## B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1. **Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g. establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.**

   The respondent universe consists of a probability-based sample of active duty and Reserve members of the US military, identified through service rosters as of October 1, 2000 (Panel 1), October 1 2003 (Panel 2) and October 1 2006 (Panel 3). In Panel 1 military personnel who had served in Southwest Asia, Bosnia, and Kosovo (after 1997) were over-sampled such that they matched 1:1 with personnel who did not deployed to those areas. Additionally, Reserve, National Guard, and female service personnel were over-sampled to assure power to investigate hypotheses in these smaller subgroups of the military population. The entire cohort will represent approximately a 3.7% sample of the 2.7 million persons in uniform. The 19,200 personnel projected to become civilians after becoming participants while in military service, were expected to follow a random attrition process from military service and expected to be similar in makeup to the respondents in general. In Panel 2 Marines were oversampled to compensate for a relatively low response rate in Panel 1. Targets for oversampling in panel 3, if any are required, have yet to be defined

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

   A stratified random sampling process was employed to reduce bias, allow for external validity after weighting, and ensure enough statistical power to address small subgroups or the population reasonably well. The Millennium Cohort Study questionnaire will be sent via the U.S. Postal Service to participants every 3 years allowing information to be acquired without burdening participants with yearly questionnaires.

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

Response rates are maximized principally through employment of modified Dillman Mail and Electronic Survey Methods. Each participant will be sent up to but no more than three paper questionnaires or three email requests to participate depending on whether or not s/he has responded to the last questionnaire/email request sent. Each questionnaire mailing/email-request-to-participate is followed two weeks later by a reminder postcard/reminder email. If a participant has not responded after 3 such invitations and we have not received notice that the address at which we attempted to reach them was 'bad", we infer that the questionnaire/email-request was received by the participant and by default that they have chosen not to participate. Such individuals are classified at that time as non-respondents. Protocol requires that 3 attempts be made to rectify "bad" addresses. New "good" addresses are sought from the Internal Revenue Service through contract with NIOSH.

The vast majority of questions comprising the Millennium Cohort Study Questionnaire are derived from instruments previously vetted in military and non-military populations including the Seabee Health Survey, the Patient Health Questionnaire, The National Health Survey of Persian Gulf War Era Veterans, The Health Update – SF-36V, The Complementary and Alternative Medicines Questionnaire, the CAGE Questionnaire for Detecting Alcoholism, the Michigan Alcohol Screening Test (MAST) and the Occupational Conversion Index.

Paper questionnaires are printed as scannable Teleform documents. Quality control evaluation of data from panel 1 shows that participants are entering both paper and electronic questionnaire data coherently and reliably with an average of fewer that one unreadable entries per questionnaire in our most recent sampling.

Demographic data on all invited personnel will be examined to determine differences distributions among responders and non-responders. This will allow us, through weighting techniques and other statistical approaches, to ensure external validity of the respondent population to the general military population. Additionally, a sample of 3% of the non-respondents will be contacted using computer-assisted telephone interview (CATI) techniques to determine reasons of non-response.

4. **Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval.**

Following preliminary focus group evaluations of the draft questionnaire conducted in late 1999 with military enlisted and officer groups, a pilot study was conducted on a 1% sample of military personnel in the spring of 2000 as a means of testing the utility of the instrument. Following this pilot corrections were made to the produce the final instrument.

5. **Provide the name and telephone number of individuals consulted on the 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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