

NATIONAL SURVEY OF WOMEN VETERANS  
 COMPUTER-ASSISTED TELEPHONE INTERVIEW  
 VA FORM 10-21086NR  
 2900-XXXX

**B. Collections of Information Employing Statistical Methods**

**1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection methods to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.**

We will sample 3,500 women veterans from the universe of 1,700,000 women veterans. As described in the following table, women veterans will be sampled by 3 period of military service strata and 2 VA user type strata. Women veteran VA healthcare users are exposed to one of three major women’s health practice structures – comprehensive women’s health clinics (delivering primary and women’s health care), women’s clinics for annual gender-specific exams only (with other care delivered in primary care clinics), and traditional primary care clinics (i.e., care for women fully integrated with care for men). In the 2006 VHA Survey of Women Veterans Health Programs and Practices, these 3 practice structures were present in similar proportions.[personal communication: Elizabeth M. Yano] Though we will not stratify our sample on VA women’s health practice structure, we anticipate that approximately one-third of each VA healthcare user strata will be exposed to each practice structure type.

**Numerical estimate of potential respondent universe  
 by period of military service and VA use strata**

	Pre-Vietnam and older		Vietnam to pre-OEF/OIF		OEF/OIF	
	Universe	Sample	Universe	Sample	Universe	Sample
VA healthcare user (approximately 1/3 for each women’s health practice structure)	44,100	750	166,000	750	25,960	500
Nonuser of VA healthcare	312,900	500	1,108,000	500	43,300	500

We have described the sampling method in Item 2 below.

Response rate estimates are derived from estimates of a large-scale telephone survey conducted with male and female veterans. The sample for that study was derived from VISTA databases maintained by VA medical centers in four southwestern VISNs. This study will use a similar sampling strategy for the user sample. Sample attrition rates due to wrong numbers, non-working numbers, no answers, no contact, unavailable, ineligibility, institutionalization, illness, death, or refusal to participate amounted to 66% of the initial sample. Stern and colleagues reported a similar experience, with an attrition rate of 70% in their 45 minute telephone survey of veterans.<sup>27</sup> We expect a somewhat higher response rate than these studies, because our methods also include a written pre-notification prior to first contact, whereas those studies did not attempt to contact

respondents before the initial call. Prenotification has been shown to increase telephone survey response rates by more than 10 percentage points.<sup>28</sup> With this prenotification approach, in the VISN22 *Women Veterans Ambulatory Care Use: Patterns, Barriers, and Influences (WVACUP)* study, 75.4% of households contacted consented to screening, and 92.5% of eligible women veterans consented to survey participation.<sup>4</sup>

**2. Describe the procedures for the collection of information including: statistical methodology for stratification and sample selection, estimation procedure, degree of accuracy needed for the purpose described in the justification, unusual problems requiring specialized sampling procedures, and any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

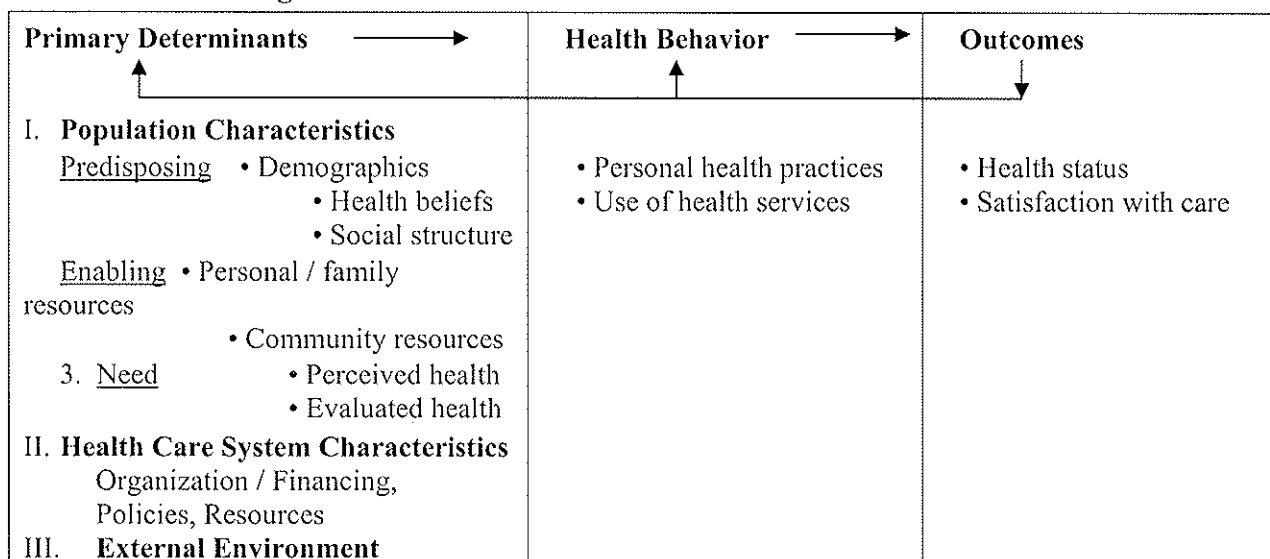
### Overview of Study.

To achieve the study's specific aims, we will conduct a nationwide telephone survey of women veteran VA healthcare users and VA-nonusers to measure demographic, military and health characteristics, characteristics of ambulatory care use, and barriers to and decision-making about VA ambulatory care use. Self-reported VA utilization will be verified with administrative utilization data from the Austin Automation Center (AAC). Sampling strategies, the survey instrument, and data collection protocols are adapted from those used in the *WVACUP* study.

### Conceptual Framework for Health Care Use.

In this study, we will use the Andersen-Aday Behavioral Model of Health Care Utilization as our conceptual framework to explore patterns, barriers and influences on VA ambulatory care use by women veterans.<sup>29-30</sup> The original framework describes an array of variables (predisposing, enabling, and need) that predict the utilization of physician, dentist, and hospital services. The model suggests that use is a function of a predisposition by people to use health services, factors that enable or impede such use, and need for care. Health care use influences health outcomes, and health outcomes, in turn, alter the need for health care and subsequent health behavior. The Behavioral Model has been modified several times over the past 30 years, so that the current version conceptualizes access to care that result in optimal patient outcomes (Figure 1).<sup>30-31</sup>

**Figure: The Behavioral Model for Health Care Utilization**



As a function of *WVACUP*, we adapted this conceptual model for application to women veterans' access to and utilization of health care services, building on Gelberg's guidelines for adapting the model to vulnerable populations.<sup>32</sup> Through a systematic domain development process, we created an analogous set of population characteristics (predisposing, enabling and need), healthcare system characteristics and external environment factors that mapped to the results of qualitative inquiry of women veterans' experiences within and outside the VA and the published literature. The full Behavioral Model would display these primary determinants in relation to health behaviors, which in turn influence health outcomes. In an integrated healthcare system like the VA, where performance measures are tracked, these health outcomes in turn may influence the healthcare system characteristics, closing the loop.

In the application to this study, the population characteristics under study reflect key demographic characteristics (predisposing), the influence of perceived barriers to care (enabling) and disease burden (need) as identified in *WVACUP* analyses and confirmed by expert panel review. We will focus our appraisal of the influence of healthcare system characteristics on the local organization of ambulatory care services (e.g., women's health care practice structure) and of the external environment in terms of geographic region or of VISN. The emphasis of these analyses are to examine the influence of the characteristics of the women veteran population on their health behaviors, specifically on the use and type of ambulatory care services they obtain in terms of general medical, women's health, subspecialty and mental health care. Based on the Behavioral Model, ascertainment of the primary determinants of women veterans' use of specific types of ambulatory care services should provide strong insights into mechanisms for improving the design of high-quality equitable health care delivery models.

#### Telephone Survey of Women Veterans.

*Study Design, Setting and Subjects:* A nationwide telephone survey of a stratified random sample of women veterans will be conducted, with stratification on two categories of current VA ambulatory care use (VA user, VA nonuser) and three periods of military service (pre-Vietnam era and older, Vietnam era to pre-OIF/OEF, and OIF/OEF). Veterans who are currently serving on active duty (e.g., veterans who are reservists that were activated) and current employees of the Department of Veterans Affairs will be excluded. Eligibility will be determined by screener questions located at the start of the telephone interview.

*Sample Size and Power Calculations:* Power calculations are designed to compare VA users and VA nonusers taking into account each of the major period of military service groupings. Older era (pre-Vietnam and older) and OIF/OEF veterans will be over-sampled to enroll 750 individuals in each of the pre-Vietnam and Vietnam to pre-OIF/OEF VA user groups, 500 individuals in the OIF/OEF VA user group, and 500 individuals in each of the VA nonuser groups, for a target sample size of 3,500.

#### **Target sample size and detectable odds ratio by strata and planned comparison**

	Pre-Vietnam and older	Vietnam to pre-OIF/OEF	OIF/OEF
	<i>Target sample size</i>		
VA healthcare user	750	750	500

Nonuser of VA healthcare	500	500	500
	<b><i>Detectable odds ratio (80% power)</i></b>		
Comparing VA users and VA nonusers	1.4	1.4	1.44
Comparisons among VA healthcare users exposed to different women's health practice structures	1.7	1.7	2.1

This sample size and distribution will allow for detection of odds ratios comparing VA users and VA nonusers of 1.4 in the pre-Vietnam and older and in the Vietnam to pre-OIF/OEF groups, and odds ratios of 1.44 for the OIF/OEF groups. These calculations assume a 2-sided significance level of 0.05, 80% power, base proportions similar to those of the *WVACUP* dataset (the occurrence of a "yes" on dichotomous predictors having a proportion between 0.3 to 0.7), and a squared multiple correlation of the predictor in question with other independent variables of no more than 0.2. Given our proposed survey measures on gender-specific satisfaction and use, and our planned medical record linkage, this design will allow us to detect an odds ratio of 1.7 (2.1 for OIF/OEF VA users) for the effect of VA women's health practice structure type on use of specific services, satisfaction with health care, and other utilization measures.

*Subject Identification:* Two sub-populations constitute the sample of survey participants: (1) women veterans who are currently using VA medical facilities for their care (*VA-users*), and (2) women veterans who are *not* current users of VA care (*VA-nonusers*). We define current users as those who have had at least one visit to a VA medical facility within the 12-month period prior to the start of the study. Conversely, VA-nonusers are defined as those who have not visited a VA medical facility within the past 12 months. VA-nonusers consist of women veterans who may have *formerly* used VA facilities for their care, as well as those who *never* used VA care. The vast majority of VA-nonusers have never used VA care.<sup>4</sup>

The VA National Enrollment Database (NED) is comprised of all VA enrollees, including some who have never used VA healthcare. Data fields within this database identify period of military service and current VA health care users. For each period of military service strata, the VA user sample will be randomly selected from a master list of women veterans who are in the NED and identified as current VA health care users. A master list of VA-nonusers will be created from three databases: women veteran VA-nonusers from NED, women veterans from the Compensation and Pension (C&P) Veterans Benefits Administration file, and women veterans from the US Department of Defense (DoD) Defense Enrollment and Eligibility Record System (DEERS). The C&P database of enrollees for any veteran benefit includes both enrollees and non-enrollees for VA healthcare. The DEERS database includes all women veterans who have been discharged from the military within the last 10 years. VA health care users from NED will be deleted from the master list to create the non-user sampling frame from which to select the non-user sample. Period of military service is a data field within this sampling frame. The source database (NED, C&P, or DEERS) will be retained as a data field. We will determine the percent of nonusers in each source database. Then, to select the nonuser sample, for each period of military service strata, nonusers will be randomly selected in a proportional allocation based on the percent of nonusers in the source database. The rationale for this approach is to minimize the effects of potential systematic biases in the databases that may be associated with decision-making about VA healthcare use.

*Subject Recruitment:* An advance packet of materials that includes a cover letter, a Question and Answer brochure, a tear off sheet, and a business reply envelope will be mailed to each women veteran sample member randomly selected to participate in the telephone survey. The letter will explain the purpose of the study and what they will be asked to do as study participants. The letter emphasizes the voluntary nature of their survey participation. It also serves to alert potential respondents that a VA trained study interviewer will call to answer any questions they may have about the study and to request their participation in the survey. The Q&A brochure presents information about the study and their survey participation in a question and answer format and covers all topics relevant to making an informed decision about whether or not to participate. The Q&A includes the following information: voluntary nature of participation, confidentiality and privacy assurances, ability to withdraw from the study at any time during the interview, and ability to refuse to answer any specific question. It also provides appropriate contact information, should participants have a question or wish to request deletion of any or all of the information they provided during the interview. The advance packet will also include a tear off sheet and a self-addressed business reply envelope in the packet of materials potential respondents receive. The tear off sheet will provide potential respondents the opportunity to update their contact information and to advise the study of the best time to call. The study's interviewers will call potential respondents to request their participation in the telephone interview. Every attempt will be made to maintain the representative nature of the sample. We will adhere to requests for best time to call. Advance letters returned by the post office with new address information will be re-mailed.

Study interviewers will begin calling respondents about ten days after letters and Q&A brochures are mailed. This time frame gives respondents a chance to receive and review the study materials, but still enables recall of information contained there. Interviewers will ask whether they received the advance materials. Those that indicate that they did not will be offered the opportunity of having the letter mailed to them again, either before or after the interviewer proceeds with the telephone interview. The interviewer will explain that the telephone script provides virtually the same information as the written study materials but in a verbal format, and that it is up to them to decide whether to wait until after they review the letter or to proceed.

*Data Collection:* Fieldwork will be conducted by the survey research firm, California Survey Research Service, Inc. (CSRS), based in Van Nuys (Los Angeles), CA. The VA Greater Los Angeles Health Services Research and Development (HSR&D) Center of Excellence currently has a business associate agreement with CSRS, as required by HIPAA regulations. CSRS is a research organization specializing in telephone and mail survey data collection, and data processing. CSRS has extensive experience in public policy, consumer products and services, and business-to-business research, among other areas. In addition, CSRS has experience working with the VA on other telephone surveys of veterans. To the extent possible, we will try to recruit from the same pool of interviewers that conducted the VISN22 *WVACUP* telephone survey and a subsequent Los Angeles area homeless women veteran survey. We will also provide 2 days of training in study specific interview techniques and in confidentiality procedures.

Before the telephone interview, the interviewer will conduct a brief screener. If the respondent is eligible to participate, the study interviewer will proceed to the telephone consent script. Respondent agreement or refusal to participate will be entered directly in the database.

Supervisors will validate 10% of the interviews each interviewer conducts to assure data accuracy and to confirm that interviewers are following protocols with respect to obtaining agreement using the telephone consent script. Data entry and validation of responses is accomplished through Computer Assisted Telephone Interview (CATI) technology. As part of telephone consent, respondents are informed that electronic monitoring may occur for quality purposes. CATI supervisors conduct interview validations by observing on the computer monitor what the interviewer records. To maintain respondent privacy and the confidentiality of responses, supervisors observe and listen to the interview in a private office, using headsets attached to telephone equipment. After completion of the telephone interview, the interviewer thanks the respondent and that ends their study participation.

*Measurements:* The main dependent variable in analyses will be ambulatory care use during the prior 12 months. This will include mental health and general medical care utilization in both VA and non-VA facilities. VA and non-veteran facility utilization data will be obtained by respondent self-report. VA facility utilization will also be obtained from the Outpatient Clinic File (OPC) housed at the VA Austin Automation Center. OPC data will include facility(s) for care and clinic stop codes for all outpatient visits during the prior 12 months. Self-reported utilization data will not be validated against administrative or medical record data for non-veteran facility users. Ambulatory care use will be characterized on multiple dimensions, including:

- Facility type for care (VA only, non-VA only, dual VA and non-VA use);
- Services used (women's health, other primary care, mental health, other);
- Type of VA use (all care, primary care, predominantly episodic care, backup care only);
- Intensity of VA use (VA use for all, most, some, or no care);
- Amount of use (number of ambulatory care visits to VA and to non-VA facilities); and
- Usual source of care (VA facility, non-VA facility, none).

Though 18 months is the timeframe used by many VA facilities to classify veterans as currently enrolled for care, we will limit our measures of ambulatory care use to 1 year, to reduce the potential for recall bias. An additional dependent variable for some analyses will be historical VA ambulatory care use (VA use currently, formerly, never). Reasons for using and for not using the VA, determinants of the decision of former VA users to stop using the VA, and satisfaction with VA care will be assessed.

Independent variables representing domains in the Behavioral Model for Health Care Utilization are listed in the table below. Examples of gender and veteran-related predisposing, enabling, and need measures include: perception of VA environment and of VA women's health (quality and availability of needed services), service-connected disability rating, and obstetrical and military sexual trauma history. Generic (applicable to the general population) predisposing, enabling, and need variables from the Behavioral Model will be measured, to assess their independent effect on VA ambulatory care use, and to minimize their potential confounding effect on the relation between gender and veteran-related factors and VA ambulatory care use.<sup>33</sup> Examples of generic predisposing variables include age, race-ethnicity, and education; enabling factors include insurance and income; need factors include self-rating of health and activity limitations.<sup>34-35</sup> In addition, needs assessments on mental health<sup>36</sup> and alcohol use issues will be

incorporated using brief screeners for depression (the SF-12 mental component scale),<sup>34-35</sup> anxiety disorders (from the MHI-5)<sup>36</sup> post-traumatic stress disorder (the Breslau 7-item scale),<sup>37</sup> and alcohol dependence (the AUDIT-C).<sup>38-39</sup>

**Table: Survey measures**

<b>Conceptual model domains</b>	<b>Survey measures</b>
<b>Population Characteristics</b> <u>Predisposing:</u> Demographic  Health beliefs  Other social structures	<ul style="list-style-type: none"> <li>• Age</li> <li>• Race / ethnicity</li> <li>• Education</li> <li>• Employment</li> <li>• Marital status</li> <li>• Knowledge of VA eligibility, benefits, &amp; women's health care</li> <li>• Attitudes about VA environment</li> <li>• Perception of VA ambulatory care quality</li> <li>• Desire to receive all care at one site</li> <li>• Preference for a women's health clinic</li> <li>• Military status (length of time in service, combat exposure)</li> <li>• Period of military service</li> <li>• VA women's health practice structure*</li> </ul>
<u>Enabling:</u> Individual  Community	<ul style="list-style-type: none"> <li>• Annual income</li> <li>• Health insurance</li> <li>• VA service-connected disability rating</li> <li>• Usual source of care</li> <li>• Perceived barriers to VA care (structural &amp; cultural)</li> <li>• Proximity to other health services</li> </ul>
<u>Need:</u> Perceived  Evaluated/Clinical	<ul style="list-style-type: none"> <li>• Self-rating of health (SF-12)</li> <li>• Symptoms</li> <li>• Health conditions</li> <li>• Service connected disability</li> <li>• Military sexual trauma</li> <li>• Obstetrical history</li> <li>• Screeners for PTSD, depression, anxiety, and alcohol abuse</li> </ul>
<b>Behavior /Outcomes</b> Use of health services  Health Status Satisfaction with care	<ul style="list-style-type: none"> <li>• Ambulatory care use <ul style="list-style-type: none"> <li>- Facility type (VA, non-VA, dual VA and non-VA)</li> <li>- Type of use (all care, back-up, episodic, specialty)</li> <li>- Services used</li> <li>- Amount / intensity of use</li> </ul> </li> <li>• Self-rating of health (SF-12)</li> <li>• Satisfaction with care</li> </ul>

\*VA women's health practice structure derived from survey measures, and verified with AAC utilization data



### Other data sources.

*VA administrative data* from the Austin Automation Center (AAC data) will provide in-patient and out-patient utilization, including VA site of care and stop codes for determination of VA clinical setting for care, for the subset of survey respondents who used VA healthcare services. The *VHA Survey of Women Veterans Health Programs and Practices* will provide data on the scope of available women's health services at VA healthcare sites.<sup>40-42</sup>

### Analysis plan.

We will adjust for our sampling design and for any potential non-response bias by using probability weighting of the resultant sample. The weights will be developed from the inverse of the probabilities of inclusion in the sample, where the probability of inclusion is a product of the stratum sampling weight (determined from the relative size of the survey stratum with respect to the population) and of a response weight. In turn, the probability of responding (consenting to survey participation) will be estimated using a logistic regression model, where the outcome variable is whether or not a given individual was included in the sample and the independent variable will be any demographic (or other available) variables obtained from sampled and non-sampled individuals.

For each dependent variable measuring use, frequencies and proportions will be determined for the full sample, and by period of military service grouping. Bivariate analyses will be conducted between each pair of dependent variables, to test for associations. Self-reported utilization data for VA users will be validated against utilization data obtained from VA administrative databases. To compare the types of services used from the self-report and administrative data, clinic visit stop codes from the OPC will be clustered into the response options from the telephone survey (e.g., women's health, other primary care, mental health, other).

Multivariate logistic and linear regression techniques will be used to identify determinants of VA ambulatory care use. All models will be checked to verify satisfaction of underlying statistical assumptions. Non-normally distributed variables will be transformed, and correlations between predictor variables will be checked for multicollinearity. To test for regional variation in patterns and predictors of ambulatory care use, dummy variables will be entered into the model for all VISNs except VISN22. VISN22 was chosen for the reference VISN because of the availability of *WVACUP* data that may provide a historical comparison with the current study. If the number of covariates relative to the sample size for any particular comparison is small, then geographic region (eastern, central, southern, and western) will be used in place of VISN in the model.

When use is measured as a binomial variable, a logistic regression model will be applied. Odds ratios and 95% confidence intervals (C.I.) will be calculated. The statistical model to be used in the logistic regression will take the form  $y = f(\text{predisposing factors, enabling factors, need factors})$ , where  $y$  denotes either specific service used (e.g., VA women's health care), type of use (e.g., primary care), or having a VA usual source of care. In this model, the predisposing, enabling, and need factors include both generic factors from the Behavioral Model and measures specific to the women veteran survey. Our analyses will allow us to assess mental health utilization, for example, as a function of a positive depression or PTSD screen, military sexual trauma history, usual source of care, and other factors.

When use is measured as a categorical variable (e.g., VA women's health practice structure), a multinomial (polychotomous or generalized) logistic regression model will be used. When use is measured as an ordinal variable (e.g., VA use currently / formerly / never), an ordinal logistic regression model will be applied if the appropriate assumptions are met. When use is measured as a discrete variable (level of VA use), a log transformation or Poisson regression will be run since the distribution is expected to be skewed. The Poisson regression has a logistic regression interpretation.<sup>43</sup>

Specified order linear or logistic regression analyses will be conducted to measure the explanatory effects on VA ambulatory care use of major domains of variables. Major domains of interest for this analysis include gender-related factors and military-related factors. Related sets of independent variables will be entered hierarchically into multivariable analyses. Traditional factors influencing health services use will be entered in the first model. Gender-specific factors and military-specific factors (including period of service) will be added both separately (models 2 and 3) and together (model 4). The adjusted  $R^2$  (or a goodness of fit statistic for logistic regression) and the statistically significant predictors of use will be contrasted for the different models. This will allow for a measure of the amount of variability in VA ambulatory care use that is explainable by each domain of variables.

**3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.**

Our methods for maximizing response rates include a written pre-notification prior to first contact. Pre-notification has been shown to increase telephone survey response rates by more than 10 percentage points. To maximize responses to individual survey items, we will use CATI technology for data collection, entry, and validation.

**4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents.**

The survey and instructions will be pre-tested in up to 9 individuals.

**5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.**

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