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GMP - Comparing Region 6 Catchment Area Enrolled Non-Active Duty Populations in Terms of Demographics and Health Status

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Data from 31,090 Health Enrollment Assessment Review (HEAR) surveys sponsored by the Department of Defense, were sampled from all beneficiaries residing in Health Services Region 6. Phase I consisted of a correlation matrix done on self-reported health status, resource utilization level and primary care level to determine if these items were measuring similar health statuses. Results suggested all three measures were measuring somewhat similarly. Phase II used a one-way analysis of variance (ANOVA) and Tukey's test of significant differences to determine which catchment areas in Region 6 were significantly different in terms of health status and certain demographics. Region 6 were significantly similar were grouped together resulting in five new groups. Significant drawbacks to the study include: (1) the exclusion of beneficiaries over 65 and under 18, (2) only beneficiaries enrolled in the health maintenance organization (HMO) product were surveyed, (3) only beneficiaries in one of twelve catchment areas were included, and (4) the HEAR survey has never been validated.

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ABSTRACT

Data from 31,090 Health Enrollment Assessment Review (HEAR) surveys sponsored by the Department of Defense, were sampled from all beneficiaries residing in twelve catchment areas of Health Services Region 6. Phase I consisted of a correlation matrix done on self-reported health status, resource utilization level and primary care level to determine if these three items were measuring similar health statuses. Results suggested all three measures were measuring somewhat similarly. Phase II used a one-way analysis of variance (ANOVA) and Tukey's test of significant differences to determine which catchment areas in Region 6 were significantly different in terms of health status and certain demographics. Some catchment areas were significantly different from the other eleven while others had no significant differences. Those catchment areas which were significantly similar were grouped together resulting in five new groups to use for planning and resourcing decisions in the future. Significant drawbacks to the study include: (1) the exclusion of beneficiaries over 65 and under 18, (2) only beneficiaries enrolled in the health maintenance organization (HMO) product were surveyed, (3) only beneficiaries in one of twelve catchment areas were included, and (4) the HEAR survey has never been validated.

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INTRODUCTION

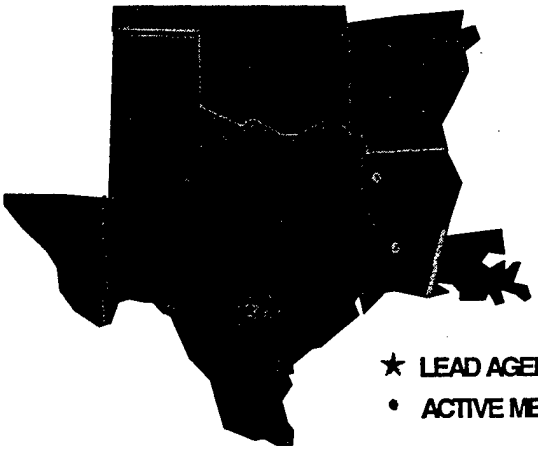

Figure 1 - Region 6

This graduate management project will examine adult, enrolled, non-active duty, Military Health Services System (MHSS) beneficiary populations in twelve catchment areas of Health Services Region 6. Health Services Region 6 (Region 6) is comprised of Arkansas, Texas (except the El Paso area), Louisiana (except the New Orleans area) and Oklahoma (see Figure 1). There are approximately 727,700 adult MHSS beneficiaries in Region 6 and 210,672 were enrolled in TRICARE Prime as of 30 September 1996 (Shen and Latta 1996, Foundation 1996). The twelve military treatment facility (MTF) catchment areas used in this study had 80,511 adult non-active duty beneficiaries enrolled in TRICARE Prime as of September 30, 1996 (Wiseman 1996).

Conditions Which Prompted the Study

Health care costs have risen significantly in the United States over the past two to three decades. In many years, the growth of health care costs out paced the growth in the overall economy (Sonnefeld, et al 1991, US Dept. of Commerce 1991). The Civilian Health and Medical Program of the United States (CHAMPUS) budget was growing quickly also. CHAMPUS is an idemnity plan, started in 1966, for MHSS beneficiaries. More specifically, it covers family members of active duty, retirees and their family members under age sixty-five. The MHSS responded in the 1980s with two demonstration programs: the CHAMPUS Reform Initiative (CRI) and Catchment Area Management (CAM).

CRI appeared in 1988 and covered California and Hawaii. The demonstration assumed MTF commanders (and their staffs) did not have the expertise to practice good managed care in their catchment areas. Hence, a contractor was hired to handle everything outside the MTF walls. The contractor was paid with monies that would have gone through the CHAMPUS system (Manchester 1996). A RAND study found CRI did improve access and satisfaction but costs increased faster than projected. The higher cost was attributed to increases in utilization (primarily retirees and their families) and large overhead (Hasek 1992).

In contrast, CAM assumed MTF commanders (and their staffs) *did* have the expertise and resources to implement managed care for their catchment areas. MTF commanders were given the authority to manage not only their traditional operations and maintenance (O&M) budget but also the CHAMPUS budget for their catchment area. Commanders also had the freedom to contract out services and some civilian personnel polices were relaxed. CAM demonstration

areas included Bergstom Air Force Base (AFB) in Austin, Texas; Luke AFB in Phoenix, Arizona; Fort Sill, Oklahoma; Fort Carson, Colorado; and Naval Hospital Charleston, Charleston, South Carolina. (Manchester 1996).

In the early 1990s, the MHSS was still experiencing rapidly rising costs and more pressure to downsize. In response, the MHSS began implementing a mixture of the CAM and CRI demonstrations called TRICARE. However, TRICARE is not a demonstration; it is a full-fledged managed care initiative to control costs and improve access. TRICARE offers three options to beneficiaries: TRICARE Prime, TRICARE Extra and TRICARE Standard. TRICARE Prime is a Health Maintenance Organization (HMO) type product and requires beneficiaries to enroll. TRICARE Extra is a Preferred Provider Organization (PPO) type product and TRICARE Standard resembles standard indemnity insurance. Neither of the last two options require enrollment.

The MHSS has been working toward more data-driven decision making and planning. Efforts such as reengineering, rightsizing and total quality management, in addition to managed care, have been key to changing the very culture of the MHSS. Management staffs have begun to demand more information instead of just reams of data.

Statement of Problem

Decreasing MHSS budgets for both operations and personnel, coupled with rising health care costs, necessitate more efficient and effective delivery of care. Data-driven knowledge about beneficiaries is critical to delivering care in this environment. The problem is MHSS

region staffs do not have detailed and analyzed information about enrolled beneficiary demographics or health status.

Purpose

This research project's purpose is to build knowledge of the region's enrolled patient demographics and health status. This knowledge would enable the multiple organizations and managers in Region 6 to tailor marketing strategies to either new markets or expand existing markets. The results would also be of benefit to the strategic planners when they are crafting the future MHSS benefit package. Though the MHSS is transitioning from a partially capitated financing method to a more traditional captitated method in fiscal year 1998, future resource allocation may also consider the actual needs of the beneficiary population. The initial captitated rate may need to be adjusted if actual beneficiary need is significantly different.. Measuring differences in catchment area needs at this time could establish a baseline for future comparisons.

Hypotheses

- Null Hypothesis 1: The enrolled Region 6 population is not significantly healthier (predicted to use less resources) in any particular catchment area.

  Self-reported health status ≠ F(catchment area)

  Resource Utilization Level ≠ F(catchment area)

  Primary Care Level ≠ F(catchment area)

- Alternate Hypothesis 1: The enrolled Region 6 population is significantly healthier (predicted to use less resources) in a particular catchment area.

Self-reported health status = F(catchment area)

Resource Utilization Level = F(catchment area)

Primary Care Level = F(catchment area)

- Null Hypothesis 2: The enrolled Region 6 population demographics are not significantly different among the different catchment areas.
- Alternate Hypothesis 2: The enrolled Region 6 population demographics are significantly different among the different catchment areas.

Variables

Nine variables were used in this study, one independent variable and eight dependent variables. The independent variable was the catchment area because the study compared the catchment areas to determine where the significant differences occurred. The dependent variables were as follows: primary care level, resource utilization level, self-reported health status, age, gender, marital status, race/ethnic origin and beneficiary status.

Literature Review

Studies comparing characteristics of enrolled versus non-enrolled groups have documented for the most part a favorable selection bias for HMOs (Hellinger 1995). Most of these studies compared the use of medical resources by patients in the period of time before enrollment selection to the use of medical resources by patients electing to stay with traditional indemnity insurance. Hellinger attributes this to "individuals who consume large amounts of health resources often are unwilling to sever ties with their health care providers." However, a study

using the 1992 National Health Interview Survey found chronically ill patients (under age 65) are not under represented in HMOs. The study even controlled for health status and some sociodemographic factors (Fama, Fox and White 1995).

It is essential to keep in mind this possible selection bias when evaluating the results of this particular study. This study will not attempt to generalize results to the MHSS beneficiary population as a whole.

A study in 1992 found a strong correlation between health-related measures and future medical care costs (Yen, Edington, and Witting 1992). A second study in 1994 found health risk measures were the best predictors of high-cost users. Marital status was also found to be a significant variable. Employees who were married, had a lower cost status than non-married employees (Yen, Edington, and Witting 1994). Older smokers were found to be significantly higher users of medical resources in a study done in 1990 (Freeborn et al. 1990a). MHSS beneficiaries over the age of 65 were excluded from this study because they are not eligible for TRICARE Prime. However, smoking may also be a significant factor for beneficiaries under age 65 and it is included in the HEAR Survey discussed later. If beneficiaries over age 65 are included in TRICARE Prime in the future, smoking status may be an even better predictor of cost for the MHSS population. This may be true similarly for outpatient use, hospitalization rates and total number of medical conditions (Freeborn et al. 1990b). The MHSS will conduct a test program in 1997, allowing beneficiaries over age 65 to join TRICARE's Prime Senior Option.

Much research has been conducted concerning patient satisfaction and HMOs. Some of this research has linked self-reported health status and patient satisfaction. Hall, Milburn and Epstein

found self-reported higher health status often leads to higher levels of satisfaction. The reverse, high satisfaction leads to better self-reported health status, was not found to be significant. Their study was done on elderly patients enrolled in a HMO (Hall, Milburn, & Epstein 1993). A study by Fincham and Wertheimer also found a positive link between the patient's self-reported health and satisfaction (Fincham and Wertheimer 1986). This is important because other studies have found a positive relationship between satisfaction and physician-patient continuity (Pope 1978).

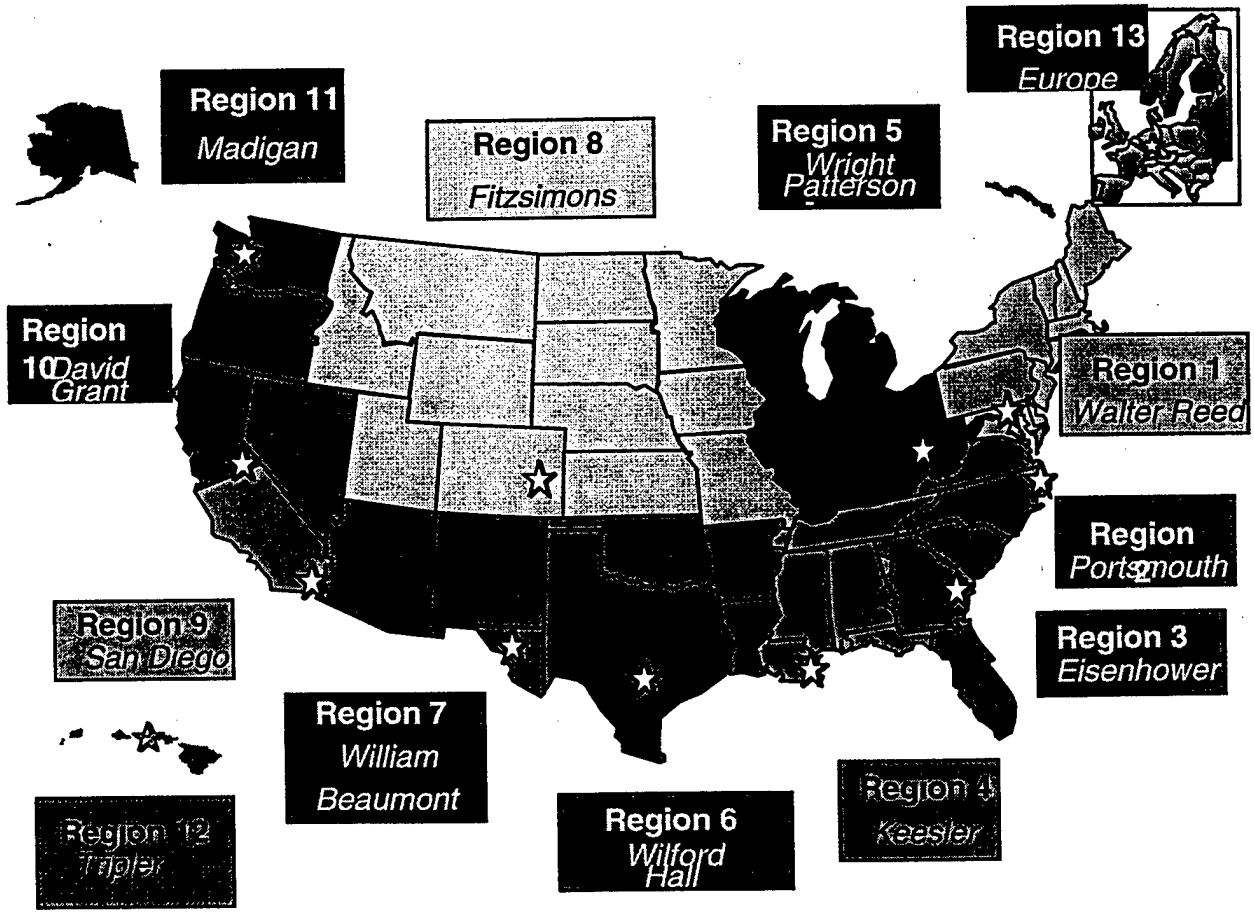

Figure 2 - DoD Health Services Regions

TRICARE is the Department of Defense's (DoD's) reorganization of the health care delivery system. Care is delivered by a mixture of military resources and civilian contract resources. The continental United States was divided into eleven regions with the Pacific and European areas making up the last two regions (Figure 2). Managed Care Support contracts have been awarded for ten of the regions so far and the contractors have begun health care delivery in eight regions (see Table 1).

Table 1 - Contract Start Dates

Region(s)	Contract Awarded?	Start of Health Care Delivery
1	No	Nov-97
2,5	No	Sep-97
3,4	Yes	Jul-96
6	Yes	Nov-95
7,8	Yes	Apr-97
9,10,12	Yes	Apr-96
11	Yes	Mar-96
13	Yes	Oct-96

Beneficiaries identified as "high cost users" were initially targeted for enrollment into TRICARE Prime. The top 5 percent of Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) users for CY94 were sent enrollment packages and information regarding TRICARE Prime. In addition, all active duty family members (ADFMs) were sent enrollment packages. However, because the database with active duty family member addresses was suspected to be somewhat inaccurate, it must be assumed that some active duty family members did not receive any information (Wiseman 1996). Figure 3 shows enrollment by beneficiary category and catchment area. According to the contractor's enrollment plan (in part) for Region 6, the "overall strategy is to increase enrollment penetration within each catchment or noncatchment area of the TRICARE user population ..." (Foundation Health Federal Services,

Inc. 1996). There are four categories of beneficiaries targeted with the above goal in mind: (1) current TRICARE Prime enrollees, (2) non-enrolled TRICARE Extra participants, (3) non-enrolled TRICARE Standard participants, and (4) non-enrolled MTF-reliant beneficiaries (Foundation Health Federal Services, Inc. 1996). Once beneficiaries are enrolled, they are locked in for twelve months unless they are moved by the government to a region where TRICARE Prime is not available.

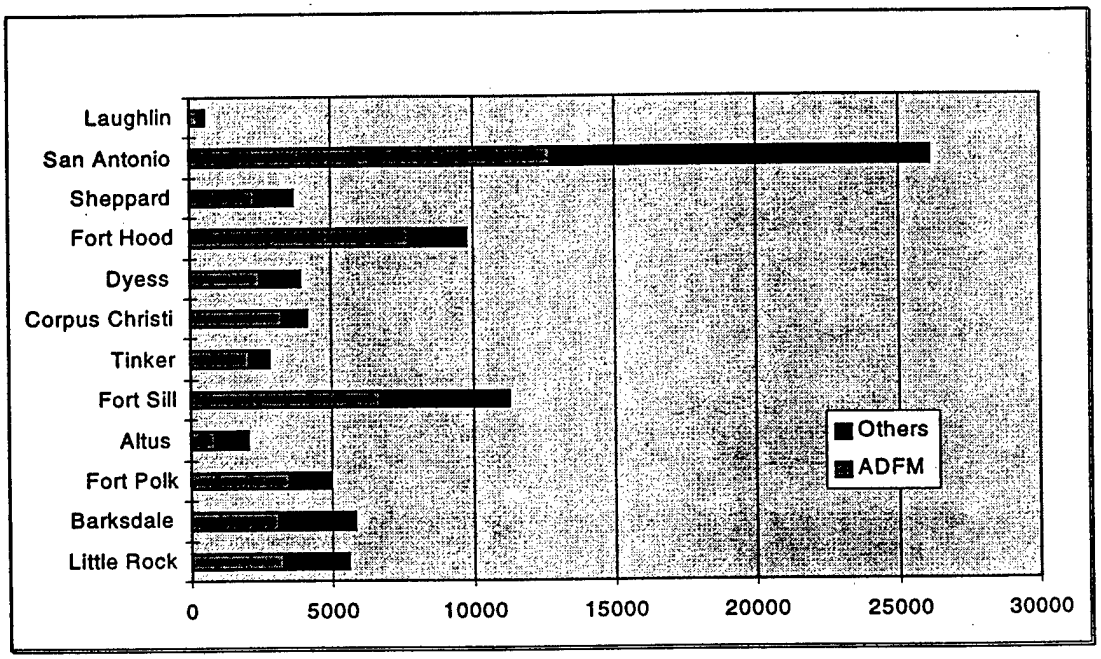

Figure 3 - Enrollment by Beneficiary Category and Catchment Area

HEAR Survey

Beneficiaries who are enrolled in TRICARE Prime are asked to complete a questionnaire called the Health Enrollment Assessment Review (HEAR) survey. The HEAR survey was primarily developed to be a "resource management tool" (Office for Prevention and Health Services Assessment [OPHSA] 1996). The primary care manager can use the HEAR data on his

or her assigned patients to tailor strategies for maintaining or improving the health of each individual. HEAR data is also used at a regional level to track various health issues such as: smoking rates, stress levels, physical activity levels and chronic condition rates. The survey itself takes only approximately 20 minutes to complete and consists of 82 questions. Appendix one is a copy of the HEAR questionnaire (OPHSA 1995).

In addition to gathering raw data, the HEAR instrument also calculates the patient's primary care level and their resource utilization level. The algorithm used to calculate the primary care level was developed by a physician panel and takes into account nine variables and resource utilization is measured with an algorithm that considers 17 variables. These variables are listed in Table 2 and the algorithms are described in appendix two (OPHSA 1995). Appendix three gives the HEAR instrument data dictionary.

Table 2 - PCL and Resource Utilization Level Variables

Primary Care Level	Resource Utilization Level
prescription medications	female
general health	single
mental health	self-rated health
outpatient utilization	high blood pressure
age	heart attack, heart disease/angina
chronic diseases	risky drinking behavior
emergency room visits	satisfaction with work and family
inpatient hospitalization	mental health
	absenteeism
	prescription medications
	outpatient visits
	inpatient visits
	bronchitis/emphysema
	arthritis
	current smoker
	emergency room visits
	stress

Though the HEAR survey was beta tested at four different sites in Region 6, the HEAR instrument has not been validated for the MHSS population. However, many of the questions

used in the survey have been shown to be valid in various other instances. A listing of other instruments used to develop the HEAR survey is provided in appendix B. A study by Yen, Edington and Witting used a tool similar to the primary care level and resource utilization level in the HEAR instrument. The tool used fifteen factors from a health risk assessment survey to classify employees into risk categories. It had acceptable reliability and validity scores (e.g. Cronbach's alpha was .60). In their study,

> female employees, or employees who negatively perceived their life, job, social support, health, and felt more stress, who had at least one health problem, . . . and who used drugs or medication frequently, were more likely to cost more in absenteeism and medical claims expenditures (Yen, Edington, Witting 1992)

While this does not prove the reliability or validity of the HEAR instrument, it does show a link between health status and resource utilization. According to John Ware, there is "considerable consensus regarding a *minimum* standard of comprehensiveness (content validity) in a health questionnaire." He goes on to list four components: (1) physical functioning, (2) mental health, (3) limitations in social and role functioning, and (4) general health perceptions (Ware 1994). The HEAR survey does cover these four areas and therefore may be considered to have at least some content validity. The HEAR Survey also uses a self-reported health status question from the Medical Outcomes Study (MOS) 36-Item short-form health survey (Ware and Sherbourne 1992). This question has been shown to be valid in this well-used survey instrument, even when used in foreign countries (Ware et al. 1995).

CHAPTER 2

METHOD AND PROCEDURES

This study draws from a population consisting of all adult DoD beneficiaries in Region 6 who enrolled in TRICARE Prime. All HEAR surveys collected from 1 November 1995 through 30 September 1996 were the initial sample. Surveys completed by active duty members were removed from the data set for two reasons: (1) the active duty response rate was extremely low (approximately 5 percent), and (2) the general good health of active duty members. Active duty members who are not in good health are removed from active duty in the Medical Board process

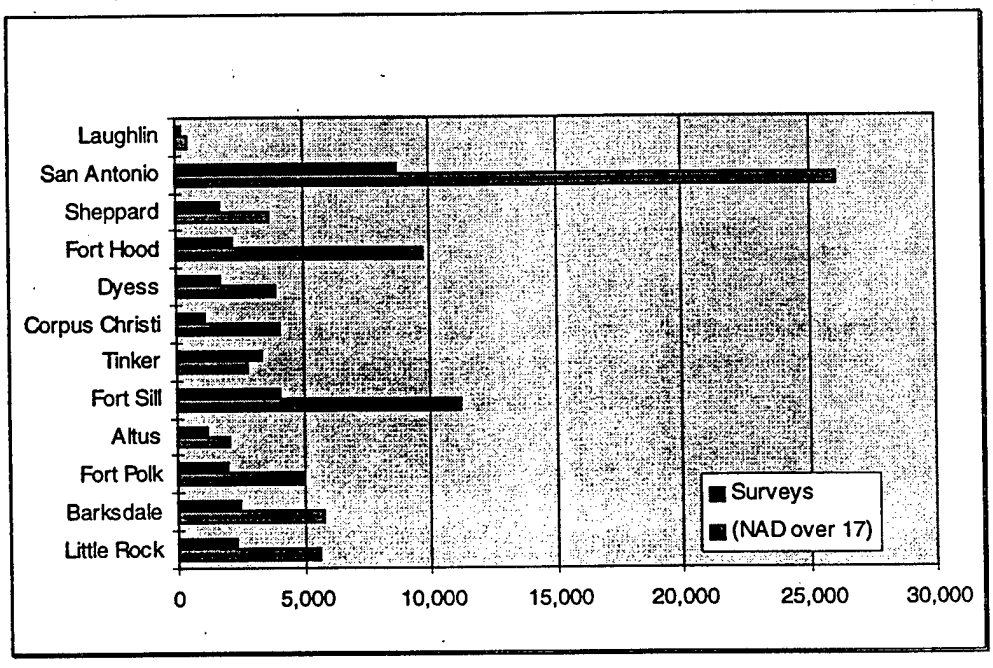

Figure 4 - Survey Response Compared to Enrollment

(Gibson 1996). Figure 4 compares the number of surveys received in each catchment area to the number of enrolled adult non-active duty beneficiaries. The study was limited to the twelve catchment areas with bedded MTFs for two reasons: (1) the data for the non-MTF and clinic MTF catchment areas were harder to get to and more inconsistent, and (2) the stated purpose was to facilitate future planning which will focus on bedded MTFs for the near future.

Data for Brooke Army Medical Center (BAMC) and Wilford Hall Medical Center (WHMC) were recoded into one group representing San Antonio. This was done because these two catchment areas overlap to a great extent and these medical centers have some joint ventures such as one centralized obstetrics service and some graduate medical education (GME) courses. A data map is presented in Table 3.

Table 3 - Data Map

HEAR Survey #	Operational Definition	Variable Name	Coding
	Catchment Area (DMIS Code)	catchmnt	see below
Calculated	Primary care level	pcl	1 = least complex 2= moderately complex 3 = most complex
Calculated	Resource utilization level	resource	1 = low 2= medium 3 = high
A1	Age at time of survey	age	over 17 and less than 65
A2	Gender	gender	0 = male 1 = female
A3	Marital status	marital	0 = never married 1 = married 2 = separated 3 = divorced 4 = widowed
A4	Race/ethnic origin	race	0 = white Hispanic 1 = white non-Hispanic 2 = black/African-American 3 = native American 4 = Asian/Pacific Islander 5 = other

HEAR Survey #	Operational Definition	Variable Name	Coding
A5	Beneficiary status	bene_cat	0 = active duty 1 = active duty family member 2 = retired 3 = retired/deceased family member 4 = other
A8	Self-reported health status	healthst	1 = excellent 2 = very good 3 = good 4 = fair 5 = poor

DMIS Code	Name	Recoded
13	Little Rock AFB	0
62	Barksdale AFB	1
64	Fort Polk	2
96	Tinker AFB	3
97	Altus AFB	4
98	Fort Sill	5
109	Brooke Army Medical Center (BAMC)	10 (San Antonio)
110	Fort Hood	6
112	Dyess AFB	7
113	Sheppard AFB	8
114	Laughlin AFB	9
117	Wilford Hall Medical Center (WHMC)	10 (San Antonio)
118	Naval Hospital Corpus Christi	11

Phase one of the analysis consisted of a three by three correlation matrix. This identified the correlations between the primary care level, the resource utilization level and the self-reported health status. Phase two used a one-way analysis of variance (ANOVA) to compare the means of each catchment area and determine if any are significantly different. Tukey's Honestly Significant Difference (HSD) was used to test for significance. Tukey's HSD is designed to test for significance among groups when the n is the same for all the samples but a variation was developed by Kramer for groups with unequal n's (Spatz 1993). The researcher applied this

variation of Tukey's HSD because each catchment area was represented by varying numbers of HEAR responses.

Limitations

- Samples are self-selected. To be included in the study the enrollee must have returned the HEAR survey.
- Only adults completed the surveys so data on children's health status and demographics is missing.
- MHSS beneficiaries over the age of 65 are not eligible for TRICARE Prime and are therefore not included in this study. According to Freeborn et al, "Those concerned with the planning and financing of health care resources must consider the likelihood that any general population of older people will include a group of consistently high users with ongoing medical needs" (Freeborn et al. 1990b).
- Only data from the twelve catchment areas with bedded MTFs were analyzed.
- The HEAR survey has never been validated.

Assumptions

- Enrollees would self-select in a homogenous manner across the catchment areas.
- Variance in active duty beneficiary true health status is low.

Reliability and Validity

In addition to the reliability and validity issues discussed earlier concerning the HEAR instrument, some further discussion of this study's reliability and validity is needed.

Sources of error can be looked at in four groups: respondent, situation, instrument, and experimenter (Cooper and Emory 1995). If the researcher can limit these types of error, study reliability and validity should be increased (Kerlinger 1986).

In this study, respondent error was addressed by limiting the length of the survey. The researcher also removed surveys from the study if the respondent's age was more than sixty-five. Only two cases involved ages clearly unattainable (157 and 172). In all, cases removed because of age totaled only .59% of the total responses.

Because the surveys are electronically scanned into the database, human data-entry errors were reduced. Duplicate surveys are identified by an algorithm when they are scanned in and the oldest (baseline) one is kept for each beneficiary (Gibson 1996). However, the researcher was forced to enter some data by hand into the statistical package used to analyze the data because of some software problems. This was only necessary for two variables (self-reported health status, marital status) in two catchment areas (Altus, Fort Hood).

Surveys returned with seventeen as the age were not removed from the data set. They represented only 1.68% of the 31,090 cases used and could have been valid responses in many cases. For example, spouses of young active duty recruits could very well be seventeen at the time of enrollment. Four seventeen year-old responses were also coded as retirees. This is possible because of medical retirements and were therefore assumed to be valid responses. The total number of surveys used in this study was 31,090.

The researcher measured reliability using the correlation coefficient. Results ranged from .391 to .402 (see Table 4). The alpha probability level was set at .05.

Ethical Considerations

This study did not use patients' names or social security numbers. The results can not be traced to any individual or used against any individual to deny future health insurance.

CHAPTER 3

THE RESULTS

The phase I analysis revealed significant correlation between self-reported health status, resource utilization level and primary care level as expected.

Table 4 - Correlation Matrix

		Self-Reported Health Status	Resource Utilization Level	Primary Care Level
Pearson Correlation	Self-Reported Health Status	1.00	.391*	.402*
	Resource Utilization Level	.391*	1.000	.378*
	Primary Care Level	.402*	.378*	1.000
Significance (2-tailed)	Self-Reported Health Status		.000	.000
	Resource Utilization Level	.000		.000
	Primary Care Level	.000	.000	
N	Self-Reported Health Status	3011	3011	3011
	Resource Utilization Level	3011	31090	31090
	Primary Care Level	3011	31090	31090

*Correlation is significant at the 0.01 level (2-tailed).

Phase II of the analysis compared the catchment areas using a one-way ANOVA and found statistically significant differences in many areas. Table 5 summarizes where each catchment area differs from the others.

Table 5 - SUMMARY SIGNIFICANT DIFFERENCES

	Arkansas	Louisiana	Oklahoma					Texas				
	Little Rock	Barks-dale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock			4,5,7	1,4,5,7	4,5,7	1,2,3,4, 5,6,7	4,5,6, 7	4,5,7	4,5	1,4,5	3,4,5,7	4,5,7
Barks-dale			3,4,5 ,7	1,3,4,5 ,8	4,5,6 ,7	2,4,5,6, 7	3,4,5, 7	4,5,7	4,5	1,3,4,5	1,3,4,5,6, 7	1,3,4,5 ,7
Ft Polk	4,5,7	3,4,5, 7		1,4,5,7	4,5,6 ,7	1,3,4,5, 7	5	4,5,7	3,4,5,7	1	3,4,5,6,7	6
Tinker	1,4,5,7	1,3,4, 5,8	1,4,5 ,7		6	1,2,3,6, 8	1,4,7		3,4		1,3,4,5,6, 7,8	4,7
Altus	4,5,7	4,5,6, 7	4,5,6 ,7	6		1,2,3,6	4,6		4		3,4,5,7	7
Ft Sill	1,2,3,4,5,6 ,7	2,4,5, 6,7	1,3,4 ,5,7	1,2,3,6 ,8	1,2,3 ,6		2,3,4, 5,7	1,2,3, 6	1,2,4,6	1,2,3,6	1,2,3,4,5, 6,7	1,2,3,4 ,6,7
Ft Hood	4,5,6,7	3,4,5, 7	5	1,4,7	4,6	2,3,4,5, 7		4,5,7	3,4,5,6,7	1	3,4,5,6,7	1,6
Dyess	4,5,7	4,5,7	4,5,7			1,2,3,6	4,5,7		4		3,4,5,7	4,7
Sheppard	4,5	5	3,4,5 ,7	3,4	4	1,2,4,6	3,4,5, 6,7	4		4	4,5,7	4,7
Laughlin	1,4,5	1,3,4, 5	1,5			1,2,3,6	1,5		3,4		3,4,5,7	
San Antonio	3,4,5,7	1,3,4, 5,6,7	3,4,5 ,6,7	1,3,4,5 ,6,7,8	3,4,5 ,7	1,2,3,4, 5,6,7	3,4,5, 6,7	3,4,5, 7	3,4,5,7	3,4,5,7		3,4,5,7
Corpus Christi	4,5,7	1,3,4, 5,7	6	4,7	7	1,2,3,4, 6,7	1,6	4,7	3,4,7		3,4,5,7	

1 = Self-Reported Health Status 2 = Resource Utilization Level 3 = Primary Care Level 4 = Age 5 = Beneficiary Category
6 = Race/Ethnic Origin 7 = Gender 8 = Marital Status

Major findings were as follows:

- Little Rock and Barksdale had no significant differences.
- Tinker, Laughlin, and Dyess had no significant differences.
- Altus, Laughlin and Dyess had no significant differences and Altus and Tinker differed significantly only in regard to race/ethnic origin.

- Fort Sill was significantly different from all other catchment areas except Fort Polk in regard to resource utilization level.
- Fort Polk and Fort Hood differ significantly only in regard to beneficiary category.
- Fort Sill and San Antonio differ significantly from all other catchment areas (including each other) in most categories and do not group well with any other catchment areas.

Tables 6 through 13 show each dependent variable and how each catchment area compares to the others.

Table 6 - SELF-REPORTED HEALTH STATUS

	Arkansas	Louisiana		Oklahoma				Texas				
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock				X		X				X		
Barksdale				X						X	X	X
Ft Polk				X		X				X		
Tinker						X	X				X	
Altus						X						
Ft Sill								X	X	X	X	X
Ft Hood										X		X

X - significantly different from each other at the .05 level

Table 7 - RESOURCE UTILIZATION LEVEL

	Arkansas	Louisiana		Oklahoma			Texas					
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock						X						
Barksdale						X						
Ft Polk												
Tinker						X						
Altus						X						
Ft Sill							X	X	X	X	X	X

X - significantly different from each other at the .05 level

Table 8 - PRIMARY CARE LEVEL

	Arkansas	Louisiana	Oklahoma			Texas						
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock											X	
Barksdale			X	X			X			X	X	X
Ft Polk						X			X		X	
Tinker						X			X		X	
Altus						X					X	
Ft Sill							X	X		X	X	X
Ft Hood									X		X	
Dyess											X	
Sheppard										X	X	X
Laughlin											X	
San Antonio												X

X - significantly different from each other at the .05 level

Table 9 - AGE

	Arkansas	Louisiana	Oklahoma				Texas					
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock			X	X	X	X	X	X	X	X	X	X
Barksdale			X	X	X	X	X	X		X	X	X
Ft Polk				X	X	X		X	X		X	
Tinker							X		X		X	X
Altus							X		X		X	
Ft Sill							X		X		X	X
Ft Hood								X	X		X	
Dyess									X		X	X
Sheppard										X	X	X
Laughlin											X	
San Antonio												X

X - significantly different from each other at the .05 level

Table 10 - BENEFICIARY STATUS

	Arkansas	Louisiana	Oklahoma					Texas				
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock			X	X	X	X	X	X	X	X	X	X
Barksdale			X	X	X	X	X	X	X	X	X	X
Ft Polk				X	X	X	X	X	X		X	
Tinker											X	
Altus											X	
Ft Sill							X				X	
Ft Hood								X	X		X	
Dyess											X	
Sheppard											X	
Laughlin											X	
San Antonio												X

X - significantly different from each other at the .05 level

Table 11 - RACE/ETHNIC ORIGIN

	Arkansas	Louisiana	Oklahoma					Texas				
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock						X	X					
Barksdale					X	X					X	
Ft Polk					X						X	X
Tinker					X	X					X	
Altus						X	X					
Ft Sill								X	X	X	X	X
Ft Hood									X		X	X

X - significantly different from each other at the .05 level

Table 12 - GENDER

	Arkansas	Louisiana	Oklahoma				Texas					
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock			X	X	X	X	X	X			X	X
Barksdale			X		X	X	X	X			X	X
Ft Polk				X	X	X		X	X		X	
Tinker							X				X	X
Altus											X	X
Ft Sill							X				X	X
Ft Hood								X	X		X	
Dyess											X	X
Sheppard											X	X
Laughlin											X	
San Antonio												X

X - significantly different from each other at the .05 level

Table 13 - MARITAL STATUS

	Arkansas	Louisiana		Oklahoma			Texas				
	Little Rock	Barksdale	Ft Polk	Tinker	Altus	Ft Sill	Ft Hood	Dyess	Sheppard	Laughlin	San Antonio	Corpus Christi
Little Rock												
Barksdale				X								
Ft Polk												
Tinker						X					X	

X - significantly different from each other at the .05 level

CHAPTER 4

DISCUSSION

Anecdotal data would lead the researcher to believe the sicker retired population may tend to actively choose living arrangements near larger military treatment facilities (MTFs). If this is true, the San Antonio, Fort Hood, Fort Sill and Sheppard AFB catchment areas would show older and sicker enrolled populations. This again assumes self selection is not a significant factor. Because the sixty-five and over beneficiaries were excluded from the study, it is still not clear if this is true or not. However, this study does point to Fort Sill and San Antonio having significantly less healthy enrolled populations compared to the other catchment areas. This statement is based on the self-reported health status, and resource utilization level scores for Fort Sill and San Antonio's significantly higher (more complex) score for primary care level when compared to the other catchment areas.

Because some catchment areas were found to have significantly sicker non-active duty populations, this information could be used (in addition to other factors) by the resource managers of each service to allocate money and personnel. The results may also be useful when the region staff updates the strategic plan. Knowing the makeup of each catchment area's enrolled population should make it easier to craft a long term plan. The Air Force in particular

has been interested in rightsizing its medical treatment facilities and information regarding patient resource utilization could help in making decisions.

Table 14 - Possible Groupings of Catchment Areas

	Self-Reported Health Status			Resource Utilization Level			Primary Care Level		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Altus	2.38	.93	1163	1.12	.43	1204	1.70	.71	1204
Tinker	2.31	.90	3231	1.12	.42	3336	1.67	.68	3336
Dyess	2.39	.89	1691	1.12	.44	1760	1.71	.69	1760
Laughlin	2.18	.91	203	1.09	.36	208	1.56	.66	208
Corpus Christi*	2.32	.91	1094	1.13	.45	1127	1.67	.69	1127
Sheppard**	2.38	.95	1164	1.15	.48	1720	1.77	.71	1720
Little Rock	2.41	.91	2260	1.14	.45	2340	1.72	.67	2340
Barksdale	2.47	.94	2327	1.16	.48	2441	1.77	.67	2441
Ft Polk	2.42	.92	1932	1.16	.49	1995	1.69	.70	1995
Ft Hood	2.45	.91	2157	1.16	.48	2227	1.70	.69	2227
Ft Sill	2.51	.94	3924	1.20	.55	4065	1.79	.70	4065
San Antonio	2.39	.93	8365	1.15	.48	8667	1.85	.68	8667

* Corpus Christi does not fit in this group as well as some of the other catchment areas though it does not differ significantly in terms of self-reported health status, resource utilization level or primary care level.

** Sheppard differs significantly from Tinker in regard to primary care level

Using the results of the statistical analysis, it was possible for the researcher to loosely group some catchment areas together. These groupings may be helpful in future decision making but mostly these groupings may help decision makers understand their enrolled population better. Commanders at one facility can use these groupings to network and share ideas, knowing which facilities may be facing similar difficulties.

The results allowed the researcher to reject both null hypotheses and to accept both alternate hypotheses. Some catchment areas are significantly different from others in health status and demographics (except marital status).

Self-reported health status = F(catchment area)

Resource Utilization Level = F(catchment area)

Primary Care Level = F(catchment area)

Fort Sill in particular seems to have a sicker enrolled population and had the highest resource utilizers by far compared to the other catchment areas. Fort Sill was second only to San Antonio in more complex primary care level patients.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The twelve catchment areas in Region 6 do differ significantly from others in terms of health status and demographics. While this study yielded some interesting results, it was not nearly as useful as the researcher had originally planned. A much more helpful study would have looked at the possible differences between the enrolled beneficiary population and the non-enrolled population. Data source constraints limited the researcher to only comparing the enrolled populations to each other. Adding one more field to the next Health Care Survey of DoD Beneficiaries, identifying enrolled status, would solve this problem.

Other suggestions concern the HEAR survey. This should be made a mandatory part of the process of enrolling into TRICARE Prime. These results suggest active duty members should complete the survey upon entering active service in either basic training/officer training school or upon inprocessing to the first duty station. If the HEAR survey is not made a mandatory process of enrolling into TRICARE Prime, the HEAR Survey writers may want to consider moving the demographic portion of the survey to the end. Other research has shown a higher response rate for surveys with the demographics at the end of the survey (Paul and Bracken 1995). Consideration should also be given the layout of the survey. At this time it is a little confusing. Questions are lettered and numbered (e.g., A8) and the respondent must make several jumps

which are not immediately clear. An uncluttered survey with easy-to-follow directions would also increase the response rate (Kephart 1995).

Finally, the HEAR Survey needs to be validated for the MHSS population. What good is an instrument if the users are unsure whether it measures what they think it needs to measure? The expense is surely worth it for an instrument that already has had so much thought put into its design. A validated instrument may also encourage further research.

Clearly, more rigorous research should be done in this area. Understanding the customers (beneficiary population) is key to designing an efficient and effective health care delivery system. Even if more of the MHSS is contracted out in the future, it is important for the MHSS to be able to describe the beneficiary population's needs to facilitate contractor bids and well-written contracts.

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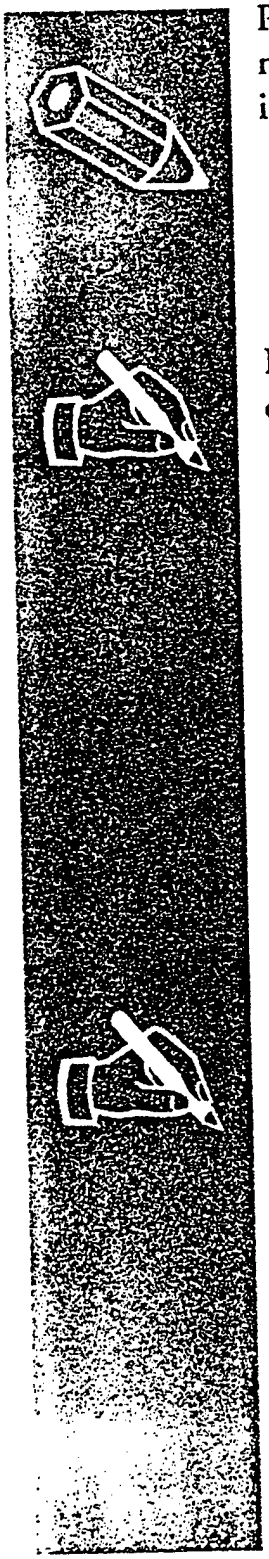
Health Enrollment Assessment Review (HEAR)

INSTRUCTIONS

General Instructions:



Please use a No. 2 pencil or darker to complete the survey. Make dark black marks that fill the response circles completely. If you make a mistake, erase the incorrect mark and fill in the correct circle.

Example: Correct ○ ● ○ Incorrect ⊘ ○ ◔

Here is an example of how someone born on June 23, 1971 would answer question A1.

A1. DATE OF BIRTH:
(YEAR / MONTH / DAY)

19 [7][1] / [0][6] / [2][3]

	7	1		0	6		2	3
0	○	○	0	●	○	0	○	○
1	●	○	1	○	○	1	○	○
2	○	○	2	○	○	2	●	○
3	○	○	3	○	○	3	○	●
4	○	○	4	○	○	4	○	○
5	○	○	5	○	○	5	○	○
6	○	○	6	○	●	6	○	○
7	●	○	7	○	○	7	○	○
8	○	○	8	○	○	8	○	○
9	○	○	9	○	○	9	○	○

Here is an example of how someone 6 feet 2 inches tall would answer question A6.

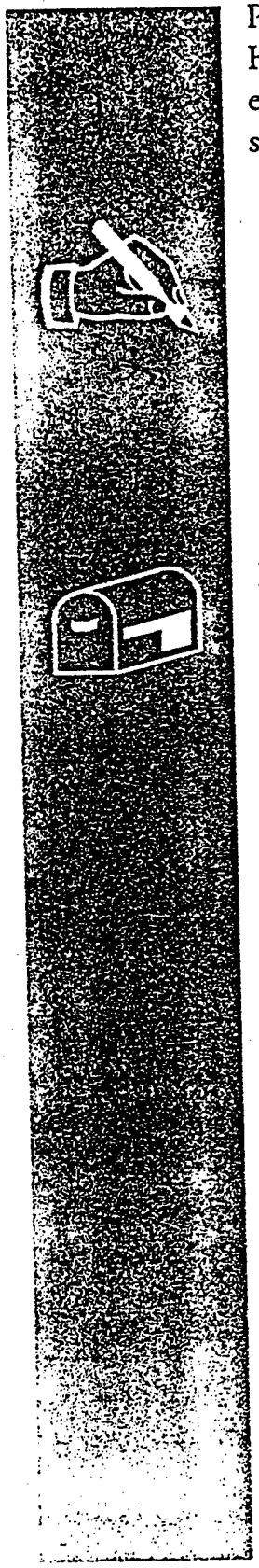
A6. Without shoes, about how tall are you?

[6] feet [0][2] inches

	6		0	2
3	○	0	●	○
4	○	1	○	○
5	○	2	○	●
6	●	3	○	○
7	○	4	○	○
		5	○	○
		6	○	○
		7	○	○
		8	○	○
		9	○	○

Health Enrollment Assessment Review (HEAR)

INSTRUCTIONS *(Continued)*



Please **answer all appropriate questions** and complete the entire survey. However, you should skip questions where the survey says to do so. For example, males should not answer the female questions, and non-smokers should not answer the smoking questions.

Example: In the illustration below, we have answer "not at all" to question **G2.** Therefore we will skip the rest of the **G** section questions and go directly to question **H1.**

G2. Do you NOW smoke cigarettes every day, some days, or not at all?

○ Every day ○ Some days ● Not at all (go to H1)

Do not fold or staple the survey pages. Please complete the survey and **return it by mail within 5 days,** using the pre-addressed envelope provided.

Privacy Act Statement:

AUTHORITY: 10 U.S.C., 8013

PURPOSE: The health enrollment assessment review (HEAR) survey is designed to collect personal information from military health services system beneficiaries.

ROUTINE USES: This information is used primarily by health care personnel to plan health care delivery needs. Information used in this survey will be sent only to you and your Primary Care Manager (PCM) and kept in your medical record. Other results from this survey will be provided only in combination with results from other enrollees and cannot be used to identify you.

DISCLOSURE: Completion of information in this survey is highly desirable, but not mandatory. Completion of the survey information will help your PCM design a plan of care. Preexisting medical conditions and other risk factors will in no way affect enrollment eligibility.

Thank you for completing the survey.

TRICARE HEALTH ENROLLMENT ASSESSMENT REVIEW QUESTIONNAIRE

FIRST NAME **MI**

LAST NAME

Your Social Security #: ☐☐☐ - ☐☐ - ☐☐☐☐

Sponsor's Social Security #: ☐☐☐ - ☐☐ - ☐☐☐☐

FOR OFFICE USE ONLY

Please do not write or mark in this area.

PCMID CODE

LOCATION S02

SEQUENCE ID 31927

64335

TRICARE HEALTH ENROLLMENT ASSESSMENT REVIEW QUESTIONNAIRE

STREET ADDRESS (include apartment #)

CITY

STATE

ZIP CODE

FOR OFFICE USE ONLY

Please do not write or mark in this area.

LOCATION S02

SEQUENCE ID 31927

64335

TRICARE HEALTH ENROLLMENT ASSESSMENT REVIEW QUESTIONNAIRE

1. DATE OF BIRTH:
(YEAR /MONTH /DAY)

19☐☐ / ☐☐ / ☐☐

0	OO	OO	OO
1	OO	OO	OO
2	OO	O	OO
3	OO	O	OO
4	OO	O	O
5	OO	O	O
6	OO	O	O
7	OO	O	O
8	OO	O	O
9	O	O	O

A2. GENDER:
- O Male
- O Female

A3. MARITAL STATUS:
- O Never married
- O Married
- O Separated
- O Divorced
- O Widowed

A4. Racial/Ethnic Background:
- O Amer. Indian or Alaska Native
- O Asian/Oriental
- O Black, Hispanic
- O Black, Non-Hispanic
- O Pacific Islander
- O White, Hispanic
- O White, Non-Hispanic
- O Other

A5. Are you:
- O Active duty service member
- O Retired service member

OR Family Member of:
- O Active duty service member
- O Retired/deceased service member

OR
- O Other

A6. About how tall are you, without shoes?

☐ feet ☐☐ inches

3	O	
4	O	
5	O	
6	O	
7	O	
	0	OO
	1	OO
	2	OO
	3	OO
	4	OO
	5	OO
	6	OO
	7	OO
	8	OO
	9	OO

A7. About how much do you weigh, without shoes?

☐☐☐ pounds

0	OOO
1	OOO
2	OOO
3	OOO
4	OOO
5	OOO
6	OOO
7	OOO
8	OOO
9	OOO

A8. Would you say that your health in general is...
- O Excellent
- O Very good
- O Good
- O Fair
- O Poor

B1. About how long has it been since you last had your blood pressure taken by a doctor, nurse, or other health professional?
- O Less than 1 year ago
- O 1 year ago
- O 2 years ago
- O 3 or more years ago
- O Never
- O Don't know

B2. Have you ever been told by a doctor or other health professional that you had hypertension, sometimes called high blood pressure?
- O Yes (go to B3)
- O No (go to C1)
- O Only during pregnancy (go to C1)

B3. Have you been told two or more different times that you had hypertension or high blood pressure?
- O Yes
- O No
- O Don't know

B4. Has any medicine ever been prescribed by a doctor for your hypertension or high blood pressure?
- O Yes
- O No (go to C1)
- O Don't know (go to C1)

B5. Are you now taking any medicine prescribed by a doctor for your hypertension or high blood pressure?
- O Yes
- O No (go to C1)
- O Don't know (go to C1)

B6. How regularly do you take your high blood pressure medicine?
- O Always
- O Most of the time
- O About half the time
- O Less than half the time
- O Never

C1. Blood cholesterol is a fatty substance found in blood. Have you ever had your blood cholesterol checked?
- O Yes (go to C2)
- O No (go to C4)
- O Don't know (go to C4)

C2. About how long has it been since you last had your blood cholesterol checked?
- O Less than 1 year ago
- O 1-2 years ago
- O 3-4 years ago
- O 5 years ago
- O More than 5 years ago
- O Don't know

C3. Have you ever been told by a doctor or other health professional that your blood cholesterol is high?
- O Yes
- O No
- O Don't know

C4. About how long has it been since you had a rectal exam?
- O Less than 1 year ago
- O 1 year ago
- O 2 years ago
- O 3 or more years ago
- O Never
- O Don't know

C5. During the past ten years, have you had a tetanus shot?
- O Yes
- O No
- O Don't know

D1. In an average week, how many times do you engage in physical activity (exercise or work which lasts at least 20 minutes without stopping and which is hard enough to make you breathe heavier and your heart beat faster)?
- O Less than 1 time per week
- O 1-2 times per week
- O At least 3 times per week

D2. How much hard physical work is required on your job? Would you say...
- O A great deal
- O A moderate amount
- O A little
- O None
- O Not currently working

D3. How much hard physical work is required in your main daily activity (household or other non-job activities)? Would you say...
- O A great deal
- O A moderate amount
- O A little
- O None

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Please do not write or mark in this area.

63559

TRICARE HEALTH ENROLLMENT ASSESSMENT REVIEW QUESTIONNAIRE

Women's Health (men go to F1)

. About how long has it been since you had a breast examination a doctor or other health professional?

○ Less than 1 year ago
○ 1 year ago
○ 2 years ago
○ 3 or more years ago
○ Never
○ Don't know

2. A mammogram is an x-ray of each breast to look for breast ncer. Have you ever had a mammogram?

○ Yes ○ No (go to E4) ○ Don't know (go to E4)

3. How long has it been since you had your last mammogram?

○ Less than 1 year ago
○ 1 year ago
○ 2 years ago
○ 3 or more years ago
○ Don't know

4. A Pap smear is a test for cancer of the cervix. Have you ever d a Pap test (or Pap smear)?

○ Yes ○ No (go to G1) ○ Don't know (go to G1)

5. How long has it been since you had your last Pap smear?

○ Less than 1 year ago
○ 1 year ago
○ 2 years ago
○ 3 or more years ago
○ Don't know

Men's Health (women go to G1)

1. How long has it been since you had a testicular examination by doctor or other health care professional?

○ Less than 1 year ago
○ 1 year ago
○ 2 years ago
○ 3 or more years ago
○ Never
○ Don't know

G1. Have you smoked at least 100 cigarettes in your entire life? (Note: 1 pack = 20 cigarettes) ○ Yes ○ No (go to H1)

G2. Do you **NOW** smoke cigarettes every day, some days, or not at all?

○ Every day ○ Some days ○ Not at all (go to H1)

G3. On the average, about how many cigarettes a day do you now smoke?

○ Less than 1 per day
○ 1-10 per day
○ 11-20 per day
○ 21-40 per day
○ 41 or more per day
○ Don't know

G4. Are you seriously intending to quit smoking in the next 6 months? ○ Yes ○ No

G5. Are you planning to quit smoking in the **next month?** ○ Yes ○ No

G6. Have you tried to quit smoking in the **past 12 months?** ○ Yes ○ No

H1. During the **past month**, have you had at least one drink of any alcoholic beverage such as beer, wine, wine cooler, or liquor?

○ Yes ○ No (go to I1) ○ Don't know

H2. In the past two weeks, on how many days did you drink any alcoholic beverages, such as beer, wine, or liquor?

○ None (go to H4)
○ 1-2 days
○ 3-4 days
○ 5-6 days
○ 7 or more days
○ Don't know

H3. A drink is 1 can or bottle of beer, 1 glass of wine, 1 can or bottle of wine cooler, 1 cocktail, or 1 shot of liquor. During the past 2 weeks, on the days when you drank, how many drinks did you drink on average?

○ 1-2 drinks
○ 3-4 drinks
○ 5-6 drinks
○ 7 or more drinks
○ Don't know

H4. During the past month, how many times have you driven when you've had perhaps too much to drink?

○ None
○ 1-2 times
○ 3-4 times
○ 5-6 times
○ 7 or more times
○ Don't drive
○ Don't know

H5. During the past month, have you thought you should cut down on your drinking of alcohol? ○ Yes ○ No

H6. During the past month, has anyone complained about your drinking? ○ Yes ○ No

H7. During the past month, have you felt guilty or upset about your drinking? ○ Yes ○ No

H8. During the past month, was there at least one day on which you had five or more drinks of beer, wine, or liquor? ○ Yes ○ No

I1. How often do you feel that your present work or lifestyle is putting you under too much stress?

○ Often ○ Sometimes ○ Seldom ○ Never

I2. During the past 2 weeks, would you say that you experienced...

○ A lot of stress
○ A moderate amount of stress
○ Relatively little stress
○ Almost no stress at all

I3. In the past year, how much effect has stress had on your health?

○ A lot ○ Some ○ Hardly any or none

J1. In general, how satisfied are you with your life (e.g., work situation, social activity, accomplishing what you set out to do)?

○ Not satisfied
○ Somewhat satisfied
○ Mostly satisfied
○ Totally satisfied

J2. How often do you have any serious problems dealing with your husband or wife, parents, friends, or with your children?

○ Often ○ Sometimes ○ Seldom ○ Never

J3. During the past year, have you been separated from your family for a block of at least 30 days?

○ Yes ○ No

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S02 LOCATION

31927 SEQUENCE ID

Please do not write or mark in this area.

TRICARE HEALTH ENROLLMENT ASSESSMENT REVIEW QUESTIONNAIRE

he past month, have you often been bothered by ...

. ...little interest or pleasure in doing things? ○ Yes ○ No

. ...feeling down, depressed, or hopeless? ○ Yes ○ No

. ..."nerves" or feeling anxious or on edge? ○ Yes ○ No

. ...worrying about a lot of different things? ○ Yes ○ No

5. During the past month, have you had an ciety attack (suddenly feeling fear or panic)? ○ Yes ○ No

6. During the past 12 months, have you en a mental health professional?
○ Yes
○ No
○ Don't know

1. During the past two weeks, how many days did you stay in bed r more than half of the day because of illness or injury?
○ None ○ 5-6 days
○ 1-2 days ○ 7 or more days
○ 3-4 days ○ Don't know

2. During the past two weeks, how many days did you miss more an half of the day from your job or business because of illness or jury?
○ None ○ 5-6 days
○ 1-2 days ○ 7 or more days
○ 3-4 days ○ Don't know

3. Do you have difficulty walking such as obbling, shuffling, or not being able to walk a raight line? ○ Yes ○ No

M1. How many different prescription medications are you currently aking?
○ None ○ 6 or more medications
○ 1-2 medications ○ Don't know
○ 3-5 medications

M2 & M3. Excluding visits for pregnancy, medication refills, and dental care, how many times did you see a doctor, nurse, or other ealth care professional for an office visit or clinic appointment? (Include both civilian and military health care professionals. Only include visits for yourself.)

during the PAST MONTH	during the PAST 12 MONTHS
○ None	○ None
○ 1-2 visits	○ 1-5 visits
○ 3-4 visits	○ 6-10 visits
○ 5-6 visits	○ 11-15 visits
○ 7 or more visits	○ 16-20 visits
○ Don't know	○ 21 or more visits
	○ Don't know

M4. During the past 12 months, how many times have you gone to an emergency room or urgent care clinic?
○ None ○ 5-6 visits
○ 1-2 visits ○ 7 or more visits
○ 3-4 visits ○ Don't know

M5. During the past 12 months, have you spent one or more nights in the hospital? (Do not include hospitalizations for deliveries.) ○ Yes ○ No (go to N1)

M6. During the past 12 months, how many nights have you spent in the hospital? ○ 1-2 nights ○ 3-4 nights ○ 5-6 nights ○ 7 or more nights ○ Don't know

M7. During the past 12 months, on how many different occasions have you entered the hospital and stayed for at least one night?
○ 1 time
○ 2-3 times
○ 4 or more times
○ Don't know

Have you ever been told by a health care provider that you have ...

N1. ...diabetes or sugar diabetes? ○ Yes ○ No ○ Don't know

N2. ...had a stroke? ○ Yes ○ No ○ Don't know

N3. ...had a heart attack? ○ Yes ○ No ○ Don't know

N4. ...emphysema/chronic bronchitis? ○ Yes ○ No ○ Don't know

N5. ...arthritis? ○ Yes ○ No ○ Don't know

N6. ...Parkinson's disease or other neurologic disease? ○ Yes ○ No ○ Don't know

N7. ...depression? ○ Yes ○ No ○ Don't know

N8. ...HIV or AIDS? ○ Yes ○ No ○ Don't know

N9. ...anxiety or personality disorder? ○ Yes ○ No ○ Don't know

N10. ...cancer? ○ Yes ○ No ○ Don't know

N11. ...heart disease or angina? ○ Yes ○ No ○ Don't know

N12. ...liver disease? ○ Yes ○ No ○ Don't know

N13. ...kidney disease? ○ Yes ○ No ○ Don't know

N14. ...a stomach ulcer? ○ Yes ○ No ○ Don't know

N15. ...asthma? ○ Yes ○ No ○ Don't know

N16. During the past 12 months, have you seen a health care provider on 2 or more occasions for a bone, joint, back, or muscle problem? ○ Yes ○ No

N17. Do you have a dependent family member less than 18 years old with a serious medical condition? ○ Yes ○ No

N18. Do you have a close family member (parent, brother/sister, or child) who has or had angina, a heart attack, or other heart disease? ○ Yes ○ No ○ Don't know

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Appendix B

Algorithm for Primary Care Level

The following information is taken directly from portions of chapter seven of the system documentation for the HEAR instrument.

The following patient care level indicators (PCLs) will be set to 1 at the start of the algorithm to indicate that the patient requires the "least care." Later, the PCL portion of the algorithm will set the respective PCL values to 2 for "more care" or to 3 for "most care" if certain conditions are met. These variables are as follows:

PCL_GEN	General Health
PCL_MENTAL	Mental Health
PCL_UTILIZE	Outpatient Utilization
PCL_HOSPITAL	Hospital Visits
PCL_ER	Emergency Room Visits
PCL_DISEASE	Chronic Diseases
PCL_AGE	Age
PCL_MEDICATE	Current Medications
PCL_OVERALL	PCL_OVERALL will be set to the maximum value of the other PCL variables

NOTE: Where possible, the software will follow these rules with respect to blank or otherwise invalid answers:

PCL settings	Blank answers will not cause respective settings to be altered from "least care."
HRU_SUM calculation	Blank answers will not cause this value to be incremented during respective calculations.

The PCL algorithm will set the respective PCL values to 2 for "more care" or to 3 for "most care" according to the following logic:

PCL_GEN	If HEALTH_STATUS = 4 then set PCL_GEN = 2 If HEALTH_STATUS = 5 then set PCL_GEN = 3
PCL_MENTAL	If at least two of the following are true: (MH_PLEASURE = 1 or MH_DEPRESSED = 1 or MH_NERVES = 1 or MH_WORRY = 1 or MH_ANXIETY = 1) then set PCL_MENTAL = 2

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	If MH_TREATED = 1 then set PCL_MENTAL = 3
PCL_UTILIZE	If MC_12M_VISITS = 4 then set PCL_UTILIZE = 2 If MC_12M_VISITS = 5 then set PCL_UTILIZE = 3
PCL_HOSPITAL	If (2 ≤ MC_HOSP_VISITS ≤ 3) then set PCL_HOSPITAL = 2 If MC_HOSP_VISITS = 4 then set PCL_HOSPITAL = 3
PCL_ER	If MC_ER_VISITS = 2 then set PCL_ER = 2 If (3 ≤ MC_ER_VISITS ≤ 4) then set PCL_ER = 3
PCL_DISEASE	If one or more of the following chronic diseases (N1 - N16) is present (= 1) AND (3 ≤ MC_12M_VISITS ≤ 5) then set PCL_DISEASE = 3
PCL_AGE	If AGE > 50 then PCL_AGE = 2
PCL_MEDICATE	If MC_MED_HOWMANY = 2 then set PCL_MEDICATE = 2 If MC_MED_HOWMANY = 3 then set PCL_MEDICATE = 3
PCL_OVERALL	Set PCL_OVERALL the maximum value of the other PCL variables

Algorithm for Resource Utilization Level

The resource utilization algorithm will set the respective indicator to 1,2 or 3 if it is determined that the patient is a low, moderate, or high medical resource utilizer according to the following logic:

HIGH_RES_UTIL	Set HIGH_RES_UTIL = 1 (low medical resource utilizer)
HRU_SUM	Set HRU_SUM to 0. Add 1 to HRU_SUM as each of the following conditions are met.

GENDER = 2

MARITAL _STATUS = 1

HEALTH _STATUS ≥ 4

HYPER_TOLD_2 = 1

SMOKE_HOWOFTEN = 1 or 2

ALC_CUTDOWN = 1 or ALC_COMPLAIN =1 or ALC_GUILTY = 1 or ALC_5DRINKS = 1

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FAM_SATISFACTION = 1 or FAM_PROBLEMS = 1

STRESS_HOWOFTEN = 1 or STRESS_HOWMUCH = 1
or STRESS_EFFECT = 1

If at least two of the following five are true:
(MH_PLEASURE = 1 or MH_DEPRESSED = 1 or
MH_NERVES = 1 or MH_WORRY = 1 or
MH_ANXIETY = 1) or if MH_TREATED = 1

ABS_BED_DAYS = 3 or ABS_BED_DAYS = 4 or
ABS_JOB_DAYS = 3 or ABS_JOB_DAYS = 4

MC_MED_HOWMANY = 3

MC_12M_VISITS = 5

MC_ER_VISITS = 3 or 4

MC_HOSP_NIGHTS = 4 or MC_HOSP_VISITS = 2 or
MC_HOSP_VISITS = 3

CC_HEART_ATTACK = 1 or CC_ANGINA = 1

CC_EMPHYSEMA = 1

CC_ARTHRITIS = 1

If HRU_SUM = 5 then set HIGH_RES_UTIL = 2 (moderate resource utilizer)

If HRU_SUM ≥ 6 then set HIGH_RES_UTIL = 3 (high resource utilizer)

Taken from documentation provided to the U.S. Air Force by Battelle Memorial Institute, Statistics and Data Analysis Systems

Appendix C

HEAR (TRICARE Enrollment Data System) Data Dictionary*

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
A	**General Information**		Note: The column to the right contains a brief description of validation rules and algorithm cross-references. See algorithm document for complete description of the algorithms. The TEDS software will identify (1) the records that do not meet the validation criteria and (@) the offending fields (reasons). The fields marked with an asterisk (*) must absolutely be valid. Otherwise, no Patient Report Card (PRC) report can be printed. If any of the remaining fields are invalid, the TEDS software will print the PRC and the PCM. Of course, the results reported may not be entirely accurate.	Note continues: Where possible, the TEDS software will follow these rules with respect to blank or otherwise invalid answers: (1) PCL settings blank answers will not cause respective settings to be altered from "least care" (2) PREV settings - blank answers will cause the respective settings to be set to "not current" as if the missing response were actually "don't know" (3) RISK settings - blank answers will not cause respective settings to be altered from "risk not present" (4) Please Note settings - blank answers will cause the respective comments to be set as if the missing response were actually "don't know" or "no." A missing HEALTH_STATUS will be assumed to be "good." (5) HRU_SUM calculation - blank answers will not cause this value to be incremented during the respective calculations.
Front Page 1	Name?	First name and Middle initial and Last name	FIRST_NAME MID_INITIAL LAST_NAME	May be blank. This info may come from CHCS.
Front Page 1	Social Security Number?	Social Security Number	SELF_SSN	Must contain all numbers. This field must always be present.
Front Page 1	Sponsor's Social Security Number	Sponsor social Security Number	SPONSOR_SSN	If not blank, must contain all numbers.

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Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
Front Page 1	PCMID Code?		PCMID_CODE	If not blank, must contain all numbers.
Front Page 2	Address?	Street City State Zip code	STREET CITY STATE ZIP_CODE	May be blank. This info may come from CHCS.
A1	Date of Birth?	Date of Birth (YY/MM/DD)	DOB	(*) Must be a valid date and must be more than 17 years ago. Used to calculate AGE which is used to set PCL_AGE and several other indicators.
A2	Gender?	(1) Male (2) Female	GENDER	(*) Must be answered. HRU_SUM (add 1 if 2)
A3	Marital Status?	(1) Never Married (2) Married (3) Separated (4) Divorced (5) Widowed	MARITAL_STATUS	Must be answered. HRU_SUM (add 1 if 1)
A4	Racial/Ethnic Background	(1) American Indian or Alaska Native (2) Asian/Oriental (3) Black, Hispanic (4) Black, Non-Hispanic (5) Pacific Islander (6) White, Hispanic (7) White, Non-Hispanic (8) Other	RACE	Must be answered.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments.
A5	Are you?	(1) Active duty service member (2) Family member of active duty service member (3) Retired service member (4) Family member of retired/deceased service member (5) Other	DUTY_STATUS DUTY_STATUS2 DUTY_STATUS3	Must be answered.
A6	About how tall are you without shoes?	[NN] Feet and [NN] Inches	HT_FEET HT_INCHES	Height must be between 36" and 95". Used to calculate Body Mass Index (BMI) which is used to set RISK_WEIGHT.
A7	About how much do you weigh without shoes?	[NNN] Pounds	WEIGHT	Must be answered. Used to calculate Body Mass Index (BMI) which is used to set RISK_WEIGHT.
A8	Would you say that your health in general is...	(1) Excellent (2) Very Good (3) Good (4) Fair (5) Poor	HEALTH_STATUS	Must be answered. Treat as 3 in algorithm if not answered. PCL_GEN (=2 if 4, 3 if 5) HRU_SUM (add 1 if ≥ 4) Patient self reported health status to be reported to PCM as answered.
B	**Blood Pressure**			
B1	About how long has it been since you last had your blood pressure taken by a doctor, nurse, or other health professional?	(1) Less than 1 year ago (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (6) Don't know	BP_HOWLONG	Must be answered. PREV_BP. Current = 2 years.
B2	Have you ever been told by a doctor or other health professional that you had hypertension, sometimes called high blood pressure?	(1) Yes (go to B3) (2) No (go to C1) (3) Only during pregnancy (go to C1)	HYPER_TOLD	Must be answered.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
B3	Have you ever been told two or more different times that had hypertension or high blood pressure?	(1) Yes (2) No (9) Don't know	HYPER_TOLD_2	If HYPER_TOLD = 1 then question must be answered. RISK_BP. (if YES) HRU_SUM (add 1 if YES)
B4	Has any medicine ever been prescribed by a doctor for your hypertension or high blood pressure?	(1) Yes (2) No (go to C1) (9) Don't know (go to C1)	HYPER_MED_EVER	If HYPER_TOLD = 1 then question must be answered.
B5	Are you now taking any medicine prescribed by a doctor for your hypertension or high blood pressure?	(1) Yes (2) No (go to C1) (9) Don't know (go to C1)	HYPER_MED_NOW	If HYPER_MED_EVER = 1 then question must be answered. RISK_HYPER_MED (if 2,3,4, or 5)
B6	How regularly do you take your high blood pressure medicine?	(1) Always (2) Most of the time (3) About half the time (4) Less than half the time (5) Never	HYPER_MED_HOWOFTEN	If HYPER_MED_NOW = 1 then question must be answered. RISK_HYPER_MED (if 2,3,4,or 5)
C	**Cholesterol and Other Preventive Health Issues**			
C1	Blood cholesterol is a fatty substance found in blood. Have you ever had your blood cholesterol checked?	(1) Yes (2) No (go to C4) (9) Don't know (go to C4)	CHOL_EVER	Must be answered. PREV_CHOL (Never if 2, not current if 9) Also see below.
C2	About how long has it been since you last had you blood cholesterol checked?	(1) Less than 1 year ago (2) 1-2 years ago (3) 3-4 years ago (4) 5 years ago (5) More than 5 years ago (6) Never (9) Don't know	CHOL_HOWLONG	If CHOL_EVER = 1 then question must be answered. PREV_CHOL (Current = 5 years) Also see above.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
C3	Have you ever been told by a doctor or other health professional that your blood cholesterol is high?	(1) Yes (2) No (9) Don't know	CHOL_TOLD	If CHOL_EVER = 1 then question must be answered. RISK_CHOL (if YES)
C4	About how long has it been since you had a rectal exam?	(1) Less than 1 year (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (9) Don't know	RECTAL_HOWLONG	Must be answered. PREV_RECTAL (for age ≥ 40 , current = 1 year)
C5	During the past ten years, have you had a tetanus shot?	(1) Yes (2) No (9) Don't know	TETANUS_SHOT	Must be answered. PREV_TET (never if 2, not current if 9)
D	**Physical Activity**			
D1	In an average week, how many times do you engage in physical activity (exercise or work which lasts at least 20 minutes without stopping and which is hard enough to make you breathe heavier and your heart beat faster)?	(1) Less than 1 time per week (2) 1 or 2 times per week (3) At least 3 times per week	EXER_HOWOFTEN	Must be answered. RISK_EXER (if 1 #) # all three must be true.
D2	How much hard physical work is required on your job? Would you say …	(1) A great deal (2) A moderate amount (3) A little (4) None (8) Not currently working	EXER_JOB	Must be answered. RISK_EXER (if > 2 #) # all three must be true.
D3	How much hard physical work is required in your main daily activity (household or other non-job activities)? Would you say …	(1) A great deal (2) A moderate amount (3) A little (4) None	EXER_NAUB	Must be answered. RISK_EXER (if > 2 #) # all three must be true.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
E	**Women's Health (men go to F1)**			
E1	About how long has it been since you had a breast examination by a doctor or other health professional?	(1) Less than 1 year ago (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (9) Don't know	BREAST_HOWLONG	Must be answered. PREV_BREAST (for AGE ≥ 40, current = 1 year)
E2	A mammogram is an x-ray of each breast to look for breast cancer. Have you ever had a mammogram?	(1) Yes (2) No (go to E4) (3) Don't know (go to E4)	MAM_EVER	Must be answered. PREV_MAM (for AGE ≥ 40, current = 9, never = 2) Also see below.
E3	How long ago has it been since you had your last mammogram? Would you say ...	(1) Less than 1 year ago (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (9) Don't know	MAM_HOWLONG	If MAM_EVER = 1, then question must be answered. PREV_MAM (for AGE ≥ 40, current = 2 years) (for AGE ≥ 50, current = 1 year)
E4	A Pap smear is a test for cancer of the cervix. Have you ever had a Pap test (or Pap smear)?	(1) Yes (2) No (go to G1) (9) Don't know (go to G1)	PAP_EVER	Must be answered. PREV_PAP Also see below.
E5	How long has it been since you had your last Pap smear?	(1) Less than 1 year ago (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (9) Don't know	PAP_HOWLONG	If PAP_EVER = 1, then question must be answered. PREV_PAP

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
F	**Men's Health (women go to G1)**			
F1	How long has it been since you had a testicular examination by a doctor or other health care professional?	(1) Less than 1 year ago (2) 1 year ago (3) 2 years ago (4) 3 or more years ago (5) Never (9) Don't know	TESTIC_HOWLONG	Must be answered. PREV_TESTIC
G	**Smoking**			
G1	Have you smoked at least 100 cigarettes in your entire life? (Note: 1 pack = 20 cigarettes)	(1) Yes (2) No (go to H1)	SMOKE_EVER	Must be answered.
G2	Do you now smoke cigarettes every day, some days, or not at all?	(1) Every day (2) Some days (3) Not at all (go to H1)	SMOKE_HOWOFTEN	If SMOKE_EVER = 1 then question must be answered. RISK_SMOKE (if 1 or 2) RISK_SMKE_STOP (low if 1 or 2 ##) HRU_SUM (add 1 if 1 or 2)
G3	On the average, about how many cigarettes a day do you now smoke?	(0) Less than 1 per day (1) 1 -10 per day (2) 11 - 20 per day (3) 21 - 40 per day (4) 41 or more per day (9) Don't know	SMOKE_HOWMANY	If SMOKE_EVER = 1 then question must be answered.
G4	Are you seriously intending to quit smoking in the next 6 months?	(1) Yes (2) No	SMOKE_WILLQUIT6	If SMOKE_EVER = 1 then question must be answered. RISK_SMOKE_STOP (moderate if 1 ##)
G5	Are you planning to quit smoking in the next month?	(1) Yes (2) No	SMOKE_WILLQUIT1	If SMOKE_EVER = 1 then question must be answered. RISK_SMOKE_STOP (high if 1 ##)

Question No:	Question Text	Question Responses	Variable Name	Validation and Other Comments
G6	Have you tried to quit smoking in the past 12 months?	(1) Yes (2) No	SMOKE_TRIEDQUIT	If SMOKE_EVER = 1 then question must be answered. RISK_SMOKE_STOP (very high if 1 ##) ## Set higher for each succeeding condition.
H	**Alcohol**			
H1	During the past month, have you had at least one drink of any alcoholic beverage such as beer, wine, wine cooler, or liquor?	(1) Yes (2) No (go to I1) (9) Don't know	ALC_NOW	Must be answered.
H2	In the past two weeks, on how many days did you drink any alcoholic beverages, such as beer, wine, or liquor?	(0) None (go to H4) (1) 1 - 2 days (2) 3 - 4 days (3) 5 - 6 days (4) 7 or more days (9) Don't know	ALC_DAYS_HOWMANY	If ALC_NOW = 1 or 9, then question must be answered. Potential alcohol abuse if = 3 or 4 and condition below exists.
H3	A drink is 1 can or bottle of beer, 1 glass of wine, 1 can or bottle of wine cooler, 1 cocktail, or 1 shot of liquor. During the past 2 weeks, on the days when you drank, about haw many drinks did you drink on average?	(1) 1 - 2 drinks (2) 2 - 4 drinks (3) 5 - 6 drinks (4) 7 or more drinks (9) Don't know	ALC_DRINKS_HOWMANY	If ALC_NOW = 1 or 9, the question must be answered unless ALC_DAYS_HOWMANY = 0. Potential alcohol abuse if = 3 or 4 and condition above exists.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
H4	During the past month, how many times have you driven when you've had perhaps too much to drink?	(0) None (1) 1 - 2 times (2) 3 - 4 times (3) 5 - 6 times (4) 7 or more times (5) Don't drive (9) Don't know	ALC_DRIVE_TIMES	If ALC_NOW = 1 or 9, then question must be answered. RISK_DRINK (if = 1 ###) HRU_SUM (###) ### Also see below.
H5	During the past month, have you thought you should cut down on your drinking of alcohol?	(1) Yes (2) No	ALC_CUTDOWN	If ALC_NOW = 1 or 9, then question must be answered. RISK_DRINK (If = 1 ###) HRU_SUM (###) ### Also see below
H6	During the past month, has anyone complained about your drinking?	(1) Yes (2) No	ALC_COMPLAIN	If ALC_NOW = 1 or 9, then question must be answered. RISK_DRINK (If = 1 ###) HRU_SUM (###) ### Also see below/above.
H7	During the past month, have you felt guilty or upset about your drinking?	(1) Yes (2) No	ALC_GUILTY	If ALC_NOW = 1 or 9, then question must be answered. RISK_DRINK (If = 1 ###) HRU_SUM (###) ### Also see below/above.
H8	During the past month, was there at least one day on which you had five or more drinks of beer, wine, or liquor.	(1) Yes (2) No	ALC_5DRINKS	If ALC_NOW = 1 or 9, then question must be answered. RISK_DRINK (If = 1 ###) HRU_SUM (###) ### Also see above. Add 1 to HRU_SUM (only 1 time) if any of the above conditions are met.

Question Nor	Question Text	Question Responses	Variable Name	Validation and Other Comments
I	**Stress**			
I1	How often do you feel that your present work or lifestyle is putting you under too much stress?	(1) Often (2) Sometimes (3) Seldom (4) Never	STRESS_HOWOFTEN	Must be answered. RISK_STRESS (if = 1 ***) HRU_SUM (***) *** Also see below
I2	During the past 2 weeks, would you say that you experienced...	(5) A lot of stress (6) A moderate amount of stress (7) Relatively little stress (8) Almost no stress at all	STRESS_HOWMUCH	Must be answered. RISK_STRESS (if = 1 ***) HRU_SUM (***) *** Also see below/above.
I3	In the past year, how much effect has stress had on your health?	(1) A lot (2) Some (3) Hardly any or none	STRESS_EFFECT	Must be answered. RISK_STRESS (if = 1 ***) HRU_SUM (***) *** Also see above. Add 1 to HRU_SUM (only 1 time) if any of the above conditions are met.
J	**Satisfaction and Family**			
J1	In general, how satisfied are you with your life (e.g. work situation, social activity, accomplishing what you set out to do)?	(1) Not satisfied (2) Somewhat satisfied (3) Mostly satisfied (4) Totally satisfied	FAM_SATISFACTION	Must be answered. RISK_FAM (If = 1 *#) HRU_SUM (*#) *# Also see below
J2	How often do you have any serious problems dealing with your husband or wife, parents, friends or with your children?	(1) Often (2) Sometimes (3) Seldom (4) Never	FAM_PROBLEMS	Must be answered. RISK_FAM (If = 1 *#) HRU_SUM (*#) *# Also see below/above. Add 1 to HRU_SUM (only 1 time) if any of these two conditions are met.
J3	During the past year, have you been separated from your family for a block of at least 30 days?	(1) Yes (2) No	FAM_SEPARATED	Must be answered. RISK_FAM (If = 1 *#) *# Also see above. Potential risk for family separation to be reported to PCM as answered.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
K	**Mental Health** In the past month, have you often been bothered by ...			
K1	little interest or pleasure in doing things?	(1) Yes (2) No	MH_PLEASURE	Must be answered. RISK_DEPRESS (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see below.
K2	feeling down, depressed, or hopeless?	(1) Yes (2) No	MH_DEPRESSED	Must be answered. RISK_DEPRESS (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see below/above.
K3	"nerves" or feeling anxious or on edge?	(1) Yes (2) No	MH_NERVES	Must be answered. RISK_ANXIETY (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see below/above.
K4	worrying about a lot of different things?	(1) Yes (2) No	MH_WORRY	Must be answered. RISK_ANXIETY (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see below/above.
K5	During the past month... have you had an anxiety attack (suddenly feeling fear or panic)?	(1) Yes (2) No	MH_ANXIETY	Must be answered. RISK_ANXIETY (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see below/above.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
K6	During the past 12 months ... have you seen a mental health professional?	(1) Yes (2) No (9) Don't Know	MH_TREATED	Must be answered. RISK_DEPANX (If = 1 @@) PCL_MENTAL (= 2 if 1 @@) HRU_SUM (@@) @@ Also see above. Add 1 to HRU_SUM (only 1 time) if any of the above conditions are met.
L	**Absenteeism and Activity Limitations**			
L1	During the past <u>two weeks</u>, how many days did you stay in bed for more than half of the day because of illness or injury?	(0) None (1) 1 - 2 days (2) 3 - 4 days (3) 5 - 6 days (4) 7 or more days (9) Don't know	ABS_BED_DAYS	Must be answered. HRU_SUM (add 1 if 3 or 4) &&
L2	During the past <u>two weeks</u>, how many days did you miss more than half of the day from job business because of illness or injury?	(0) None (1) 1 - 2 days (2) 3 - 4 days (3) 5 - 6 days (4) 7 or more days (5) Not currently working (6) Don't know	ABS_JOB_DAYS	Must be answered. HRU_SUM (add 1 if 3 or 4) && && Add 1 to HRU_SUM (only 1 time) if any of the above two conditions are met.
L3	Do you have difficulty walking such as hobbling, shuffling, or not being able to walk a straight line?	(1) Yes (2) No	ABS_HOBBLE	

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
M	**Medical Care**			
M1	How many different prescription medications are you currently taking?	(0) None (1) 1 -2 medications (2) 3 - 5 medications (3) 6 or more medications (9) Don't know	MC_MED_HOWMANY	Must be answered. PCL_MEDICATE (= 2 if 2, =3 if 3) HRU_SUM (add 1 if 3) Number of prescription medications being taken to be reported to PCM as answered.
M2	Excluding visits for pregnancy, medication refills , and dental care, how many times did you see a doctor, nurse, or other health care professional for an office visit or clinic appointment? (Include both civilian and military health care professionals. Only include visits for yourself.) During the past month.	(0) None (1) 1 - 2 visits (2) 3 - 4 visits (3) 5 -6 visits (4) 7 or more visits (9) Don't know	MC_1M_VISITS	
M3	Excluding visits for pregnancy, medication refills , and dental care, how many times did you see a doctor, nurse, or other health care professional for an office visit or clinic appointment? (Include both civilian and military health care professionals. Only include visits for yourself.) During the past 12 months.	(0) None (1) 1 - 5 visits (2) 6 - 10 visits (3) 11 - 15 visits (4) 16 - 20 visits (5) 21 or more visits (6) Don't know	MC_12M_VISITS	Must be answered. PCL_UTILIZE (=2 if 4, =3 if 5) PCL_DISEASE (=3 if one or more chronic diseases is present and if 2,3,4, or 5) HRU_SUM (add 1 if 5) Number of outpatient visits in the past year to be reported to PCM as answered.
M4	During the past 12 months, how many times have you gone to an emergency room or urgent care clinic?	(0) None (1) 1 - 2 visits (2) 3 - 4 visits (3) 5 - 6 visits (4) 7 or more visits (9) Don't know	MC_ER_VISITS	Must be answered. PCL_ER (=2 if2, =3 if 3 or 4) HRU_SUM (add 1 if 3 or 4)

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
M5	During the past 12 months, have you spent one or more nights in the hospital? (Do not include hospitalizations for deliveries)	(1) Yes (2) No (go to N1)	MC_HOSP_EVER	Must be answered.
M6	During the past 12 months, how many nights have you spent in the hospital?	(1) 1 - 2 nights (2) 3 - 4 nights (3) 5 -6 nights (4) 7 or more visits (9) Don't know	MC_HOSP_NIGHTS	If MC_HOSP_EVER = 1 then question must be answered. PCL_HOSPITAL (=3 if 4 @#) HRU _SUM (@#) @# Also see below.
M7	During the past 12 months, on how many different occasions did you enter the hospital and stay for at least one night?	(1) 1 time (2) 2 - 3 times (3) 4 or more times (9) Don't know	MC_HOSP_VISITS	If MC_HOSP_EVER = 1 then question must be answered. PCL_HOSPITAL (=3 if 2 or 3 @#) HRU _SUM (@#) @# Also see above. Add 1 to HRU_SUM (only 1 time) if any of the two conditions are met. Number of hospitalizations in the past year to be reported to PCM as answered.
N	**Chronic Conditions and Impairments** Have you ever been told by a health care provider that you have ...			
N1	diabetes or sugar diabetes?	(1) Yes (2) No (9) Don't know	CC_DIABETES	Must be answered.
N2	had a stroke?	(1) Yes (2) No (9) Don't know		Must be answered.
N3	had a heart attack?	(1) Yes (2) No (9) Don't know	CC_HEARTATTACK	Must be answered. HRU_SUM (see CC_ANGINA)

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
N4	emphysema/chronic bronchitis?	(1) Yes (2) No (9) Don't know	CC_EMPHYSEMA	Must be answered. HRU_SUM (add 1 if = 1)
N5	arthritis?	(1) Yes (2) No (9) Don't know	CC_ARTHRITITS	Must be answered. HRU_SUM (add 1 if = 1)
N6	Parkinson's disease or other neurologic disease?	(1) Yes (2) No (9) Don't know	CC_PARKINSONS	Must be answered.
N7	depression?	(1) Yes (2) No (9) Don't know	CC_DEPRESSION	Must be answered.
N8	HIV or AIDS?	(1) Yes (2) No (9) Don't know	CC_HIV	Must be answered.
N9	anxiety or personality disorder?	(1) Yes (2) No (9) Don't know	CC_DISORDER	Must be answered.
N10	cancer?	(1) Yes (2) No (9) Don't know	CC_CANCER	Must be answered.
N11	heart disease or angina?	(1) Yes (2) No (9) Don't know	CC_ANGINA	Must be answered. HRU_SUM (Add 1 (only 1 time(to HRU_SUM if CC_HEARTATTACK or CC_ANGINA = 1)
N12	liver disease?	(1) Yes (2) No (9) Don't know	CC_LIVER	Must be answered.
N13	kidney disease?	(1) Yes (2) No (9) Don't know	CC_KIDNEY	Must be answered.

Question No.	Question Text	Question Responses	Variable Name	Validation and Other Comments
N14	a stomach ulcer?	(1) Yes (2) No (9) Don't know	CC_ULCER	Must be answered.
N15	asthma?	(1) Yes (2) No (9) Don't know	CC_ASTHMA	Must be answered.
N16	During the past 12 months, have you seen a health care provider on 2 or more occasions for a bone, joint, back or muscle problem?	(1) Yes (2) No	CC_MUSCLE	Must be answered.
N17	Do you have a dependent family member less than 18 years old with a serious medical condition.	(1) Yes (2) No	CC_DEP_CONDITION	Must be answered. Family member with a serious illness to be reported to PCM as answered.
N18	Do you have a close family member (parent, brother/sister, or child) who has or had angina, a heart attack, or other heart disease?	(1) Yes (2) No (9) Don't know	CC_FAM_HEART	Must be answered. RISK_HEART (if 1)

Appendix D

HEAR Survey Source Instruments

Source Instrument	Administration Mode	Citation
see table of recommending bodies below	Clinical guidelines	Clinical guidelines from many of the national health and medical organizations responsible for setting clinical standards and recommendations.
NHANES III	Interviewer-administered survey questionnaire (or reported by proxy) respondent and clinical assessment by provider/researchers	The third round of the National Health and Nutrition Examination Survey, which is a multi-year survey conducted by the CDC/National Center for Health Statistics. Over 10,000 interviews and clinical exams of adults and children in each of NHANES' three rounds.
NHIS	Interviewer-administered survey questionnaire (or reported by proxy resident)	The National Health Interview Survey, which is a long running survey designed by the CDC/NCHS. Its core questionnaire is largely consistent over the last 5 years.
HCS	Self-administered survey	1994-95 Health Care Survey of DoD Beneficiaries (DMDC Survey No. 94-004)
HRB	Self-administered survey	1995 DoD Survey of Health Related Behaviors Among Military Personnel (RCS #DD-HA (AR) 1785)
AF-PRA	Self-administered assessment tool	Preventive Health Physical Risk Assessment (draft of 5/9/95) AFMOA
AF-BRFS	Pilot tests of a military community population via a telephone survey	This is a slightly shortened version of the CDC Behavioral Risk Factor Survey (BRFS) which was piloted by the Air Force in one military "community." The BRFS is used in all states although its survey measures are not directly comparable to the key national surveys including NHANES and NHIS, in many areas. Nonetheless, BRFS state data may be useful for making local military community survey comparisons to state data. BRFS data are not, however, particularly useful for local community level planning. A special survey instrument has

*Taken from ITS Recommendations for Assessment Tool Modification ITS, Inc.

		been developed with CDC/NCHS funds by Information Transfer Systems, Inc. This instrument is comparable in many areas to state and national level surveys, and has been designed for use in data driven planning processes such as Health Communities, PATCH, APEXPH, etc.
AF	Self-administered health risk appraisal (HRA)	Health Risk Appraisal (AF 3850 JN 94) designed for the Air Force by the Healthier People Network (HPN). To the largest extent, items in this HRA have not been modified herein, due to the need for HPN involvement.
ARMY	Self-administered health risk appraisal (HRA)	Health Risk Appraisal (DA Form 5675, Oct 1, 1990) designed for the Army by the Healthier People Network. Also used as the Navy HRA. Items in this HRA have not been modified herein, due to the need for HPN involvement.

Sources Cited for Clinical Recommendations*

Abbreviation	Organization
AAD	American Academy of Dermatology
AAFP	American Academy of Family Physicians
AAP	American Academy of Pediatrics
ACIP	Advisory Committee on Immunization Practices
ACOG	American College of Obstetricians and Gynecologists
ACP	American College of Physicians
ACR	American College of Radiology
ACS	American Cancer Society
ADA	American Dietetic Association
AHA	American Heart Association
AMWA	American Medical Women's Association
ASCRS	American Society of Colon and Rectal Surgeons

*Taken from ITS Recommendations for Assessment Tool Modification ITS, Inc.

ATS	American Thoracic Society
AUA	American Urological Association
IOM	Institute of Medicine
JNCDET	Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure
NCI	National Cancer Institute
NCIDR	National Institute of Dental Research
NCEP	National Cholesterol Education Program
NHBPEP	National High Blood Pressure Education Program of the National Heart, Lung, and Blood Institute
NHLBI	National Heart, Lung, and Blood Institute
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIDR	National Institute of Dental Research
NOF	National Osteoporosis Foundation
NTSB	National Transportation Safety Board
PPIP	Put Prevention Into Practice: Clinician's Handbook of Preventive Services
SCF	Skin Cancer Foundation
USDA	U.S. Department of Agriculture
USDHHS	U.S. Department of Health and Human Services
USPSTF	U.S. Preventive Services Task Force
TX	Health Risk Profile (Texas Department of Public Health, stock No D 16N, Feb 1994)

*Taken from ITS Recommendations for Assessment Tool Modification ITS, Inc.