Defense Health Agency

2014 Health Related Behaviors Survey of Active Duty Personnel

Methodology

December 2015

Defense Health Agency (DHA)

2014 Health Related Behaviors (HRB) Active Duty Survey – Methodology

December 2015

Presented by

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1.0 Study Methodology

The 2014 HRB Active Duty Survey is modelled on the HRB Survey conducted among military personnel for more than 30 years. The Department of Defense (DoD) initiated the HRB Survey in 1980 to guide program and policy development based on an improved understanding of the nature, causes and consequences of substance use in the military. The analysis of the survey results was guided by research objectives that assess the prevalence, nature, and characteristics of health related behaviors. This document provides methodological information about survey administration, data preparation and analysis, and reporting.

1.1 Study Population

The eligible population for the 2014 HRB Active Duty Survey includes all members of the Army, Navy, Marine Corps, and Air Force who are non-deployed and on Active Duty at the time of data collection. National Guard and Reserve members in Active Duty programs and deployed personnel are not included in the population. Coast Guard personnel are not included in the study population.

1.2 Sample

In 2011, DHA changed the mode of administration among the Active Duty population to a web-based format, which eliminated the need for geographically clustered sample and resulted in the introduction of a stratified sample. In line with the approach for the 2011 Active Duty survey, the 2014 HRB Survey utilized a web-based approach with a non-proportional, stratified random sample. The following variables were used for stratification purposes: Service, gender, and pay grade, for a total of 48 possible strata. The four Services were considered primary strata for sampling.

On November 13, 2014, DMDC provided a final sampling for the preparation of a non-proportional stratified sample and determination of the sample size and allocation. The initial specification identified a population size of 1,270,978 individuals. Table 1.2 shows the population distribution by strata.

Table 1.2 Population Parameters					
	Army	**Air Force**	**Navy**	**Marine Corps**	**All DoD Services**
Gender					
Male	415,936	240,647	251,488	169,688	1,077,759
Female	67,760	57,235	54,265	13,959	193,219
Pay Grade					
E1-E4	208,402	110,246	122,645	109,910	551,203
E5-E6	127,949	96,572	102,143	40,026	366,690
E7-E9	53,918	31,104	28,541	13,212	126,775
O1-O3	48,231	34,468	30,420	12,046	125,165
O4-O10	30,611	25,490	20,466	6,397	82,964
W1-W5	14,585	2	1,538	2,056	18,181
Total	**483,696**	**297,882**	**305,753**	**183,647**	**1,270,978**

When distributing the survey to Navy personnel, two issues emerged. Firstly, survey invitations sent to Navy personnel bounced back at a higher rate (between 12 and 17%) compared to other Services and at a higher rate than is considered standard. Secondly, survey invitations sent to a specific type of email address in the Navy (@training.navy.mil) were not successfully transmitted. To mitigate these issues, a replacement sample was drawn to replace the Navy email addresses that were unreachable. This approach successfully increased the number of responses collected from Navy personnel.

The sampling approach was similar to the original and resulted in 13,731 replacement sample members. This new sample comprised personnel who had not already been sampled and excluded personnel with the @training.navy.mil email address domain. Because the entire population had been sampled for some strata, it was not possible to request additional sample for those strata.

1.3 Survey Questionnaire

The 2014 HRB Active Duty Survey instrument was based on the instrument of the 2011 HRB Active Duty Survey. The 2011 HRB Active Duty Survey represented a new instrument from previous survey efforts, with considerable changes made to streamline and tailor it for a web distribution. This new format substantially eased respondent burden as it enabled the use of skip logic which dynamically updates the instrument based on selections. In addition, Deloitte revised the instrument slightly to make the questionnaire reflect current priorities. These changes are detailed in Appendix A.

1.4 Licensing and Approvals

The survey was licensed; the DoD Report Control Symbol (RCS) number is DD-HA(BE)2189. The survey research protocol was reviewed and approved by Liberty Institutional Review Board (IRB) on November 13, 2014. The Office of the Assistant Secretary of Defense for Health Affairs/Defense Health Agency (OASD HA/DHA) Human Subjects in Research Protection Office provided secondary approval on August 8, 2014, for both the Reserve and Active Duty surveys. A Data Sharing Agreement was approved on December 12, 2014. Additionally, a letter of support from Dr. Jonathan Woodson was created on September 24, 2014.

1.5 Survey Administration

DHA fielded the HRB Active Duty Survey online. Unique survey links were created that only the intended respondent could use, and survey invitations were distributed via email. Because of this functionality, respondents were able to save their progress and re-visit the survey if they were unable to complete it in one sitting.

The survey was fielded over five months, beginning in December 2014. Eight reminder emails were distributed throughout the fielding period. The survey effort experienced a high bounce-back rate for all Services early in administration; the introduction of a digital signature resolved this issue with all Services except for Navy. On April 1, 2015, the survey was distributed to replacement Navy personnel sample to mitigate challenges in reaching the original Navy sample members (see Section 1.2). Three reminder emails were distributed to replacement sample.

Email communications conveyed the importance and purpose of the survey, confidentiality of responses, and DoD support of the effort. The Strategic Communications team at DHA

promoted the survey through internal channels to increase awareness and familiarity with the survey and in turn, yield a higher response rate.

Respondents who wanted to verify the legitimacy of the request or authority of the survey or who wanted to address questions to a military source were forwarded to DHA's Analytics Division Senior Health Care Research Analyst, Dr. Kimberley Marshall-Aiyelawo. Respondents could also verify the survey's legitimacy by visiting the DHA survey web page. Information on survey support and verification were provided on every page of the survey. Technical support to address respondent concerns was provided by a helpdesk, accessible via email and a toll-free telephone number.

1.6　Respondents

Of the initial sample, a portion of the subjects invited to participate were ineligible to complete the survey because the survey invitation email was delivered to an inactive email account (i.e., bounced back) but this was resolved by adding a digital signature to email communications and pulling replacement sample for Navy personnel. Of the eligible respondents, a small percentage submitted unusable responses. Usable responses were those that remained after the data cleaning procedures listed below were conducted and the response was determined to be complete, meaning the respondent had 1) started the survey, 2) answered two key questions in the demographic section, and 3) answered at least one question in the alcohol section (Q45 through Q69). Additionally, some personnel did not consent to the survey and therefore exited the survey. Table 1.6 summarizes the disposition of responses.

Table 1.6 Sample and Responses Received							
	Sample					**Responses**	
	Initial Sample	**Unusable: Email Bounce-backs***	**Unusable: On Deployment or in Reserves**	**Unusable: Did Not Consent**	**Final Sample**	**Initial Responses**	**Unusable**	**Final Responses**
Army	79,310	0	284	1361	77,665	15,332	4,073	11,259
Air Force	69,513	0	320	1712	67,481	22,299	5,576	16,723
Navy	65,599	0	739	1093	63,767	14,296	2,784	11,512
Marine Corps	50,514	0	316	760	49,438	8,718	2,226	6,492
Total	**264,936**	**-**	**1,659**	**4,926**	**258,351**	**60,645**	**14,659**	**45,986**

1.6.1　Data Cleaning Procedures

We conducted data cleaning and checking procedures to ensure a high level of quality control for the survey results. In accordance with the Privacy Act, all identifiers such as name and address were removed to ensure that respondents could not be identified. Our data cleaning protocol included the following steps:

1. **Examine for out-of-range values.** Simple frequencies were performed on all survey items to determine if any out-of-range values existed.
2. **Delete blank records.** If 100% of the non-demographic items were missing or blank, the record was deleted.

3. **Review straight-liners.** Items existed throughout the survey that require responses both at the high end of the scale and low end of the scale to be answered consistently. If a respondent answered using the same response category for a certain percentage of questions in a given survey section, it was likely that the respondent was not reading the question and was simply answering the same way for all questions. Such records were flagged for further consideration.

4. **Delete test cases.** Any data gleaned from test cases were removed prior to analysis of actual respondent data.

5. **Combine numeric variables where applicable.** Several numeric variables (e.g., height and weight) were coded over two variables. These were combined into a single variable.

6. **Code the skip patterns.** Respondents whose records included no response to certain questions because of skip patterns were identified so that they were not coded as missing data.

1.6.2 Response Rates

Response rate calculation followed protocols from the 2011 Active Duty Survey. Response rate reports were calculated by taking the number of completed surveys (defined as a respondent having started the survey and submitting a valid response to two key demographic questions and one question in the alcohol section) and dividing it by the size of the sample that was reached (number of emails sent minus the number of bounce backs received). Response rates were prepared overall and by Service.

The overall response rate was 17.8%. The highest response rates were obtained from the Air Force, followed by the Navy and the Army. The lowest response rate was obtained from the Marine Corps.

The total number of respondents reached in the sample and the total number of useable responses are displayed by Service and overall in the Table 1.6.2.
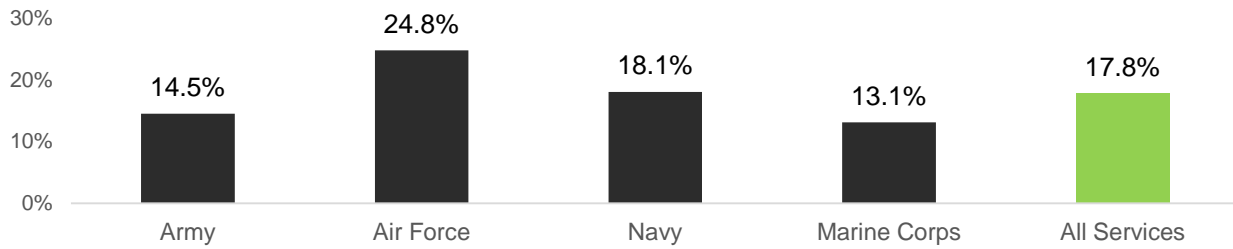
Response Rates
December 29, 2014 – May 18, 2015

Table 1.6.2 Overall Response Rate					
	Army	**Air Force**	**Navy**	**Marine Corps**	**Total**
Completed Responses	11,259	16,723	11,512	6,492	*45,986*
Sample Reached *(number of emails sent minus the number of bouncebacks received)*	77665	67481	63767	49438	*258,351*
All Services Population *(DMDC estimate in Winter 2014)*	483,696	297,882	305,753	183,647	*1,270,978*
Response Rate *(response / sample reached)*	14.50%	24.78%	18.05%	13.13%	**17.80%**
Percentage of All Services Represented *(responses / All Services population)*	2.3%	5.6%	3.8%	3.5%	**3.6%**

1.7 Non-Response Analysis

A non-response analysis was conducted to detect any systematic differences between individuals who completed the survey and those who did not complete the survey. Both unit and item non-response were analyzed to confirm that the missingness in the data was missing at random.

The analysis assumed that the non-responses can be considered as ignorable non-responses; that is, missing at random (MAR, meaning that the response probability does not depend on outcome variables but only on demographic variables). To detect unit non-response bias, comparisons of respondents versus non respondents across strata were evaluated by applying logistic regression on the demographic variables (including Service, paygrade, and gender to determine stratification). No other demographic variable other than Service, paygrade, and gender was statistically significant with α=5%. We noted that some demographic variables (e.g., paygrade and age) are correlated, but because we fixed the three variables for stratification in the model, the other correlated variables are not significant given this model specification.

Therefore, we consider all subjects in the same stratum to have the same response rate and performed the nonresponse weighting adjustment.

To examine the data for item non-response bias, key questions from each survey section were modeled as predictors against sociodemographic characteristics. The two analyses concluded that weighting the data to account for item and unit nonresponse in the analyses was most appropriate. Weighting procedures are detailed below.

1.8 Weighting

The data weighting approach was consistent with the weighting approach used in the 2011 Active Duty survey. A full weight was calculated using two weights: 1) a base weight was calculated to account for the disproportionate stratification approach and unequal selection probabilities among strata, and 2) a differential non-response weight.

1) *Design weight* is the inverse of the selection probability (number of cases fielded/frame size). It accounts for the differences in the basic probability of selection among strata. The probability of selection varied between strata because the stratum sizes differed. The design weight accounts for these differences. There were 48 strata defined by the respondent's Service (four groups), gender (two groups), and pay group (six groups). For a case *i* in sub-stratum *h (h=1,2,...,48)*, the design weight was calculated as:

$$w1_{ih} = \frac{N_h}{n_h}$$

where N_h is the population count and n_h is the number of sampled units in sub-stratum

h.

2) The second weight adjusts for differential response rates across strata. Respondents in a stratum with a lower response rate will represent more cases in that stratum than a case in a stratum with a higher response rate. An adjusted response rate is the number of useable surveys (defined as a respondent having completed key demographic questions and at least one question in the alcohol section) divided by the number of eligible respondents reached. The response rate is calculated separately for each stratum. For a case *i* in sub-stratum *h*, the nonresponse weight was calculated as:

$$w2_{ih} = \frac{n_h}{r_h}$$

where n_h is the number of sampled units and r_h is the number of completed cases in sub-stratum *h.*

The full weight adjusts the combined effects of unequal selection probabilities and differential nonresponses, and is calculated by:

$$w3_{ih} = w1_{ih} \times w2_{ih} = \frac{N_h}{r_h}$$

2.0 Results Interpretation

2.1 Analytic Approach

Data analyses were designed to respond to research questions aimed at measuring key health behaviors to guide policy and program development. The approach was as streamlined and straightforward as possible while maintaining analytical robustness. For the sake of continuity, past HRB Survey reports were considered in the development of this plan, and analyses were aligned to past reports where possible.

Data were analyzed according to the research objectives outlined in the 2014 HRB Survey Analysis Plan using SAS Version 9.4. Most analysis are descriptive statistics presented as two- or three-way cross-tabulations. Chi-square tests of association were used to identify differences in the distributions of categorical variables. To provide more information on specific differences in estimates, pairwise comparison of estimates were conducted and Bonferroni adjustments were applied to p-values to minimize Type I error as a result of performing multiple comparisons. For some research objectives, logistic analysis was conducted.

Beginning in 1992, the HRB Survey has benchmarked military health behaviors against the U.S. Department of Health and Human Services' (HHS) Healthy People objectives. In continuation of this approach, the 2014 HRB survey results were compared with Healthy People 2020 Objectives where possible. Further, comparisons to national, well-regarded civilian surveys were included where possible.

2.2 Appending Sample Data

Each respondent completed a survey using a link unique to them. The unique link methodology allowed response patterns to be followed closely. Additionally, after the survey closed and the data were downloaded, the following sample data were connected to corresponding survey responses: Service, gender, and pay grade. No email addresses or any other identifiable information were attached to survey responses in order to protect respondent privacy. Sample data were used in cases where respondents did not provide a response as to their Service, gender, or pay grade. Additionally, six respondents self-reported as Officer Trainees, which was not an officially recognized Pay Grade category. The paygrades for these six respondents were replaced with their pay grade values from the sample data file (E5 – E6).

2.3 Approach to Comparisons

This section describes the methods used to compare these survey results to two other populations. Specifically, comparisons were conducted between the 2014 Active Duty survey results and 2011 Active Duty results, as well as to 2014 Reserve Component survey results. The section covers:
1) Theoretical approach and how it compares to past approaches
2) Data preparation, including exact variables used comparisons and data weighting
3) Data analysis, including specific statistical techniques used

Analysis was also conducted to make comparisons of current survey estimates to estimates from the 2011 HRB Survey of Active Duty Personnel and from the 2014 HRB Survey of Reserve Personnel. To do so, we conducted hypothesis tests to examine 1) whether the difference between the estimates (proportions) for the 2011 HRB Active Duty survey and the 2014 HRB Active Duty survey was statistically significant, and 2) whether the difference between the

estimates (proportions) for 2014 HRB Active Duty Survey and 2014 HRB Reserve Component Survey was statistically significant.

Samples were obtained by stratified sampling from each of the respective populations, and sampling weights were calculated to account for the representativeness. Because none of the samples was collected by simple random sampling with a 100% response rate, the two-sample proportion test was not appropriate. While mean estimates could be calculated with straightforward sampling weight adjustment, the variance computation needed to take into account the extent of the departure from the variance of simple random sampling by leveraging the concepts of design effect and effective sample size. We utilized the Kish formula to calculate the effective size based on the sampling weights for each sampling population. The final sampling error calculation can correct the departure from the sampling error expected under simple random sampling. Therefore, the statistical hypothesis tests have taken into account the representativeness of the samples and yielded sound statistical inferences.

2.4   Reporting Approach

Survey results were reported using two formats: a series of 10 written reports and infographics. These reporting modes were designed to make the HRB survey data as useful as possible for stakeholders, both for understanding results and for use in decision-making.

2.4.1   Topical Reports

The topical reports are content-focused, digestible reports designed to make survey findings accessible to leadership and other stakeholders. The topical reports include findings responding to research objectives and by topic. They are stand-alone Word documents each with their own analyses and recommendations. Four Service reports provide an overview of results for each of the four Services. The six topical reports address the following topics:

- Physical Health and Healthy Lifestyle
- Alcohol Use
- Nicotine and Tobacco Use
- Substance Use and Abuse; Installation Policy on Substances
- Stress/Mental Health
- Deployment

2.4.2   Infographics

Infographic reports were created to provide visual representations of the data for communicating key results to all audiences. These graphics accompany the written topical reports. The infographics were provided in a PDF format, allowing them to be shared with stakeholders without the need for additional software.

2.5   Variability and Suppression of Estimates

The survey team followed the same protocols for variability and suppression of estimates as reported in the 2011 Active Duty Survey results. Throughout the topical reports, analytic tables present the estimate and the standard error. The estimate represents the percentage of the population with the characteristics defined in the columns and rows of each table. The standard

error is a measure of variability that is calculated when presenting survey estimates from a sample rather than from the total Active Duty population.

When reporting estimates from survey data, it is common to suppress estimates that may be statistically unreliable or that have low response rates which may jeopardize respondent confidentiality.[1] Estimates may be unreliable if they are based on a small sample size or if there are large sampling errors, as reflected in the standard error. In keeping with standards from previous HRB surveys, such unreliable estimates were not presented in the 2014 HRB reports. Estimates were suppressed if the following criteria were met:

1. For mean estimates, a relative standard error (RSE), the ratio of the standard error to the estimate, greater than 30%;[2]
2. For estimates expressed as proportions, an RSE of the natural log of the estimate greater than 0.225;[3] or
3. The number of cases in the denominator of an estimate was fewer than 30 service members.

Suppressed estimates are indicated with a dagger (†) in the report tables.

2.6 Study Limitations and Data Interpretation Notes

Limitations of this survey effort reflect the inherent limitations in survey research. The HRB study is based on self-reported data, for which respondents provide data about their own behaviors. Accuracy of this information is dependent on respondents' ability and willingness to provide correct information. Military personnel in particular may be less likely than others to report sensitive information due to the strict military code of conduct. Measures were taken to assure respondents about the confidentiality of their responses, but the distribution of the survey through military email addresses may impair that message. Concerns about confidentiality may lead to personnel underreporting sensitive behaviors. Where possible, data were interpreted in the context of other sources of information, such as well-regarded health-related behavior surveys for the civilian population. Lastly, it is important to note that several variables were created based on survey responses that suggest a possible mental health problem. These are not clinical diagnoses; creation of these variables are based on protocols used in the 2011 HRB Active Duty Survey.

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[1] Blumberg, S. J. (2008). Cell suppression. In P. J. Lavrakas (Ed.), Encyclopedia of survey research methods, volume 1. (p. 90). Los Angeles, CA: SAGE Publications, Inc.

[2] Klein, R.J., Proctor, S.E., Boudreault, M.A., & Turczyn, K.M. (2002). Healthy People 2010 Criteria for Data Suppression. *Healthy People 2010*, *24*, 1-11. A number of surveys that provide Healthy People benchmarks use an RSE of greater than 30% as criterion for estimate suppression, including: Medical Expenditure Panel Survey (MEPS), National Ambulatory Medical Care Survey (NAMCS), National Health Interview Survey (NHIS), National Health and Nutrition Examination Survey (NHANES), National Hospital Ambulatory Medical Care Survey (NHAMCS), National Hospital Discharge Survey (NHDS), National Survey of Family Growth (NSFG).

[3] Use of the RSE is problematic with proportions because it imposes stricter suppression requirements on very small estimates than it does on very large estimates. The sample size required for small proportions to achieve a very small standard error is much larger than the sample size required for an estimate closer to 0.5. The RSE $[-\ln(p)] = SE(p)/(-p*\ln(p))$ where p is the estimate and $SE(p)$ is the standard error of the estimate; for proportions greater than 50%, the RSE was calculated using $1-p$. This is consistent with estimate suppression of proportions in prior Health Related Behaviors survey reports.

3.0 Appendix A: Changes Made to the 2014 HRB Active Duty Web Survey

The 2014 HRB Active Duty Survey is based on the 2011 HRB Active Duty Survey. Deloitte made revisions to the questionnaire to update it based on current priorities and to maintain consistency with the 2014 Reserve Component Survey.

Appendix A is organized to show:
1) The question added to the 2014 HRB Active Duty Survey based on an addition made in the 2014 HRB Reserve Component Survey
2) The questions modified from the 2011 HRB Active Duty Survey based on changes made to the 2014 HRB Reserve Component Survey
3) The questions removed from the 2011 HRB Active Duty Survey

3.1 Question Added to the 2014 HRB Active Duty Survey

BASE: ALL RESPONDENTS
Q181   Are you taking this survey on...

a.   A personal computer
b.   A computer on base
c.   Other

3.2 Questions Modified From the 2011 HRB Active Duty Survey

Original Question	2014 Active Duty HRB Question	Explanation of the Change
BASE: ALL RESPONDENTS - MANDATORY **Q1. In which Service are you serving?** 1. Army 2. Navy 3. Marine Corps 4. Air Force 5. Coast Guard	BASE: ALL RESPONDENTS **Q1. In which Service are you serving?** 1. Army 2. Navy 3. Marine Corps 4. Air Force	Removed Coast Guard as they are no longer included in the survey population. The question is no longer mandatory as sample data will contain this information.
BASE: ALL RESPONDENTS - MANDATORY **Q3. What is your current pay grade?** 1. E1 - E4 2. E5 - E6 3. E7 - E9 4. Officer Trainee 5. WO1 - WO5 6. O1 - O3 7. O4 - O10	BASE: ALL RESPONDENTS **Q4. What is your current pay grade?** 1. E1 - E4 2. E5 - E6 3. E7 - E9 4. Officer Trainee 5. WO1 - WO5 6. O1 - O3 7. O4 - O10	The question is no longer mandatory as sample data will contain this information.
BASE: ALL RESPONDENTS - MANDATORY **Q4. Are you…?** 1. Male 2. Female	BASE: ALL RESPONDENTS **Q6. Are you…?** 1. Male 2. Female	The question is no longer mandatory as sample data will contain this information

Original Question	2014 Active Duty HRB Question	Explanation of the Change
BASE: ALL RESPONDENTS - MANDATORY **Q18. Are you currently married?** 1. No 2. Yes	BASE: ALL RESPONDENTS - MANDATORY **Q20. Are you currently married?** 1. No 2. Yes 3. Decline to answer	Added "Decline to answer" as an option to maintain respondents' ability to opt out of answering a question
BASE: ALL RESPONDENTS **Q19. Is your spouse or significant other now living with you at your present duty location?** 1. I do not have a spouse or significant other 2. No, not living with me 3. Yes, living with me	BASE: ALL RESPONDENTS – MANDATORY **Q23. Is your spouse or significant other now living with you at your present duty location?** 1. I do not have a spouse or significant other 2. No, not living with me 3. Yes, living with me 4. Decline to answer	Made the question mandatory and added "Decline to answer" as an option to maintain respondents' ability to opt out of answering a question
Q51. During the PAST 30 DAYS, on how many days did you have [IF MALE INSERT '5'; IF FEMALE INSERT '4'] or more drinks of beer, wine, or liquor on the same occasion? 1. About every day 2. 5 to 6 days a week 3. 3 to 4 days a week 4. 1 to 2 days a week 5. 2 to 3 days in the past 30 days 6. 1 day in the past 30 days 7. Not at all in the past 30 days	**Q62. During the PAST 30 DAYS, on how many days did you have…** **If you are male: …5 or more drinks of beer, wine, or liquor on the same occasion?** **If you are female: ... 4 or more drinks of beer, wine, or liquor on the same occasion?** 1. About every day 2. 5 to 6 days a week 3. 3 to 4 days a week 4. 1 to 2 days a week 5. 2 to 3 days in the past 30 days 6. 1 day in the past 30 days 7. Not at all in the past 30 days	Changed the question language to avoid using display logic within the question
BASE: USED ANY FORM OF SMOKELESS TOBACCO EVER (Q81=2) **Q73. During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco?** 1. About every day 2. 5 - 6 days a week 3. 3 - 4 days a week 4. 1 - 2 days a week 5. 2 - 3 days a month 6. About once a month 7. Less than once a month 8. I have not used chewing tobacco, snuff, or other	BASE: USED ANY FORM OF SMOKELESS TOBACCO EVER (Q81=2) – MANDATORY **Q84. During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco?** 1. About every day 2. 5 - 6 days a week 3. 3 - 4 days a week 4. 1 - 2 days a week 5. 2 - 3 days a month 6. About once a month 7. Less than once a month 8. I have not used chewing tobacco, snuff, or other	Made the question mandatory and added "Decline to answer" as an option to maintain respondents' ability to opt out of answering a question

Original Question	2014 Active Duty HRB Question	Explanation of the Change
smokeless tobacco in the past 12 months	smokeless tobacco in the past 12 months 9. Decline to answer	
BASE: CAUSED OR HAD AN UNINTENDED PREGANCY IN THE PAST 12 MONTHS **Q96A. What form of birth control were you/your partner using when the unplanned pregnancy occurred? Please select ONE OR MORE responses that apply to you.** 1. No form of birth control 2. Birth control pills 3. IUD 4. Withdrawal method 5. Biological rhythm (natural family planning) 6. Other form of birth control	BASE: CAUSED OR HAD AN UNINTENDED PREGANCY IN THE PAST 12 MONTHS **Q109. What form of birth control were you/your partner using when the unplanned pregnancy occurred? Please select ONE OR MORE responses that apply to you.** 1. No form of birth control 2. Birth control pills 3. IUD 4. Withdrawal method 5. Biological rhythm (natural family planning) 6. Condoms 7. Other form of birth control	Added condoms to the list of choices
BASE: ALL RESPONDENTS **Q110. In the PAST 12 MONTHS, how many times did you drive or ride on a motorcycle?** 1. 40 or more times 2. 21 - 39 times 3. 11 - 20 times 4. 1 - 10 times 5. I didn't drive or ride on a motorcycle in the past 12 months	BASE: ALL RESPONDENTS – MANDATORY **Q120. In the PAST 12 MONTHS, how many times did you drive or ride on a motorcycle?** 1. 40 or more times 2. 21 - 39 times 3. 11 - 20 times 4. 1 - 10 times 5. I didn't drive or ride on a motorcycle in the past 12 months 6. Decline to answer	Made the question mandatory and added "Decline to answer" as an option to maintain respondents' ability to opt out of answering a question
BASE: ALL RESPONDENTS **Q109, In the PAST 12 MONTHS, about how many miles did you drive a privately-owned motorcycle on public roads and highways?** 1. 0 - not in the past 12 months 2. Less than 1,000 miles 3. 1,000 - 5,000 miles 4. 5,001 - 7,500 miles 5. 7,501 - 10,000 miles 6. 10,001 - 12,500 miles 7. 12,501 - 15,000 miles 8. More than 15,000 miles	BASE: DROVE OR RODE ON A MOTORCYCLE IN THE PAST 12 MONTHS **Q121, In the PAST 12 MONTHS, about how many miles did you drive a privately-owned motorcycle on public roads and highways?** 1. 0 - not in the past 12 months 2. Less than 1,000 miles 3. 1,000 - 5,000 miles 4. 5,001 - 7,500 miles 5. 7,501 - 10,000 miles 6. 10,001 - 12,500 miles 7. 12,501 - 15,000 miles 8. More than 15,000 miles	Changed the base from "All Respondents" to "drove a motorcycle in the past 12 months"; this necessitated switching the order of the questions in this section
BASE: ALL RESPONDENTS **Q107. In the PAST 12 MONTHS, how often did you wear a**	BASE: DROVE OR RODE ON A MOTORCYCLE IN THE PAST 12 MONTHS	Changed the base from "All Respondents" to "Drove a Motorcycle in the Past 12

Original Question	2014 Active Duty HRB Question	Explanation of the Change
helmet when you drove or rode on a motorcycle? 1. Always 2. Often 3. Sometimes 4. Seldom 5. Never 6. I didn't drive or ride on a motorcycle in the past 12 months	**Q122. In the PAST 12 MONTHS, how often did you wear a helmet when you drove or rode on a motorcycle?** 1. Always 2. Often 3. Sometimes 4. Seldom 5. Never 6. I didn't drive or ride on a motorcycle in the past 12 months	Months"; this necessitated switching the order of the questions in this section
BASE: ALL RESPONDENTS **Q123. Do you feel that you experience more stress in the military because you are a [IF MALE (Q4=1) INSERT 'man'; IF FEMALE (Q4=2) INSERT 'WOMAN]?** 1. No 2. Yes	BASE: ALL RESPONDENTS **Q135. Do you feel that you experience more stress in the military because of your gender?** 1. No 2. Yes	Changed the question language to avoid using display logic within the question

3.3 Questions Removed

Demographic questions for the Coast Guard population were removed because Coast Guard personnel are not included in the target population. Several additional questions were removed; these topics included internet usage, deployment to several specific relief missions, and sexual orientation; they are also listed below.

Demographics

BASE: COAST GUARD (Q1=5) - MANDATORY
Q2A. Within which United States Coast Guard district is your unit located? Please select ONE.
Click here to see a map of Coast Guard

1. Headquarters - Washington, DC [need to align codes in dataset to match these]
2. District 1
3. District 5
4. District 7
5. District 8
6. District 9
7. District 11
8. District 13
9. District 14
10. District 17
11. Other Command:____[Q2A_a]

BASE: COAST GUARD (Q1=5) - MANDATORY
Q2B. Are you serving on shore, sea, or air duty? Please select ONE.

1. Shore duty
2. Sea duty
3. Air duty

Internet Usage

BASE: ALL RESPONDENTS
Q117. Have you ever done the following online? Please select ONE response per row.

[GRID PRESENTATION]
1. No, never
2. Yes, but more than 30 days ago
3. Yes, within PAST 30 DAYS

[RANDOMIZE A-I]
a. Made a purchase online
b. Bid on a product in an online auction
c. Participated in an online survey
d. Posted a picture or commented on a picture on Facebook
e. Logged in to a checking account online
f. Watched a video on YouTube
g. Browsed online classified ads (such as Craig's List)
h. Downloaded music (for computer, iPod, etc.)
i. Gambled for money online

Deployment

BASE: ALL RESPONDENTS
Q144. Were you actively involved in the rescue, recovery or cleanup for the following missions?

[GRID PRESENTATION]
1. No
2. Yes

a. The Deep Water Horizon oil spill in the gulf
b. The earthquake in Haiti

BASE: ACTIVELY INVOLVED IN EITHER DEEP WATER HORIZON OR HAITI RELIEF MISSION (Q144a-b=2)
Q145. If you were involved in the following, do you have lasting memories, such as nightmares, recurring thoughts or generalized sadness resulting from the events? Please select ONE response per row.

[GRID PRESENTATION]
1. A lot
2. Some
3. A little
4. None at all
5. Not involved in this mission

a. Deep Water Horizon oil spill mission
b. Haiti earthquake mission

Sexual Orientation

BASE: ALL RESPONDENTS
Q109. Do you think of yourself as…?

1. Heterosexual ('straight')
2. Gay or Lesbian
3. Transgender
4. Bisexual
5. Something else
6. Not at all sure

BASE: ALL RESPONDENTS
Q110. People are different in their sexual attraction to other people. Which best describes your feelings?

1. Only attracted to males
2. Mostly attracted to males
3. Equally attracted to males and females
4. Mostly attracted to females
5. Only attracted to females
6. Not attracted to either males or females
7. Not sure

4.0 Appendix B: Demographic Analysis

The tables below display unweighted frequencies and distributions of demographic attributes overall and by Service. The purpose of this information is to equip future researchers with unweighted responses to plan for sampling and weighting.

Notes: All questions were optional, so frequencies for individual questions may not sum to the total frequency who submitted a useable survey. Questions deemed particularly important were displayed to respondents twice if they attempted to skip the question; the second time the question was presented, an option of "Decline to answer" was presented. That response option is included in the tables below, where applicable.

Q1AD. In which Service are you serving?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
	100%, 45,986	24.5%, 11,259	36.4%, 16,723	25%, 11,512	14.1%, 6,492

Q2AD. In which type of unit do you serve? Please select ONE response only. If you are in a unit which might be classified as more than one type, which most often describes the work that you do in the unit?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
Infantry (including airborne, air assault, amphibious assault forces)	2.6%, 1,190	5.9%, 669	0.1%, 16	0.5%, 52	7.0%, 453
Armored/Tank	0.7%, 335	2.1%, 232	0.0%, 2	0.0%, 1	1.5%, 100
Artillery/Naval gun crew	1.1%, 526	2.7%, 308	0.0%, 2	0.2%, 27	2.9%, 189
Combat engineer	1.4%, 628	2.0%, 224	1.0%, 174	0.7%, 82	2.3%, 148
Aircraft aircrew	6.9%, 3,190	4.4%, 491	9.0%, 1,498	6.2%, 708	7.6%, 493
Aircraft/Missile command and control	1.3%, 607	1.0%, 116	1.7%, 282	0.6%, 68	2.2%, 141
Reconnaissance, surveillance, or target acquisition	1.2%, 564	0.9%, 98	2.1%, 354	0.6%, 69	0.7%, 43
Communications, signals, or military intelligence	7.7%, 3,529	9.1%, 1,026	8.1%, 1,349	4.7%, 540	9.5%, 614
Headquarters, command, or administrative	15.1%, 6,937	15.5%, 1,749	13.4%, 2,244	14.4%, 1654	19.9%, 1,290
Logistics (including acquisition, supply or personnel transportation, storage, or distribution)	8.2%, 3,776	9.6%, 1,083	7.8%, 1,312	4%, 463	14.1%, 918
Maintenance or repair - computers or electronics	1.1%, 519	0.4%, 47	0.9%, 149	1.5%, 174	2.3%, 149
Maintenance or repair - vehicles	1.1%, 515	2%, 220	0.5%, 85	0.3%, 30	2.8%, 180
Maintenance or repair - ship, aircraft, missile, or space systems	7.4%, 3,418	0.9%, 104	11.0%, 1846	8.6%, 988	7.4%, 480

	All Services	Army	Air Force	Navy	Marine Corps
Maintenance or repair - other	1.8%, 823	0.6%, 69	2.8%, 472	1.3%, 155	2.0%, 127
Food preparation or food service	0.7%, 326	0.6%, 71	0.8%, 138	0.6%, 67	0.8%, 50
Medical, dental, or other healthcare	16.9%, 7,767	20.5%, 2,309	17.7%, 2,967	21.6%, 2,488	0.0%, 3
Recruitment	1.4%, 626	1.7%, 195	0.7%, 119	1.6%, 184	2.0%, 128
Security, military police, maritime enforcement/rescue	2.8%, 1,284	2.7%, 303	3.9%, 648	1.5%, 172	2.5%, 161
Training/Education	6.2%, 2,864	7.5%, 847	5.6%, 935	6.2%, 717	5.6%, 365
Afloat (Ships & Submarines)	1.8%, 843	0.0%, 0	0.0%, 1	7.3%, 842	0.0%, 0
Ashore	2.1%, 975	0.0%, 0	0.0%, 0	8.5%, 975	0.0%, 0
Other type of unit not listed	10.3%, 4740	9.7%, 1096	12.7%, 2128	9.2%, 1056	7.1%, 460
Decline to answer	0.0%, 2	0%, 1	0%, 1	0%, 0	0%, 0

Q3. What is your current pay grade?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
E1-E4	10.8%, 4,947	5.4%, 606	14.7%, 2,466	9.0%, 1,034	13.0%, 841
E5-E6	17.8%, 8,176	13.8%, 1,551	21.0%, 3,506	18.2%, 2,094	15.8%, 1,025
E7-E9	24.2%, 11,133	24.1%, 2,719	23.9%, 4,004	22.2%, 2,555	28.6%, 1,855
Officer Trainee	--	--	--	--	--
WO1-WO5	5.1%, 2,323	12.8%, 1,439	--	3.4%, 387	7.7%, 497
O1-O3	18.5%, 8,511	18.5%, 2,087	19.0%, 3,177	19.5%, 2,241	15.5%, 1,006
O4-O10	23.7%, 10,896	25.4%, 2,857	21.3%, 3,570	27.8%, 3,201	19.5%, 1,268

Q4. Are you…?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
Male	56.6%, 26,011	51.3%, 5,778	50.1%, 8,386	58.3%, 6,713	79.1%, 5,134
Female	43.4%, 19,975	48.7%, 5,481	49.9%, 8,337	41.7%, 4,799	20.9%, 1,358

Q6. What was your annual household income from ALL sources last year? Your annual household income includes your salary as well as that of your spouse or significant other if you reside together. Please estimate your annual household income before taxes were taken out.

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
Less than $15,000	1.5%, 711	1.3%, 143	2.0%, 335	1.0%, 116	1.8%, 117
$15,000 to $19,999	2.0%, 909	1.2%, 130	2.6%, 428	1.6%, 179	2.6%, 172
$20,000 to $24,999	4.5%, 2,068	2.2%, 249	5.1%, 857	4.7%, 541	6.5%, 421

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
$25,000 to $34,999	5.8%, 2,685	4.5%, 507	6.8%, 1140	5.4%, 627	6.3%, 411
$35,000 to $44,999	6.9%, 3,177	5.9%, 662	8.5%, 1429	5.9%, 681	6.2%, 405
$45,000 to $49,999	6.6%, 3,017	6.7%, 756	7.0%, 1172	5.8%, 662	6.6%, 427
$50,000 to $74,999	21.2%, 9,751	23.4%, 2636	21.1%, 3526	18.1%, 2081	23.2%, 1508
$75,000 to $79,999	6.1%, 2,819	6.6%, 738	5.8%, 970	5.7%, 653	7.1%, 458
$80,000 to $84,999	5.0%, 2,294	5.7%, 644	4.5%, 756	4.9%, 565	5.1%, 329
$85,000 to $89,999	4.3%, 1,985	4.8%, 541	3.9%, 655	4.4%, 504	4.4%, 285
$90,000 to $94,999	4.1%, 1,901	4.4%, 496	4.0%, 671	4.1%, 474	4.0%, 260
$95,000 to $99,999	3.8%, 1,745	4.3%, 482	3.3%, 557	4.1%, 470	3.6%, 236
$100,000 or more	27.5%, 12,638	28.6%, 3219	24.5%, 4093	33.9%, 3903	21.9%, 1423
Decline to answer	0.6%, 278	0.5%, 55	0.8%, 129	0.5%, 55	0.6%, 39

Q7. How long have you been on active duty? If you had a break in service, count current time and time in previous tours, but NOT time during the break in service.

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
1 month or less	0.0%, 5	0.0%, 1	0.0%, 3	0.0%, 1	0.0%, 0
2-3 months	0.0%, 6	0.0%, 0	0.0%, 6	0.0%, 0	0.0%, 0
4-6 months	0.3%, 134	0.3%, 34	0.5%, 77	0.2%, 23	0.0%, 0
7-12 months	1.1%, 447	1.4%, 135	1.5%, 231	0.7%, 71	0.2%, 10
13-18 months	1.9%, 783	1.2%, 121	2.7%, 411	1.2%, 127	2.1%, 124
19-24 months	2.2%, 910	1.6%, 159	2.5%, 386	2.1%, 225	2.3%, 140
25-36 months	4.7%, 1,987	3.0%, 302	5.5%, 848	4.6%, 495	5.7%, 342
More than 3 years	89.8%, 37,791	92.5%, 9,213	87.3%, 13,479	91.2%, 9,736	89.7%, 5,363

Q8. As of today, how many months have you been assigned to your CURRENT permanent post, base, ship, or duty station? Please include any extension of your present tour in your count. However, do NOT count previous tours at this duty station.

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
1 month or less	2.4%, 1,079	2.8%, 311	2.6%, 440	1.8%, 210	1.8%, 118
2 – 3 months	4.8%, 2,188	6.4%, 722	4.3%, 713	4.6%, 528	3.5%, 225
4 – 6 months	11.2%, 5,154	13.3%, 1,493	10.8%, 1,802	10.2%, 1,172	10.6%, 687

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
7 – 12 months	17.5%, 8,028	17.6%, 1,971	16.4%, 2,738	18.1%, 2,082	19.1%, 1,237
13 – 18 months	14.7%, 6,755	14.4%, 1,613	12.7%, 2,119	17.9%, 2,054	15%, 969
19 – 24 months	13.5%, 6,211	12.6%, 1,414	12%, 2,004	15.5%, 1,786	15.5%, 1,007
25 – 36 months	19.9%, 9,113	19.4%, 2,178	18.1%, 3,024	22.1%, 2,544	21.1%, 1,367
More than 3 years	16.0%, 7,355	13.6%, 1,526	23.1%, 3,849	9.7%, 1,112	13.4%, 868

Q9AD. How many months during the PAST 12 MONTHS have you been AWAY from your permanent duty station (berthed out of the area, not at home), not including medical or personal leave?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
0 months	40.5%, 18,458	39.9%, 4,462	43.5%, 7,215	42.0%, 4,796	30.8%, 1,985
Less than 1 month	20.6%, 9,415	19.1%, 2,129	21.9%, 3,640	21%, 2,390	19.5%, 1,256
1 or 2 months	17%, 7,759	17.7%, 1,979	16.3%, 2,698	15.5%, 1767	20.4%, 1,315
3 or 4 months	10.4%, 4,725	12.2%, 1,361	8.8%, 1,455	9.3%, 1,060	13.2%, 849
5 or 6 months	5.5%, 2,528	5.2%, 580	5.1%, 839	5.7%, 648	7.2%, 461
7 or 8 months	3.2%, 1,458	2.2%, 249	3%, 494	3.5%, 396	4.9%, 319
9 or 10 months	1.6%, 739	2.0%, 228	0.8%, 140	2.0%, 230	2.2%, 141
11 or 12 months	1.2%, 535	1.7%, 186	0.7%, 109	1.0%, 119	1.9%, 121

Q12. What is your highest level of education?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
I did not graduate from high school	0.1%, 28	0.0%, 4	0.0%, 3	0.1%, 11	0.2%, 10
GED or ABE certificate	0.3%, 136	0.4%, 46	0.1%, 10	0.6%, 65	0.2%, 15
High school diploma	7.6%, 3,465	3.4%, 387	5.2%, 864	8.3%, 958	19.4%, 1,256
Trade or technical school graduate	0.7%, 333	0.5%, 61	0.8%, 133	0.8%, 87	0.8%, 52
Some college but not a 2- or 4-year degree	19.5%, 8,949	19.3%, 2,167	15.2%, 2,542	20.8%, 2,394	28.5%, 1,846
2-year college degree (AA or equivalent)	15.4%, 7,049	13%, 1,457	22.3%, 3,727	11.7%, 1,344	8%, 521
4-year college degree (BA, BS, or equivalent)	18.8%, 8,616	22.9%, 2,574	15.1%, 2,513	18.6%, 2,142	21.4%, 1,387
Graduate or professional study but no graduate degree	7.3%, 3,337	7.9%, 890	8.3%, 1,382	6.0%, 689	5.8%, 376
Graduate or professional degree	30.5%,13,977	32.5%, 3,647	33.0%, 5,516	33.1%, 3,797	15.7%, 1,017

Variable comprised of: Q13. Are you Hispanic or Latino? And Q14. What is your race? Please select ONE OR MORE responses that best characterize you.

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
Hispanic	12%, 5,456	12.9%, 1,433	10.1%, 1,659	11.4%, 1,292	16.8%, 1,072
Asian	3.5%, 1,603	3.6%, 405	2.9%, 483	5%, 565	2.3%, 150
Black	14.3%, 6,474	21.1%, 2,341	11.5%, 1,888	13.8%, 1,570	10.6%, 675
White	63.2%, 28,637	55.5%, 6,174	68.3%, 11,227	62.6%, 7,099	64.7%, 4,137
Other	1.6%, 742	2.1%, 236	1.2%, 204	1.8%, 203	1.5%, 99
2 or more races	5.3%, 2,394	4.8%, 529	6.0%, 985	5.4%, 616	4.1%, 264

Q15. How old are you?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
24 or younger	10.5%, 4,782	5.7%, 637	13.6%, 2,265	8.5%, 975	14.0%, 905
25-34	33.5%, 15,346	28.3%, 3,167	37.7%, 6,260	33.1%, 3,793	32.8%, 2,126
35-44	40.7%, 18,632	44.5%, 4,979	38.2%, 6,351	39.6%, 4,540	42.7%, 2,762
45 or older	15.3%, 6,988	21.6%, 2,417	10.4%, 1,728	18.8%, 2,162	10.5%, 681

Q18. Are you currently married?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
No	29.0%, 13,326	27.8%, 3,128	31.2%, 5,221	29.3%, 3,375	24.7%, 1,602
Yes	70.8%, 32,568	72.1%, 8,110	68.6%, 11,461	70.5%, 8,119	75.2%, 4,878
Decline to answer	0.2%, 81	0.2%, 17	0.2%, 37	0.1%, 17	0.2%, 10

Variable comprised of: Q28. Do you have any children under age 18 living with you? And Q29. How many children under age 18 live with you?

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
1 child	16.9%, 7,076	18.0%, 1,822	16.1%, 2,477	16.8%, 1,765	17.1%, 1,012
2 children	19.2%, 8,055	18.3%, 1,854	19.3%, 2,973	19.1%, 2,007	20.6%, 1,221
3 children or more	11.0%, 4,630	11.1%, 1,124	10.2%, 1,568	10.4%, 1,089	14.3%, 849
None	52.9%, 22,160	52.5%, 5,312	54.4%, 8,365	53.7%, 5,634	48.0%, 2,849

Q179. Are you taking this survey on…

	All Services %, N	Army %, N	Air Force %, N	Navy %, N	Marine Corps %, N
A personal computer	2.9%, 1,103	5.6%, 517	1.8%, 251	2.3%, 222	2.1%, 113
A government-owned computer	96.8%, 37,193	94%, 8,672	97.9%, 13,789	97.5%, 9,456	97.7%, 5,276
Other	0.3%, 114	0.4%, 38	0.3%, 43	0.2%, 24	0.2%, 9

5.0 Appendix C: Key Definitions and Measures

Below are definitions of measures used in the 2014 HRB Active Duty reports and the HRB survey questions used to calculate each measure.

5.1 Alcohol Use

Drinking Level Classifications
The coding for drinking level classifications is based on the definitions established in the 2010 NHIS. Drinking levels are based on self-reports of the average frequency of alcohol consumption during the past year and the number of drinks the respondent consumed on the days he or she used alcohol. To determine current drinking levels, the number of days the respondent drank is used to calculate the average number of drinks per week, as follows: [(# days per year)(# drinks per year)/365 days].

- An 'Abstainer' is defined as having less than 12 alcoholic drinks in their entire lifetime.
- A 'Former Drinker' is defined as having at least 12 drinks in their lifetime and reported 0 days of drinking in the past 12 months.
- A 'Current Drinker' is defined as having at least 12 drinks in their lifetime and reported 1 or more days of drinking in the past 12 months. Current drinkers are categorized into three levels of drinking intensity.
- An 'Infrequent/Light Drinker' is defined as having less than 4 drinks per week in the past year.
- A 'Moderate Drinker' is defined as having 4 to 14 drinks per week for males, and 4 to 7 drinks per week for females in the past year.
- A 'Heavy Drinker' is defined as having more than 14 drinks per week for males, and more than 7 drinks per week for females in the past year.

The following questions were used to calculate the above classifications.

- **Q45**: Have you had at least 12 alcoholic drinks over your ENTIRE LIFE? Yes/no/decline to answer
- **Q47**: In the PAST 12 MONTHS (365 days), on how many different DAYS would you estimate that you drank any type of alcoholic beverage? Your best guess is fine. 0-365 days
- **Q48.** In the PAST 12 MONTHS, on those days that you drank alcoholic beverages, on the average, how many drinks did you have? Average number of DRINKS you drank per day when you did drink:___[2 DIGITS; 0 - 50]
- **Q4**: Are you…? Male/female

For those who were missing data on Q45 and Q47, Q55 and Q56 were used to calculate frequency and quantity of alcohol consumption in the past year.

- **Q55**: How often do you typically have a drink containing alcohol? Never/less than once a month/once a month/two to three times a month/once a week/two to three times a week/four or more times a week
- **Q56**: How many drinks containing alcohol do you have on a TYPICAL DAY when you are drinking? I don't drink/1 or 2/3 or 4/5 or 6/7 to 9/10 or more

Binge Drinking

The coding for binge drinking is based on the definitions established by NSDUH. Binge drinking is defined as having five or more drinks for males and four or more drinks for females on the same occasion at least once in the past 30 days.

The following question were used to define a binge drinker:

- **Q59:** During the PAST 30 DAYS, what was the largest number of drinks of any form of alcohol you had on one occasion?

AUDIT (Alcohol Use Disorders Identification Test)

The AUDIT (Alcohol Use Disorders Identification Test) scale sum score was calculated to determine the potential for alcohol dependence across military components. The scale uses 10 items, which are recoded based on the AUDIT scale scoring guide developed by the World Health Organization (WHO). Each of the questions has a set of responses to choose from, and each response has a score ranging from 0 to 4. The higher the score, the more risk is indicated. Total scores of 8 or more are recommended as indicators of hazardous and harmful alcohol use, as well as possible alcohol dependence. The response categories reported for this composite score are:

- Range 0-40
- Low Risk (AUDIT score < 8) – Indicates a low risk of alcohol dependence.
- Hazardous Drinking (AUDIT score 8-15) – Indicates a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others.
- Harmful Drinking (AUDIT score 16-19) – Refers to alcohol consumption that results in consequences to physical and mental health, and possibly social life.
- Possible Alcohol Dependence (AUDIT score of 20+) – Is a cluster of behavioral, cognitive, and physiological phenomena that may develop after repeated alcohol use. This phenomena can include a strong desire to consume alcohol, impaired control over its use, persistent drinking despite harmful consequences, and increased alcohol tolerance.

In order to calculate this, the AUDIT categorical indicator was computed to classify the risk levels of drinking across the military. The categories and cut-scores corresponding to each category are based on scoring guidelines developed by the WHO.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q55**: How often do you typically have a drink containing alcohol? Never/less than once a month/once a month/two or three times a month/once a week/two to three times a week/four or more times a week
- **Q56**: How many drinks containing alcohol do you have on a TYPICAL DAY when you are drinking? I don't drink/1 or 2/3 or 4/5 or 6/7 to 9/10 or more
- **Q57:** Please indicate how often you do the following. Never/Less than monthly/monthly/weekly/daily or almost daily
  - **A**: How often do you have six or more drinks on one occasion?
  - **B**: How often during the past year have you found that you were not able to stop drinking once you had started?
  - **C**: How often during the past year have you failed to do what was normally expected of you because of drinking?
  - **D**: How often during the past year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
  - **E**: How often during the past year have you had a feeling of guilt or remorse after drinking?

- o **F**: How often during the past year have you been unable to remember what happened the night before because you have been drinking?
- **Q58:** For each question below, have you EVER experienced the following because of drinking? No/Yes, but not in the past year/yes, during the past year
    - o **A**: Have you or someone else been injured as a result of your drinking?
    - o **B**: Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?

Unhealthy Drinking

To summarize and describe Active Duty Personnel with the highest risk of drinking behavior based on the classification systems used in the HRB survey, a measure was to identify individuals who were classified in at least one of the following excessive categories (based on their respective classifications described above):

- being classified as a heavy drinker
- being classified as a high-frequency binge drinker (defined as someone who engages in binge drinking at least once per week, on average)
- being identified as a higher risk drinker according to AUDIT score (defined as an AUDIT score greater than or equal to 8). We have characterized these individuals as unhealthy drinkers to represent their increased risk for negative health and social consequences.

Work Related Productivity Loss in the Past 12 Months

The survey contains 11 items related to the frequency of alcohol-related work productivity loss in the past 12 months. Response options for Q52 and Q53 are on a 4-point scale, ranging from "0 times" to "3 or more times." Response options for Q54 are on a slightly different 4-point scale, ranging from "0 work days" to "3 or more work days." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, response options were first recoded into a dichotomous variable to represent whether alcohol-related work productivity loss had occurred or had not occurred at least once in the past 12 months. We then summed and recoded the 11 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q52:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
    - o **C**: I was arrested for a drinking incident not related to driving.
    - o **F**: I got a lower score on my efficiency report or performance rating because of my drinking.
    - o **G**: I hit my spouse/significant other after having too much to drink.
    - o **H**: I got into a fight where I hit someone other than a member of my family when I was drinking.
    - o **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
    - o **I**: I had an illness connected with my drinking that kept me from duty for a week or longer.

- **Q54:** On how many work days (including both civilian and military) in the PAST 12 MONTHS did the following things happen to you? 3 or more work days/2 work days/1 work day/0 work days
    - **A**: I was hurt in an on-the-job accident because of my drinking.
    - **B**: I was late for work or left work early because of drinking, a hangover, or an illness caused by drinking.
    - **C**: I did not come to work at all because of a hangover, an illness, or a personal accident caused by drinking.
    - **D**: I worked below my normal level of performance because of drinking, a hangover, or an illness caused by drinking.
    - **E**: I was drunk while working.
    - **F**: I was called in during off-duty hours and reported to work feeling drunk.

Serious Consequences Related to Alcohol Use in the Past 12 Months

There are 15 items in the survey related to the frequency of serious consequences associated with alcohol use in the past 12 months. Response options are on a 4-point scale, ranging from "0 times" to "3 or more times." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, we first recoded response options into a dichotomous variable to represent whether a serious consequence had occurred or had not occurred in the past 12 months. We then summed and recoded the 15 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months. The questions used in this calculation were:

- **Q52:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
    - **A**: I found it harder to handle my problems because of my drinking.
    - **B**: I received UCMJ punishment (e.g., Court Martial, Article 15, Captain's Mast, Office Hours, Letter of Reprimand, etc.) because of my drinking.
    - **D**: I had trouble on the job because of my drinking. 3 or more times/2 times/1 time/0 times
    - **E**: I didn't get promoted because of my drinking.
    - **I**: My spouse or live-in fiancé/boyfriend/girlfriend threatened to leave me or left me because of my drinking.
    - **J**: My spouse or live-in fiancé/boyfriend/girlfriend asked me to leave because of my drinking.
    - **K**: I did something sexually that I regretted.
    - **L**: I had trouble with the police (civilian or military) because of my drinking.
    - **M**: I spent time in jail, stockade, or brig because of my drinking.
- **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
    - **C**: I was arrested for driving under the influence of alcohol.
    - **F**: I was hurt in an accident because of my drinking (e.g., vehicle, work, other).
    - **G**: My drinking caused an accident where someone else was hurt or property was damaged.
    - **H**: I received detoxification treatment in a hospital or residential center because of my drinking.

- J: I had to have emergency medical help because of my drinking.
- K: I was hospitalized because of my drinking.

Risk Behaviors Related to Alcohol Use in the Past 12 Months

The survey contains 4 items related to the frequency of alcohol-related risk behaviors in the past 12 months. Response options are on a 4-point scale, ranging from "0 times" to "3 or more times." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, we first recoded response options into a dichotomous variable to represent whether a risk behavior had occurred or had not occurred in the past 12 months. We then summed and recoded the 4 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
  - A: I operated power tools or machinery when I had too much to drink.
  - B: I drove a car or other vehicle when I had too much to drink.
  - D: I rode in a car or other vehicle driven by someone who had too much to drink.
  - E: I drove or rode in a boat, canoe, or other watercraft when I had too much to drink.

Drinking Facilitators

There are 10 items in the survey related to facilitators of alcohol use, such as fitting in with people, drinking to be sociable, and peer pressure. Response options for Q63 are on a 4-point scale, ranging from "Not at all important" to "Very important." Response options for Q64 are on a slightly different 4-point scale, ranging from "Strongly disagree" to "Strongly agree." The response categories reported for this composite score are:

- Important
- Agree

In order to calculate this, we combined the top two response choices to indicate importance ("Very important" and "Somewhat important") for Q63, and to indicate agreement ("Strongly agree" and "Agree") for Q64.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q63:** How important is each reason TO YOU for drinking alcohol? Very important/somewhat important/not very important/not at all important
  - A: As a way to celebrate.
  - B: To be sociable.
  - C: To fit in with people you like.
  - D: To forget about your problems.
  - E: To cheer up when you're in a bad mood.
  - F: Because your friends pressure you to drink.
  - G: So that others won't kid/tease you about not drinking.
  - H: I like to drink/I enjoy drinking.

- o **Q64:** For the following statements, how much do you agree or disagree with each? Strongly agree/agree/disagree/strongly disagree/don't know
- o **B**: Drinking to the point of losing control is acceptable.
- o **D**: Drinking is part of being in my unit.

Drinking Deterrents

The survey contains 6 items related to deterrents to alcohol use, such as upsetting friends and family and getting in trouble with the authorities. Response options for Q64 are on a 4-point scale, ranging from "Strongly disagree" to "Strongly agree." Response options for Q65 are on a slightly different 4-point scale, ranging from "Not at all likely" to "Extremely likely." The response categories reported for this composite score are:

- Agree
- Likely

In order to calculate this, we combined the top two response choices for Q64 to indicate agreement ("Strongly agree" and "Agree") and for Q65 to indicate likelihood ("Extremely likely" and "Very likely").

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q64:** For the following statements, how much do you agree or disagree with each? Strongly agree/agree/disagree/strongly disagree/don't know
  - o **A**: Alcoholic beverages cost too much for me.
  - o **C**: Alcoholic beverages are difficult for me to get.
- **Q65:** How likely are you to experience the following if you were to drink alcohol? Extremely likely/very likely/somewhat likely/not at all likely
  - o **A**: Upsetting my family/friends.
  - o **B**: Affecting my military career negatively.
  - o **C**: Doing things that I'd be sorry for later.
  - o **D**: Getting in trouble with the police or military authorities.

5.2 Tobacco Use

Cigarette Smoking Classifications

The coding for cigarette smoking classification levels is based on the definitions established in the 2010 NHIS. The response categories reported for this composite score are:

- An 'Abstainer' is defined as smoking less than 100 cigarettes in their lifetime.
- A 'Former' smoker is defined as smoking at least 100 cigarettes in their lifetime, but does not currently smoke cigarettes now.
- A current smoker is defined by the criteria described above for "current cigarette smoker," and then split into three categories of smoking intensity.
- An 'Infrequent' smoker reports smoking cigarettes "Some days."
- A 'Light/Moderate' smoker reports smoking cigarettes "Every day" and on average, currently smokes less than 20 cigarettes (less than one pack) per day.
- A 'Heavy' smoker reports smoking "Every day" and currently smokes 20 or more cigarettes per day (1 pack or more) on average.

The following questions were used to calculate the above classifications.

- **Q70:** Have you smoked at least 100 cigarettes in your entire life? No/Yes
- **Q73:** Do you NOW smoke cigarettes every day, some days or not at all? Every day/Some days/Not at all

- **Q75:** On the average, how many cigarettes do you now smoke a day? 0-99

Smokeless Tobacco Classifications

The coding for smokeless tobacco classification levels will use two items. The response categories reported for this composite score are:

- An 'Abstainer' is defined as no lifetime use of chewing tobacco, snuff, or any other form of smokeless tobacco.
- A 'Former' smokeless tobacco user reports use of smokeless tobacco products in their lifetime, but has not use in the past 12 months.
- An 'Infrequent' user reports use of smokeless tobacco products "about once a month" or less in the past year. Respondents classified as using smokeless tobacco
- 'Some days' report using more than once a month, but not on a daily basis in the past year.
- 'Every day' reports smokeless tobacco use on a daily basis in the past 12 months.

The following questions were used to calculate the above classifications.

- Q81: Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q82: During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco? About every day/5 - 6 days a week/3 - 4 days a week/1 - 2 days a week/2 - 3 days a month/About once a month/Less than once a month/I have not used chewing tobacco, snuff, or other smokeless tobacco in the past 12 months

Current Smokeless Tobacco Classification

The coding for current smokeless tobacco classification levels will use two items. A "Current" smokeless tobacco user reports use of smokeless tobacco products in their lifetime and using about once a month or more within the past year. The response categories reported for this composite score are:

- Yes, current smokeless tobacco user
- No

The following questions were used to calculate the above classifications.

- Q81: Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q82: During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco? About every day/5 - 6 days a week/3 - 4 days a week/1 - 2 days a week/2 - 3 days a month/About once a month/Less than once a month/I have not used chewing tobacco, snuff, or other smokeless tobacco in the past 12 months

Smokeless Tobacco Use in the Past 30 Days

The coding for smokeless tobacco use in the past 30 days will use two items. This measure is used to compare Active Duty prevalence to the Healthy People 2020 objectives. The response categories reported for this composite score are:

- Yes, used within the past 30 days
- No

The following questions were used to calculate the above classifications.
- Q81: Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q84: When was the last time you used chewing tobacco, snuff, or other smokeless tobacco? Today/During the past 30 days/More than 1 month ago but within the past 6 months/More than 6 months ago but within the past year/More than 1 year ago but within the past 2 years/More than 2 years ago

Any Nicotine Use
The coding for any nicotine use uses six items. The response categories reported for this composite score are:
- Yes, nicotine use in past 12 months
- No

The following questions are used to calculate the above classifications.
- **Q70:** Have you smoked at least 100 cigarettes in your entire life? Note: Smoking at least 100 cigarettes would be equal to 5 or more packs in your entire life. No/Yes
- **Q72:** When was the last time you smoked a cigarette? Today/During the past 30 days/1 - 3 months ago/4 - 6 months ago/7 - 12 months ago/1 - 3 years ago/More than 3 years ago
- **Q81:** Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- **Q84:** When was the last time you used chewing tobacco, snuff, or other smokeless tobacco? Today/During the past 30 days/More than 1 month ago but within the past 6 months/More than 6 months ago but within the past year/More than 1 year ago but within the past 2 years/More than 2 years ago
- **Q87:** During the PAST 12 MONTHS, how often have you smoked the following? About every day/5-6 days a week/3-4 days a week/1-2 days a week/About once a month/Less than once a month/Not in the past 12 months/I never smoked
  - **A:** Cigars
  - **B:** Pipes (including a hookah pipe)
- **Q88:** When was the last time you used any of the following smokeless tobacco products? In the past 12 months/more than 12 months ago/never
  - **A:** Electronic or smoking nicotine delivery products (e.g., E-pipe, E-cigar, E-cigarette, smokeless cigarettes, etc.)
  - **B:** Nicotine dissolvables (e.g., orbs, dissolvable sticks, dissolvable strips, etc.)
  - **C:** Caffeinated smokeless tobacco (e.g., caffeinated snuff or dip)
  - **D:** Nicotine gel

5.3 Substance Use

Overall Illicit Drug Use
Illicit drug use is measured by the prevalence of nonmedical use of any of the following drugs: marijuana or hashish, synthetic cannabis, cocaine, LSD, PCP, MDMA, other hallucinogens, methamphetamine, heroin, GHB/GBL, inhalants, and prescription drugs. The coding for illicit drug use is based on items derived from the 2010 National Survey on Drug Use and Health

(NSDUH) sponsored by the Substance Abuse and Mental Health Services Administration (SAMSHA). The response categories reported for this composite score are:

- A "Lifetime" user is defined as having used any illicit drug more than 12 months ago.
- A "past 12 month" user is defined as having used an illicit drug more than 12 months ago.
- A "past 30 day user" is defined as having used an illicit drug within the past 30 days.

The following questions were used to calculate the above classifications.

- **Q91:** Have you EVER used the following? Never used/Used at least once in my life/Used at least once in past 12 months/Decline to Answer
    - o **A**: Marijuana or hashish (such as "pot," THC, "weed")
    - o **B**: Synthetic cannabis ("spice," K2, herbal smoking blend)
    - o **C**: Cocaine (including crack)
    - o **D**: LSD (such as "acid")
    - o **E**: PCP (such as "angel dust" or marijuana laced with PCP)
    - o **F**: MDMA (such as "Ecstasy")
    - o **G**: Other hallucinogens (such as peyote, mescaline, psilocybin – "shrooms")
    - o **H**: Methamphetamine (such as "ice," "crystal meth," "speed," "crank")
    - o **I**: Heroin (such as "Smack")
    - o **J**: GHB/GBL (such as "Liquid X," "Gamma 10")
    - o **K**: Inhalants (such as aerosol sprays, gasoline, poppers, "whippets")
- **Q92:** How many days in the PAST 30 DAYS did you use the following? 11 or more days/Used 4 to 10 days/Used 1 to 3 days/0 days
    - o **A**: Marijuana or hashish (such as "pot," THC, "weed")
    - o **B**: Synthetic cannabis ("spice," K2, herbal smoking blend)
    - o **C**: Cocaine (including crack)
    - o **D**: LSD (such as "acid")
    - o **E**: PCP (such as "angel dust" or marijuana laced with PCP)
    - o **F**: MDMA (such as "Ecstasy")
    - o **G**: Other hallucinogens (such as peyote, mescaline, psilocybin – "shrooms")
    - o **H**: Methamphetamine (such as "ice," "crystal meth," "speed," "crank")
    - o **I**: Heroin (such as "Smack")
    - o **J**: GHB/GBL (such as "Liquid X," "Gamma 10")
    - o **K**: Inhalants (such as aerosol sprays, gasoline, poppers, "whippets")

Prescription Drug Use
The coding for prescription drug use is based on items derived from the 2010 National Survey on Drug Use and Health (NSDUH). Prescription drugs are controlled substances that can be legally obtained and possessed with a health care professional's authorization. The HRB survey asks respondents about their use of stimulants, sedatives, pain relievers, and anabolic steroids. The response categories reported for this composite score are:

- A "Lifetime" user is defined as having used a prescription drug more than 12 months ago.
- A "past 12 month" user is defined as having used a prescription drug more than 12 months ago.

- A "past 30 day user" is defined as having used a prescription drug within the past 30 days.

The indicators reported for this composite score are:
- "Overall Prescription Drug Use" or "Any Prescription Use" which includes any use of stimulants, sedatives, pain relievers, or anabolic steroids.
- "Pain Reliever Use" which includes use of pain relievers.
- "Other Prescription Drug Use" which includes use of stimulants, sedatives, or anabolic steroids.

The following questions were used to calculate the above classifications.
- **Q93**: Have you EVER used the following? Never used/used at least once in my life/used at least once in past 12 months/decline to answer
  - **A**: Prescription stimulants or attention enhancers (such as amphetamines, Ritalin, Prescription diet pills, etc.),
  - **B**: Prescription sedatives, tranquilizers, muscle relaxers, or barbiturates (such as Ambien, Quaalude, Valium, Xanax, Rohypnol, Phenobarbital, etc.)
  - **C**: Prescription pain relievers (Oxycodone, Percocet, Cough syrups with codeine, Methadone, etc.)
  - **D**: Prescription anabolic steroids (such as Deca Durbolin, Testosterone, etc.)
- **Q94**: How many days in the PAST 30 DAYS did you use the following? 11 or more days/used 4 to 10 days/used 1 to 3 days/0 days
  - **A**: Prescription stimulants or attention enhancers (such as amphetamines, Ritalin, Prescription diet pills, etc.),
  - **B**: Prescription sedatives, tranquilizers, muscle relaxers, or barbiturates (such as Ambien, Quaalude, Valium, Xanax, Rohypnol, Phenobarbital, etc.)
  - **C**: Prescription pain relievers (Oxycodone, Percocet, Cough syrups with codeine, Methadone, etc.)
  - **D**: Prescription anabolic steroids (such as Deca Durbolin, Testosterone, etc.)

Prescription Drug Misuse
The coding for prescription drug use is based on items derived from the 2010 National Survey on Drug Use and Health (NSDUH). Prescription drugs are controlled substances that can be legally obtained and possessed with a health care professional's authorization. The HRB survey asks respondents about their use of stimulants, sedatives, pain relievers, and anabolic steroids: whether drugs were used, how they were used, and how they were obtained.

"Misusers" are defined as having used a prescription drug in one or more of the following circumstances:
- The drug was not prescribed to the respondent and was used in the past year,
- The drug was used in greater amounts than prescribed, or
- The drug was used to "feel good (get high or "buzzed").

The indicators reported for this composite score are:

- "Overall Prescription Drug Use" or "Any Prescription Use" which includes any use of stimulants, sedatives, pain relievers, or anabolic steroids.
- "Pain Reliever Use" which includes use of pain relievers.
- "Other Prescription Drug Use" which includes use of stimulants, sedatives, or anabolic steroids.

The following questions were used to calculate the above classifications.

- **Q93**: Have you EVER used the following? Never used/Used at least once in my life/Used at least once in past 12 months/Decline to Answer
  - **A**: Prescription stimulants or attention enhancers (such as amphetamines, Ritalin, Prescription diet pills, etc.),
  - **B**: Prescription sedatives, tranquilizers, muscle relaxers, or barbiturates (such as Ambien, Quaalude, Valium, Xanax, Rohypnol, Phenobarbital, etc.)
  - **C**: Prescription pain relievers (Oxycodone, Percocet, Cough syrups with codeine, Methadone, etc.)
  - **D**: Prescription anabolic steroids (such as Deca Durbolin, Testosterone, etc.)

- **Q95**: Have you EVER been prescribed the following? Never prescribed for me/Prescribed for me at least once in my life/Prescribed for me at least once in past 12 months/Decline to Answer
  - Same as above

- **Q96**: How did you obtain the following? Prescribed for me in a prior year/Prescribed for someone else/Obtained another way
  - Same as above

- **Q97**: IF you were prescribed the following in the PAST 12 MONTHS, how did you use it? Please select ONE response per row. Used a lower amount than prescribed/Used as prescribed/Used a greater amount than prescribed
  - Same as above

- **Q99**: What was the reason you took the following in the PAST 12 MONTHS? If there was more than one reason, for each row, Select ONE OR MORE responses that apply to you. To control pain/To feel good (get high or buzzed, etc.)/To reduce depression/To reduce anxiety/To control stress/To help me sleep/To help me stay awake
  - Same as above

5.4 Physical Health

Body Mass Index (BMI)
BMI is a measure of body mass to detect possible weight problems in male and female adults. Respondents are asked two open-ended questions about their weight and height to calculate BMI. The calculation is: (weight in pounds/height in inches^2) * 703. The response categories reported for this composite score are:

- Underweight
- Healthy weight
- Overweight
- Obese

The criteria to fit into the above categories depend on gender and age. Particularly for individuals under 20 years old, there are different criteria due to the changes in the amount of body fat.

Table A-1. Body Mass Index (BMI) Categories

	Underweight	**Healthy Weight**	**Overweight**	**Obese**
Males/females age 20 or older	BMI<18.5	18.5≤BMI<25.0	25.0≤BMI<30.0	BMI≥30.0
18 year old males	BMI<18.24	≤BMI<25.66	≤BMI<28.96	BMI≥28.96
18 year old females	BMI<17.55	≤BMI<25.68	≤BMI<30.33	BMI≥30.33
19 year old males	BMI<18.73	≤BMI<26.36	≤BMI<29.73	BMI≥29.73
19 year old females	BMI<17.77	≤BMI<26.10	≤BMI<31.03	BMI≥31.03

The following questions are used to calculate the above classifications.
- **Q4:** Are you…? Male/female
- **Q15:** How old are you? Years [open-end numeric]
- **Q16:** About how tall are you without shoes on? Feet [open-end numeric]; Inches [open-end numeric]
- **Q17:** How much do you weigh without shoes on? (If you are currently pregnant, what was your typical weight before pregnancy?) Pounds [open-end numeric]

Physical Activity Target
The coding for physical activity is based on the Healthy People 2020 target for physical activity. National physical activity guidelines recommend 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity per week, or an equivalent mixture of both. The HRB survey asks respondents about the frequency and duration with which they engage in moderate and vigorous activity, and the mid-points were taken to determine the approximate number of minutes of each type of activity per week. The response categories reported for this composite score are:
- 'Meets the target' is defined as engaging in 150 minutes of moderate vigorous activity or 75 minutes of vigorous physical activity, or an equivalent mixture of both.
- 'Does not meet the target' is defined as engaging in less than 150 minutes of vigorous activity and/or less than 75 minutes of vigorous activity.

The following questions were used to calculate the above classifications.
- Q26: During the PAST 30 DAYS, how often did you do the following kinds of physical activity? About every day/5 - 6 days a week/3 - 4 days a week/1 - 2 days a week/Less than 1 day a week/Not at all in the past 30 days
    - A: Moderate Physical Activity – exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity
    - B: Vigorous Physical Activity – exertion that is high enough that you would find it difficult to carry on a conversation during the activity
- Q27: During the PAST 30 DAYS, on the days you did the following, how long PER DAY did you typically do each? 60 or more minutes/30 to 59 minutes/20 to 29 minutes/Less than 20 minutes/Never in the past month
    - A: Moderate Physical Activity – exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity

    o B: Vigorous Physical Activity – exertion that is high enough that you would find it difficult to carry on a conversation during the activity

Higher Physical Activity Target

The coding for this composite is based on the Healthy People 2020 target for higher physical activity target. National physical activity guidelines state that additional health benefits can be achieved through higher levels of physical activity as compared with the baseline described above (Physical Activity Target). Higher levels of physical activity are characterized as 300 minutes of moderate physical activity or 150 minutes of vigorous physical activity per week, or an equivalent mixture of both. The HRB survey asks respondents about the frequency and duration with which they engage in moderate and vigorous activity, and the mid-points were taken to determine the approximate number of minutes of each type of activity per week. The response categories reported for this composite score are:

- 'Meets the target' is defined as engaging in 300 minutes of moderate vigorous activity or 150 minutes of vigorous physical activity, or an equivalent mixture of both.
- 'Does not meet the target' is defined as engaging in less than 300 minutes of vigorous activity and/or less than 150 minutes of vigorous activity.

The following questions were used to calculate the above classifications.

- Q26: During the PAST 30 DAYS, how often did you do the following kinds of physical activity? About every day/5 - 6 days a week/3 - 4 days a week/1 - 2 days a week/Less than 1 day a week/Not at all in the past 30 days
  - o A: Moderate Physical Activity – exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity
  - o B: Vigorous Physical Activity – exertion that is high enough that you would find it difficult to carry on a conversation during the activity
- Q27: During the PAST 30 DAYS, on the days you did the following, how long PER DAY did you typically do each? 60 or more minutes/30 to 59 minutes/20 to 29 minutes/Less than 20 minutes/Never in the past month
  - o A: Moderate Physical Activity – exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity
  - o B: Vigorous Physical Activity – exertion that is high enough that you would find it difficult to carry on a conversation during the activity

Sleep Target

The coding for sleep is based on the Healthy People 2020 target for sufficient sleep. Sufficient sleep is defined as eight or more hours for those aged 18 to 21 and 7 or more hours for those aged 22 or older. The response categories reported for this composite score are:

- 'Meets the target' is defined as personnel aged 18 to 21 obtaining eight hours of sleep per 24 hour period and personal aged 22 or older obtaining seven hours of sleep or more
- 'Does not meet the target' is defined as personnel aged 18 to 21 obtaining less than either hours of sleep per 24 hour period and personnel aged 22 or older obtaining less than seven hours of sleep or more.

The following question is used to calculate the proportion of HRB respondents who meet these criteria:

- Q15: How old are you? Years [OPEN-END NUMERIC]
- Q151: In the PAST WEEK (past 7 days), about how many hours on average did you sleep each 24 hour period?

Fruit and Vegetable Consumption

National nutritional guidelines encourage the consumption of fruits, vegetables, whole grains, dairy, and lean protein to improve overall health (Dietary Guidelines, 2010). The Department of Agriculture advises specifically on the recommended amounts of each food group based on age, gender, weight, and physical activity (USDA, 2015). According to choosemyplate.gov, for a 2000-calorie diet for those aged 18 or more, the following amounts are recommended: 2.5 cups of vegetables (2:1 non-starchy and starchy vegetables), 2 cups of fruit, 3 cups of dairy, 5.5 ounces of protein, and 3 ounces of whole grains. As shown in Figure 7, this translates approximately to the following serving amounts: 2 servings of non-starchy vegetables, 1 serving of starchy vegetables, 2 servings of fruit, 3 servings of dairy, 2 servings of protein, and 2 servings of whole grains. The HRB survey asks personnel the number of times a day in a typical week that they consume food groups. We assume that a 'time' translates into a 'serving' but in future iterations of the survey, recommend that the question be changed to align more closely to guidelines.

- Q34: In a TYPICAL WEEK, how often do you eat or drink the following foods?
    - **A:** FRUIT: fresh, frozen, canned, or dried
    - **C:** VEGETABLES: fresh, frozen, canned, cooked or raw (not fried)

5.5 Stress and Mental Health

Overall Stress Level in the Past 12 Months

The survey contains two items to measure level of overall stress in the past 12 months. In the first question participants indicate how often they experienced a lot of stress in the past 12 months. Responses are provided on a 5-point scale, ranging from "Never" to "Always." In the second question participants indicate how much military-related stress they experienced overall in the past 12 months. Average scores are calculated for each item separately; these scores are then averaged together. Those participants with an average score of 0.70 or greater were classified and presented in the tables as "High overall stress," whereas those with an average score of less than 0.70 were classified as "Low overall stress." Overall stress level was then dichotomized based on a cutoff value. The response categories reported for this composite score are:

- High overall stress level
- Low overall stress level

The following questions are used to calculate the above classifications.

- **Q127:** In the PAST 12 MONTHS, how often did you feel a lot of stress? Always/often/sometimes/seldom/never
- **Q128:** In the PAST 12 MONTHS, how much military-related stress have you experienced overall? A lot/some/a little/none at all

High Depression Level in the Past Week

There are two items in the survey to assess level of depressive symptoms in the past week. Response options are provided on a 5-point scale, ranging from "Never" to "5-7 days." To create a depression level scale, the responses were recoded (i.e., "5-7 days" was assigned a value of 1, "3-4 days" was assigned a value of .75, "1-2 days" was assigned a value of .5, "Less than 1 day" was assigned a value of .25, and "never" was assigned a value 0) and averaged. Depression level was then dichotomized based on a cutoff value. We classified and presented those with an average score of 0.75 or greater presented in the tables as "High depression," whereas those with an average score of less than 0.75 but greater than 0 were classified as "Low depression." The response categories reported for this composite score are:

- High depression level
- Low depression level

The following questions are used to calculate the above classifications.

- **Q133:** On how many days in the PAST WEEK did you feel the following for most of the day? Please select ONE response per row. 5 - 7 days/3 - 4 days/1 - 2 days/less than 1 day/never
    - o **C:** I felt depressed
    - o **E:** I felt sad

High Anxiety Level in the Past 30 Days
The survey contains 4 items to assess how often they experienced symptoms of anxiety associated with stress in the past 30 days. Responses are provided on a 4-point scale, ranging from "Not at all" to "More than half the days." To create an anxiety level scale, we recoded and then averaged the responses on the 4 items (i.e. "More than half the days" is assigned a value of 1, "Several days" is assigned a value of .667, "One or two days" is assigned a value of .333, and "Not at all" is assigned a value of 0). We then dichotomized anxiety level based on a cutoff value. Those participants with an average score of 0.75 or greater are classified and presented in the tables as "High anxiety," whereas those with an average score of less than 0.75 but greater than 0 are classified as "Low anxiety." The response categories reported for this composite score are:

- High anxiety level
- Low anxiety level

The following questions are used to calculate the above classifications.

- **Q134:** During the PAST 30 DAYS, how often have you been bothered by the following? More than half the days/several days/one or two days/not at all
    - o **A:** Feeling nervous, anxious, on edge, or worrying a lot about different things
    - o **B:** Getting tired very easily
    - o **C:** Trouble falling asleep or staying asleep
    - o **D:** Becoming easily annoyed or irritable

Suicide Attempts
The survey contains two items related to suicide attempts to determine whether and when it had occurred. If respondents answered that they had attempted suicide, there is a follow-up item about when the attempt had occurred. The response categories reported for this composite score are:

- Before joining the military

- Since joining the military, but not during or within six months of deployment
- During deployment or within six months before or after
- Never attempted

The following questions are used to calculate the above classifications.
- **Q147:** Have you ever attempted suicide? No/Yes/Decline to answer
- **Q148:** If you have ever attempted suicide, did you attempt it during any of the following periods? Please select ONE response per row. No/Yes
    - **A:** Within the past year
    - **B:** Since joining the military
    - **C:** Before joining the military
    - **D:** Within 6 months before leaving for deployment/mission
    - **E:** During a deployment/mission
    - **F:** Within 6 months after returning from a deployment/mission

Suicide Ideation

The survey contains two items related to suicide ideation to determine whether and when it had occurred. If respondents answered that they had seriously considered suicide, there is a follow-up item about when the ideation had occurred. The response categories reported for this composite score are:
- Before joining the military
- Since joining the military, but not during or within six months of deployment
- During deployment or within six months before or after
- Never considered

The following questions are used to calculate the above classifications.
- **Q145:** Have you ever seriously considered suicide? No/Yes/Decline to answer
- **Q146:** If you have ever seriously considered suicide, did you attempt it during any of the following periods? Please select ONE response per row. No/Yes
    - **A:** Within the past year
    - **B:** Since joining the military
    - **C:** Before joining the military
    - **D:** Within 6 months before leaving for deployment/mission
    - **E:** During a deployment/mission
    - **F:** Within 6 months after returning from a deployment/mission

Reported Physical Abuse

The survey contains a series of items related to physical and sexual abuse experienced before and after joining the military. A composite was created to identify all respondents who experienced any physical abuse (before or after joining the military). The response categories reported for this composite score are:
- Reported physical abuse
- Did not report physical abuse

The following questions are used to calculate the above classifications.

- **Q135:** Next, we have some questions you experiences you may have had. Please select one response per row. No/Yes
    - o **A:** <u>BEFORE </u>joining the military, were you ever physically abused, punished, or beaten by a person in authority or having some power over you so that you received bruises, cuts, welts, lumps, or other injuries?
    - o **B:** SINCE joining the military, have you ever been physically abused, punished, or beaten by someone <u>in the military </u>so that you received bruises, cuts, welts, lumps, or other injuries?
    - o **C:** SINCE joining the military, have you ever been physically abused, punished, or beaten by a <u>civilian </u>so that you received bruises, cuts, welts, lumps, or other injuries?

Reported Sexual Abuse
The survey contains a series of items related to sexual abuse experienced before and after joining the military. A composite was created to identify all respondents who experienced any sexual abuse (before or after joining the military). The response categories reported for this composite score are:

- Reported sexual abuse
- Did not report sexual abuse

The following questions are used to calculate the above classifications.

- Q135: Next, we have some questions you experiences you may have had. Please select one response per row. No/Yes
    - o **D:** BEFORE joining the military, did you experience ANY type of unwanted sexual contact? This would mean contact between someone else and your private parts or between you and someone else's private parts.
    - o **E:** SINCE joining the military, have you experienced ANY type of unwanted sexual contact from anyone in the military?
    - o **F**: SINCE joining the military, have you experienced ANY type of unwanted sexual contact from any civilian?

Positive Affect in the Past Week
The survey contains two items to measure positive affect in the past 7 days. Response choices were provided on a 5-point scale, ranging from "Never" to "5-7 days." To create a positive affect scale, the responses were recoded (i.e., "5-7 days" was assigned a value of 1, "3-4 days" was assigned a value of .75, "1-2 days" was assigned a value of .5, "Less than 1 day" was assigned a value of .25, and "never" was assigned a value 0) and averaged. Positive affect level was then trichotomized based on cutoff values. Those with an average score of 0.25 or lower were classified as 'Low Positive Affect', those averaging 0.90 or higher were classified as 'High Positive Affect', and those in between .25 and .90 were classified as 'Moderate Positive Affect'. The response categories reported for this composite score are:

- Low positive affect
- Moderate affect
- High positive affect

The following questions are used to calculate the above classifications.

- **Q133:** On how many days in the PAST WEEK did you feel the following for <u>most </u>of the day? Please select ONE response per row. 5 - 7 days/3 - 4 days/1 - 2 days/Less than 1 day/Never
  - **A:** I was happy
  - **D:** I was hopeful about the future

Resilience Level

The survey contains 6 items about resilience – 3 related to confidence in overcoming challenges and 3 related to enjoyment of challenges. Responses are provided on a 5-point scale, ranging from "Not at all" to "A great deal." We recoded responses to these 6 items (i.e., "A great deal" is assigned a value of 1, "A lot" is assigned a value of .75, "Somewhat" is assigned a value of .5, "A little" is assigned a value of .25, and "Not at all" is assigned a value 0), and calculated averages separately for both resilience confidence and resilience enjoyment. We then averaged these scores, and resilience level was trichotomized. Participants with an average score of .25 or less are categorized as 'Low' resilience, those with a score between .25 and .75 are categorized as 'Moderate' resilience, and those with an average score of .75 or higher as 'High' resilience. Only low and moderate levels of resilience are presented in the tables. The response categories reported for this composite score are:

- Low resilience
- Moderate resilience
- High resilience

The following questions are used to calculate the above classifications.

- **Q149:** How much do the following statements describe you? Please select ONE response per row. A great deal/a lot/somewhat/a little/not at all
  - **A:** I am very optimistic.
  - **B:** I enjoy facing many challenges that I need to overcome.
  - **J:** I can bounce back from adversity easily.
- **Q178:** How much of the following statements describe you? Please select ONE response per row. A great deal/a lot/somewhat/a little/not at all
  - **A:** I like overcoming challenges.
  - **C:** I function well under adverse circumstances.
  - **I:** I can easily control what happens in my life.

High Risk-Taking Propensity

There are 3 survey items about how much behaviors related to risk-taking describe the respondent. Responses were measured on a 5-point scale, ranging from "Not at all" to "A great deal." To create a risk-taking propensity scale, response values were recoded and averaged for these 3 items (i.e., "A great deal" was assigned a value of 1, "A lot" was assigned a value of .75, "Somewhat" was assigned a value of .5, "A little" was assigned a value of .25, and "Not at all" was assigned a value 0). We then dichotomized risk-taking propensity based on a cutoff value. We classified and presented those with an average score of 0.75 or greater in the tables as "High risk-taking," whereas those with an average score of less than 0.75 but greater than 0 were classified as "Low risk-taking." The response categories reported for this composite score are:

- High risk-taking
- Low risk-taking

The following questions are used to calculate the above classifications.

- **Q149:** How much do the following statements describe you? Please select ONE response per row. A great deal/a lot/somewhat/a little/not at all
    - **G:** You might say I act impulsively.
    - **H:** I like to test myself every now and then by doing something a little chancy or risky.
- **Q178:** How much of the following statements describe you? Please select ONE response per row. A great deal/a lot/somewhat/a little/not at all
    - **G:** I go for the thrills in life when I get a chance.

High Anger Propensity

There are 4 survey items about behaviors related to anger. Responses for these 3 items were measured on a 5-point scale, ranging from "Not at all" to "A great deal." To create a risk-taking propensity scale, we recoded the response values on these 3 items (i.e., "A great deal" was assigned a value of 1, "A lot" was assigned a value of .75, "Somewhat" was assigned a value of .5, "A little" was assigned a value of .25, and "Not at all" was assigned a value 0). The fourth item asks respondents about internalization of anger on a 5-point scale. We recoded the responses to this item in the same way as the other 3 items (i.e., "Other people always know when I am angry" was assigned a value of 1, "Other people often know when I am angry" was assigned a value of .75, "Other people sometimes know when I am angry" was assigned a value of .5, "Other people rarely know when I am angry" was assigned a value of .25, and "Other people never know when I am angry" was assigned a value of 0). We then averaged the scores for all 4 items, and dichotomized anger propensity based on a cutoff value. Those with an average score of 0.75 or greater were classified as "High anger," whereas those with an average score of less than 0.75 but greater than 0 were classified as "Low anger." The response categories reported for this composite score are:

- High anger
- Low anger

The following questions are used to calculate the above classifications.

- **Q142:** When you get angry, which best describes you? Other people always know when I am angry/other people often know when I am angry/other people sometimes know when I am angry/other people rarely know when I am angry/other people never know when I am angry
- **Q149:** How much do the following statements describe you? A great deal/a lot/somewhat/a little/not at all
    - **C:** I often find myself getting angry at people or situations.
    - **I:** When I get angry, I get really mad.
- **Q178:** How much of the following statements describe you? A great deal/a lot/somewhat/a little/not at all
    - **B:** When I get angry I stay angry.

5.6 Deployment

High Posttraumatic Stress (PTS) Level, Past 30 Days

There are 4 items in the survey to determine the extent to which they experienced symptoms in the past 30 days that indicated need for further PTS evaluation. Participants indicate how much they have been bothered by each of the 4 symptoms in the past month. Responses are provided on a 5-point scale, ranging from "Not at all" to "Extremely." To create this scale, we will calculate an average from participants' responses on each of the 4 items. We will then use a dichotomous cut off to determine 'High PTS level'. Respondents with scores below 4 are

categorized as "Low PTS," and those with scores of 4 and above are categorized and presented in the tables as "High PTS." The response categories reported for this composite score are:
- High PTS level
- Low PTS level

The following questions are used to calculate the above classifications.
- **Q136:** How much have you been bothered by each of the following in the PAST 30 DAYS? Please select ONE response per row. Extremely/quite a bit/moderately/a little bit/not at all
  - **B:** Feeling very upset when something reminded you of a stressful experience
  - **D:** Feeling emotionally numb or being unable to have loving feelings for those close to you
  - **E:** Having difficulty concentrating
  - **F:** Feeling jumpy or easily startled

Possible Traumatic Brain Injury (TBI)

To assess whether there is a need for further evaluation of mild TBI, respondents was asked three series of items based on the Brief Traumatic Brain Injury Screen (BTBIS; Schwab et al., 2006).
The first series of items (Q161A – Q161F) asks about six events experienced during most recent deployment (combat or non-combat) including:
- Blast or explosion (IED, RPG, land mine, grenade, etc.);
- Vehicular accident/crash (any vehicle, including aircraft);
- Fragment wound above the shoulders;
- Bullet wound above the shoulders;
- A fall serious enough to need medical attention; and
- Another type of injury.

A response of "Yes" to at least one item verifies occurrence of an injury.

The second series of items (Q165A – Q165H) asks about eight symptoms experienced during or after most recent deployment, including:
- Memory problems or lapses
- Balance problems
- Dizziness
- Ringing in the ears
- Sensitivity to bright light
- Irritability
- Headaches
- Nightmares

A response of "Yes" to at least one item verifies the presence of TBI-related symptoms.

The final series of items (question Q167A – question Q167G) will ask whether an injury received during most recent deployment resulted in any of the following seven outcomes:
- Lost consciousness or got "knocked out" for less than a minute;

- Lost consciousness or got "knocked out" for 1 to 20 minutes;
- Lost consciousness or got "knocked out" for more than 20 minutes;
- Felt dazed, confused, or "saw stars";
- Didn't remember the event;
- Concussion or symptoms of a concussion (such as headache, dizziness, irritability, etc.); and
- Head injury.

If the respondent answered "Yes" to at least one of the injury outcome items, in addition to verification of at least one injury related event and one symptom based on the first two sets of items, further evaluation is recommended for possible TBI.

Responses:
- Possible TBI
- Unlikely TBI

Combat Exposure

There 17 items to assess level of combat exposure across all combat zone deployments since September 11, 2011. The items ask participants to indicate the number of times they had experienced combat-related events, such as "I personally fired my weapon at the enemy," "My unit suffered causalities," and "I was wounded in combat." Response options were provided on a 5-point scale, ranging from "Never" to "More than 50 times."

From these items, we will create a composite score using each individual item (A through Q), where a response of "More than 50 times" was assigned a value of 4, "13 to 50 times" was assigned a value of 3, "4 to 12 times" was assigned a value of 2, "1 to 3 times" was assigned a value of 1, and "Never" was assigned a value of 0. This sum score was trichotomized, with "10 and above=High Exposure," "1 to 9=Moderate Exposure," and "0=Low Exposure." Those who had not been deployed since September 11, 2001 according to Q148 or Q159 were categorized as "No combat deployments." The response categories for this outcome are:
- High (10 times or more)
- Moderate
- Low
- No Combat Deployments

The following questions are used to define the above classifications:
- **Q158:** Have you been deployed on either a combat or non-combat mission/deployment <u>since</u> September 11, 2001?
- **Q159:** The term "combat zone deployment," as used in this questionnaire, refers to a deployment where you received imminent danger pay (IDP), hazardous duty pay, and/or combat zone tax exclusion benefits. How many COMBAT deployments (including OIF, OEF, OND - missions where you received IDP, hazardous duty pay, and/or combat zone tax exclusion benefits) have you been on since <u>September 11, 2001</u>?
- **Q173A:** I was sent outside the wire on combat patrols, convoys, or sorties
- **Q173B:** I, or members of my unit, received incoming fire from small arms, artillery, rockets, or mortars.

- **Q173C:** I, or members of my unit, encountered mines, booby traps, or IEDs (improvised explosive devices).
- **Q173D:** I worked with landmines or other unexploded ordnances.
- **Q173E:** My unit fired on the enemy.
- **Q173F:** I personally fired my weapon at the enemy.
- **Q173G:** I engaged in hand-to-hand combat.
- **Q173H:** I was responsible for the death or serious injury of an enemy.
- **Q173I:** I witnessed members of my unit or an ally unit being seriously wounded or killed.
- **Q173J:** My unit suffered causalities.
- **Q173K:** I saw dead bodies or human remains
- **Q173L:** I handled, uncovered, or removed dead bodies or human remains.
- **Q173M:** Someone I knew well was killed in combat
- **Q173O:** I interacted with enemy prisoners of war.
- **Q173P:** I witnessed or engaged in acts of cruelty, excessive force, or acts violating rules of engagement.
- **Q173Q:** I was wounded in combat.