneficiariy groups in each region level (no precision requirement)

GROUP=2
CIV enrollees

North (hl=0.06)

South (hl=0.06)

West (hl=0.06)

Overseas (hl=0.06)

Collapse to MTF enrollees overseas due to the small population in civilian enrollees overseas under 65

Under 65

GROUP=3
Non-enrollees

North

ADFM (hl=0.10)

Retiree (hl=0.10)

South

ADFM (hl=0.10)

Retiree (hl=0.10)

West

ADFM (hl=0.10)

Retiree (hl=0.10)

Overseas

ADFM (hl=0.10)

Retiree (hl=0.10)

FRAME

GROUP=6
65 or older

North (hl=0.06)

South (hl=0.06)

West (hl=0.06)

Overseas

Collapse to South, since there is not enough population overseas for GROUP=6, therefore, it is combined with the region with the lowest sampling rate

GROUP=0
TRICARE Reserve Select (hl=0.12)

NOTE:
1) hl=0.12 for 113 MTFs is to meet the precision for annual level estimate with 6% of HL
2) In GROUP=2, 80% of the sample is expected to be users of Managed Care Support Contractors, 73% and 92% for ADFM and Retirees respectively.
3) In GROUP=3, 1/3 of the sample is expected to be Standard Extra Users, 45.5% and 27.5% for ADFM and Retirees respectively.

G-3