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**U.S. Department of Veterans Affairs**

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Veterans Health Administration  
Office of Public Health

# **Report on Data from the Airborne Hazards and Open Burn Pit (AH&OBP) Registry**

**June 2015**

**Post-9/11 Era Environmental Health Program  
Post-Deployment Health  
Office of Public Health  
Veterans Health Administration  
Department of Veterans Affairs**  
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# Introduction

On January 10, 2013, Public Law 112-260 was enacted requiring the Department of Veterans Affairs (VA) to establish an open burn pit Registry for Veterans who may have been exposed to burn pits in Iraq or Afghanistan. In response to this, the Post-Deployment Health Group of the VA, Veterans Health Administration (VHA), Office of Public Health (OPH) established the Airborne Hazards and Open Burn Pit (AH&OBP) Registry for eligible Servicemembers and Veterans. OPH opened the Registry for pilot testing on April 25, 2014, and released it nationally on June 19, 2014.

The purpose of the Registry is to ascertain and monitor potential health effects from exposure to airborne environmental hazards with the overall goal of improving outreach, communication, and VHA programs for eligible Veterans.

Registry participation is open to any Veteran or Active Duty Servicemember who served in the Southwest Asia theater of operations after August 2, 1990, or in Afghanistan or Djibouti, Africa, after September 11, 2001 (*Federal Register* 2014-14881).<sup>1</sup> Based on Department of Defense (DoD) data, approximately 3.5 million individuals are eligible to participate in the Registry. Participation in the Registry is voluntary and is accomplished by completing an online self-assessment questionnaire. The questionnaire is designed to give a broad picture of the participant's health and current and past exposures. In addition, eligible Veterans have the option to contact their local VHA facility and schedule an in-person evaluation.

This report is the second in a series of reports OPH will publish based on Registry data. The first report (<http://www.publichealth.va.gov/docs/exposures/va-ahobp-registry-data-report-april2015.pdf>) focused on exposures reported by Veterans and Active Duty Servicemembers. This second report examines self-reported health conditions reported by Registry participants and the association of these self-reported health conditions with self-reported exposure to burn pits and dust storms. It includes information from Veterans and Active Duty Servicemembers who participated in the Registry from April 25, 2014, to December 31, 2014. It also provides a brief description of the demographic and military service characteristics of Registry participants. The data in this report should be considered descriptive and not necessarily connoting that exposure causes a specific disease.

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<sup>1</sup> Southwest Asia Theater of operations includes the following locations: Iraq, Kuwait, Saudi Arabia, Bahrain, Gulf of Aden, Gulf of Oman, Oman, Qatar, United Arab Emirates, Waters of the Persian Gulf, Arabian Sea, and Red Sea, and the airspace above these regions.

# Data Sources and Methods

## Data Sources

In addition to data from the self-assessment questionnaire (SAQ), OPH obtained demographic and VHA health care enrollment and utilization information from several other data sources to prepare this report:

- **Operation Enduring Freedom/Operation Iraqi Freedom/ Operation New Dawn (OEF/OIF/OND) Roster File.** The OEF/OIF/OND Roster, prepared by the Epidemiology Program within Post Deployment Health, identifies all Veterans who have been involved in the OEF/OIF/OND mission. The Roster is derived from the DoD Manpower Data Center (DMDC) Contingency Tracking System Deployment File. OPH used the OEF/OIF/OND Roster File to obtain demographic information because the self-assessment questionnaire does not collect demographic information other than birth date/age.
- **Oil Well Fire Registry File.** Provided by the United States Army Public Health Command (USAPHC), this file contains records of DoD personnel who served in Operations Desert Storm and Desert Shield during the time oil well fires were burning. OPH used this file to obtain demographic and deployment information for military personnel who served in Operation Desert Storm/Shield.
- **Assistant Deputy Under Secretary for Health (ADUSH) Enrollment Files.** The VHA Office of the ADUSH for Policy and Planning creates the ADUSH Enrollment Files, which contain enrollment, eligibility, demographic, cost, and location information for VHA enrollees and non-enrollees who have received VA care. OPH used the fiscal year files for 2013, 2014, and 2015 to provide information on VHA enrollment and health care utilization.
- **The Corporate Data Warehouse (CDW)** contains VHA medical records. The CDW is a national repository of VHA clinical and administrative data systems. CDW was used to identify in-person Registry evaluations. Within CDW, the AH&OBP in-person evaluation is identified based on the presence of a clinical note title and/or health factors.

Data on some demographic characteristics, including gender, race, unit component, and rank are currently unavailable for a significant proportion of Registry participants. Participants with missing data on these demographic characteristics are excluded when calculating percentages. Caution should be exercised in interpreting the findings for some of the demographic characteristics. These data will be included in future reports subject to availability.

## Sample

28,426 Veterans and Active Duty Servicemembers completed the SAQ as of December 31, 2014. Because this report focuses on the association between exposure and health conditions, the analysis of health conditions broken out by exposure status was restricted to those participants who responded to the items used to construct the exposure measure of interest. Invalid responses included missing responses, “Don’t know” and “refused.” Nearly all participants answered the items about burn pit exposure; fewer answered the item on dust storm exposure. Of the 28,426 participants who completed the SAQ as of the end of 2014, 27,378 had data on burn pit exposure and 24,782 had data on dust storm exposure. This report used data from the respondents who provided valid data on burn pit exposure to examine the overall prevalence of health conditions.<sup>2</sup>

## Measures

### Exposure

For each deployment, the study asked participants whether they were ever near a burn pit (“on the base” or “close enough to the base to see smoke”). Those who said “yes” were asked whether their duties included the burn pit (e.g., trash burning, hauling trash to the burn pit, burn pit security, or trash sorting at the burn pit). The study divided participants into three exposure groups based on responses to these questions: not exposed, exposed but not involved in burn pit duties, and exposed and involved in burn pit duties. A participant was classified as having worked at a burn pit if he reported burn pit duties on any deployment segment. The “exposed but not involved in burn pit duties” group included those who never worked at a burn pit but who reported having been near a burn pit on at least one deployment segment. Finally, the “not exposed” group included participants who were not near a burn pit on any deployment segments.

The study measured dust storm exposure by the number of days per month on a typical deployment a participant said he/she experienced dust storms. Participants were categorized into three equally sized groups:

1. “Low” exposure group: included participants in the bottom third (33<sup>rd</sup> percentile or lower) of self-reported exposure days per month (0 to 4 days).
2. “Moderate” exposure group: included participants in the middle third (34<sup>th</sup> to 66<sup>th</sup> percentile) of exposure days (5 to 10 days).
3. “High” exposure group: included those in the top third (67<sup>th</sup> percentile or higher) who reported 11 to 31 days of exposure in a typical month.

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<sup>2</sup> Despite the greater amount of missing data on dust storm exposure, the overall prevalence of health conditions among those with valid data on dust storm exposure is very similar to the prevalence among those with valid data on burn pit exposure.

## Health Conditions

Participants were asked whether a health care provider had ever diagnosed them as having certain respiratory or cardiovascular conditions. Participants who responded that they had ever been diagnosed with a respiratory condition were asked whether they received the diagnosis before, during, or after deployment. A similar question was asked of those diagnosed with a cardiovascular condition. When examining the relationship between exposure and health conditions, the analysis was conducted in two ways. First, the analysis examined the relationship between exposure and having ever been diagnosed with a condition. Second, the analysis considered only health conditions that were newly diagnosed after deployment. For example, when looking at respiratory conditions by exposure status, the percentage of respondents diagnosed with a condition after deployment was calculated only among those who were previously undiagnosed with a respiratory condition. It is important to note that participants were not asked about the timing of diagnosis for each specific condition. Instead, they were only asked to indicate whether they were diagnosed with any respiratory condition before or after deployment. If a participant had two respiratory conditions and reported that he/she was diagnosed before and after deployment, it was impossible to determine which condition was newly diagnosed and which was present before deployment. The results of both analyses were quite similar because most conditions were first diagnosed after deployment. The results of the second analysis focusing only on participants who were disease-free before deployment are presented in Appendix 1. For several other health conditions and concerns, OPH asked respondents about their experiences in the past 12 months, so the timing relative to deployment was not a concern.

## Analysis Approach

This analysis is descriptive and consists of tabulations of responses to the SAQ. The analysis examined the relationship between reported exposures and health conditions using cross-tabulations. The percentage of respondents who reported a health condition was examined for each level of exposure. A high level of exposure associated with a health condition does not necessarily suggest that exposure led to or caused the health condition. Veterans and Active Duty Servicemembers who were exposed to burn pits or dust storms may have also had other demographic or behavioral factors (e.g., age, military occupation, or tobacco use) that put them at risk for certain health conditions. For example, the percentage of respondents who reported a post deployment diagnosis of chronic bronchitis may be higher among those who worked at burn pits than among those who were not exposed; however, those who had burn pit duties may have also been more likely to work in an occupation that involved irritant agents or use tobacco. The higher percentage of respondents with chronic bronchitis might be due to these other factors rather than to exposure *per se*. Therefore, the findings should be considered descriptive. Future reports will

include multivariable analysis to assess the impact of other occupational and lifestyle factors on reports of health conditions in addition to reported exposure to burn pits and dust storms.<sup>3</sup>

It is important to note that the Registry is not a random sample of Veterans and Active Duty Servicemembers. The Registry is voluntary and many of those who participated may be especially concerned about exposures and the possible health effects of deployment. This might increase the prevalence of exposure and health conditions, and the association between the two, compared to a random sample of military personnel.

## Findings

### Registry Participation

- By December 31, 2014, 45,924 user accounts were created, and 28,426 completed SAQs were submitted (Table 1).
- The SAQ asks participants to indicate their interest in being seen by a DoD or VA health care provider to discuss health concerns related to airborne hazards during deployment. Individuals are provided guidance to contact a VHA or Military Health System (MHS) facility to schedule/request the in-person exam.
  - More than half (54%) of the participants said they were interested in an in-person clinical evaluation (Table 5).
- More than half (57%) of the participants had used VHA health care since 2013, and two-thirds (66%) were enrolled in the VA (Table 6).

### Burn Pit and Dust Storm Exposure

- Sixty-two percent of the participants reported that they worked at a burn pit on at least one of their deployments. Another 33 percent said that they were near a burn pit on at least one deployment, although they did not work at the burn pit. Only about 1 percent of participants said that they were never near a burn pit. Burn pit exposure status could not be classified for 4 percent of participants due to a response of don't know, missing, or refused on all eligible deployment segments (Table 7).

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<sup>3</sup> Statistical significance tests were not conducted for the association between exposure and health conditions, owing to the fact that the analyses were not adjusted for sex and age and were descriptive in nature.



- Twenty-five percent of the participants reported that they were exposed to dust storms 11 or more days per month on a typical deployment. Another 13 percent gave a response of “don’t know”, refused, or missing to the question about dust storm exposure (Table 7).
- Some participants reported multiple exposures. For example, 22 percent of the participants both worked at burn pits and were in the highest tercile of dust storm exposure-days (not shown).

## Respiratory Conditions

### Burn Pit Exposure

- Thirty percent of the participants reported having ever been diagnosed by a health care provider with a respiratory condition other than allergies to pollen, dust, or animals. Sixteen percent reported that they were diagnosed with chronic obstructive pulmonary disease (COPD), chronic bronchitis, or emphysema and 15 percent reported that they were diagnosed with asthma. One percent of participants reported constrictive bronchiolitis, and less than 1 percent reported idiopathic pulmonary fibrosis (Table 8).
- Participants who worked at burn pits were more likely to report COPD, chronic bronchitis, or emphysema than those who did not. Specifically, 17 percent of those whose duties included a burn pit reported COPD, chronic bronchitis, or emphysema compared to 13 percent of those with exposure but no duties and 11 percent of those with no exposure (Table 8).

### Dust Storm Exposure

- Of the respiratory conditions examined, asthma and a history of COPD, chronic bronchitis, or emphysema were associated with exposure to dust storms. The prevalence of asthma was 14 percent in the low and moderate-exposure groups and 18 percent in the high-exposure group. Twelve percent of those in the low-exposure group reported COPD, chronic bronchitis, or emphysema compared to 15 percent in the moderate- and 21 percent in the high-exposure group (Table 9).

## Cardiovascular Conditions

### Burn Pit Exposure

- Forty percent of the participants reported having ever been diagnosed by a health care provider with a cardiovascular condition. The most common cardiovascular condition was high blood pressure (36%). Very few participants said they were diagnosed with other cardiovascular conditions, including coronary artery disease (2%), angina pectoris (1%), and myocardial infarction (1%) (Table 10).

- Of the cardiovascular conditions examined, high blood pressure was more prevalent among those exposed to burn pits. Thirty-eight percent of those whose duties involved burn pits reported high blood pressure compared to 33 percent of those with exposure but no burn pit duties and 35 percent of those who were not exposed (Table 10).

### **Dust Storm Exposure**

- Similarly, reported exposure to dust storms was related to high blood pressure. Thirty-two percent of the low-exposure group reported a diagnosis of high blood pressure, compared to 36 percent of the moderate-exposure group and 40 percent of the high-exposure group (Table 11).

## **Cancer History**

### **Burn Pit Exposure**

- About 6 percent of the participants reported that they were diagnosed with some type of cancer, and 4 percent reported that they were diagnosed with a non-melanoma skin cancer (Table 12).
- Cancer was no more prevalent among those who were exposed to burn pits or had burn pit duties than those who did not.

### **Dust Storm Exposure**

- Cancer was unrelated to dust storm exposure (Table 13).

## **Other Health Conditions and Concerns**

### **Burn Pit Exposure**

- A liver condition was more prevalent among those exposed to burn pits. Specifically, 8 percent of those whose duties involved burn pits reported a liver condition compared to 6 percent of those exposed but without duties and 4 percent of those with no exposure (Table 14).
- Twenty-one percent of participants whose duties involved burn pits, 14 percent of those with exposure but no duties and 14 percent of those with no exposure reported having chronic multi-symptom illness (Table 14).

- Participants who reported burn pit exposure were also more likely to report other health concerns in the past 12 months.
  - Insomnia was more prevalent among those exposed to burn pits. Specifically, 86 percent of those with burn pit duties reported insomnia compared to 73 percent of those with exposure but no duties and 66 percent of those with no exposure (Table 14).
  - Neurological problems were reported by 79 percent of those with burn pit duties, 64 percent of those with exposure but no duties, and 60 percent of those with no exposure (Table 14).
  - Finally, immune system problems were reported by 25 percent of those with duties, 17 percent of those who were exposed without duties, and 14 percent of those who were not exposed (Table 14).

## Dust Storm Exposure

- A reported diagnosis of chronic multi-symptom illness in the past 12 months was more common in the high-exposure group (26%) than in the low-exposure group (14%) (Table 15).
- The high-exposure group was more likely than the low-exposure group to report insomnia (88% versus 74%), neurological problems (81% versus 67%), and immune system problems (30% versus 16%) in the past 12 months (Table 15).

## Functional Limitations

### Burn Pit Exposure

- Functional limitations were assessed by asking participants whether they had difficulty performing five activities, including running or jogging one mile, walking one mile, walking one-quarter of a mile, walking up a hill, and walking 10 steps. Participants were considered to have a functional limitation if they reported any difficulty with an activity.<sup>4</sup> More than one-

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<sup>4</sup> Items on functional limitations are drawn from the National Health Interview Survey (NHIS). The definition of functional limitation as any degree of difficulty with an activity is consistent with that used by prior studies using the NHIS items. See, for example, Ryerson B, Tierney EF, Thompson TJ, Engelgau MM, Wang J, Gregg EW, Geiss LS. Excess physical limitations among adults with diabetes in the U.S. population, 1997–1999. *Diabetes Care*, 26: 206–210, 2003.

third (37%) of the participants reported difficulty with all five of the activities included in the questionnaire (Table 16).<sup>5</sup>

- Self-reported burn pit exposure was related to several functional limitations. Among participants whose duties included burn pits, 42 percent had difficulty with all five activities, compared to 29 percent of those who were exposed but did not have duties and 27 percent of those who were not exposed (Table 16).

## Dust Storm Exposure

- Self-reported dust storm exposure was related to several functional limitations. Half of the participants in the highest tercile of dust storm exposure had difficulty with all five of the activities compared to 36 percent of those with moderate exposure and 27 percent of those with low exposure (Table 17).

## Summary

- Registry participants who completed the self-assessment questionnaire are very well connected to VHA. Nearly two-thirds of Registry participants were enrolled in VHA health care. This may reflect the fact that participants who were connected to VHA were more likely to be informed about the Registry as a result of use of on-line and in-person VA services.
- Among Registry participants who completed the self-assessment questionnaire, the most commonly reported provider-diagnosed health conditions included allergies, asthma, and high blood pressure. A majority of the participants also reported concerns about insomnia and neurological problems. Other conditions, such as constrictive bronchiolitis, idiopathic pulmonary fibrosis, coronary artery disease, and cancer, were less common. Because this report did not include a comparison group, it is not possible to assess whether the conditions reported by participants are more or less common than among deployed military personnel in general.
- Several health conditions were more prevalent among those who were exposed to burn pits and dust storms. Both types of exposure were associated with asthma and high blood pressure. The prevalence of reported health conditions, including chronic multi-symptom illness and insomnia, was also higher among exposed participants. It is important to keep in mind that the results of this study are descriptive in nature and do not imply that exposure caused the illnesses that were reported.

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<sup>5</sup> Unfortunately, it was not possible to count only those functional limitations that were due to a lung or breathing problem in the total number of tasks for which a participant reported difficulty. Participants who reported difficulty with one or more of the tasks were asked about the cause, which included a lung or breathing problem. However, this item was not asked separately for each task.

# Section 1: Registry Participants Descriptive Tables

The first section of the report provides a description of Registry participation, demographic characteristics, military experience, clinical evaluations and utilization of VHA health care.

**Table 1: Airborne Hazards and Open Burn Pit Registry Participation by Month (During 2014)**

<b>Status of Registrants</b>	<b>Before September<sup>1</sup></b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>Total Through December</b>
Total number of user accounts <sup>2</sup>	32,306	5,081	4,015	4,522	45,924
Users providing web consent	29,728	5,074	4,005	4,501	43,308
Completed questionnaires	19,081	3,487	2,680	3,178	28,426

<sup>1</sup> Includes 321 Registry users, 72 web consenters, and 194 survey completions during the Registry pilot period (April 25, 2014, through June 18, 2014). Some of the pilot period Registry users consented and completed the questionnaire after June 18th.

<sup>2</sup> Includes all people who have a Registry user account.

**Table 2: Demographic Characteristics of Registry Participants**

<b>Characteristic</b>	<b>No.</b>	<b>%</b>
<b>Birth Year<sup>1</sup></b>		
Pre-1960	1,480	5.2%
1960-1969	6,422	22.6%
1970-1979	9,505	33.4%
1980 or later	11,019	38.8%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>
<b>Age<sup>1</sup></b>		
55+	1,368	4.8%
45-54	6,154	21.6%
35-44	9,451	33.2%
30-34	6,437	22.6%
<30	5,016	17.6%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>
<b>Gender<sup>2</sup></b>		
Male	20,996	89.5%
Female	2,472	10.5%
<b>Subtotal</b>	<b>23,468</b>	<b>100.0%</b>
Data unavailable	4,958	
<b>Total</b>	<b>28,426</b>	
<b>Race<sup>2</sup></b>		
American Indian/Alaska Native	200	0.9%
Asian	428	2.0%
Black or African American	2,226	10.2%
Native Hawaiian or other Pacific Islander	50	0.2%
White	18,775	86.0%
Multiracial	149	0.7%
<b>Subtotal</b>	<b>21,828</b>	<b>100.0%</b>
Unknown	953	
Data unavailable	5,645	
<b>Total</b>	<b>28,426</b>	

<sup>1</sup> Birth Year and Age are from the Airborne Hazards and Open Burn Pit Registry data at the time of questionnaire completion.

<sup>2</sup> Gender and Race are compiled from the last deployment in the OPH roster file of Veterans from OEF/OIF/OND, from the fiscal year 2014 VHA ADUSH enrollment files, and from the last deployment in the USAPHC Oil Well Fire Registry file.

**Table 3: Military Experience of Registry Participants**

<b>Characteristic</b>	<b>No.</b>	<b>%</b>
<b>Branch of Service<sup>1</sup></b>		
Army	19,134	67.3%
Air Force	4,889	17.2%
Marine Corps	2,953	10.4%
Navy	1,326	4.7%
Coast Guard	115	0.4%
Public Health Service	9	0.0%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>
<b>Unit Component<sup>2</sup></b>		
Active	10,465	50.2%
Reserve	3,684	17.7%
National Guard	6,697	32.1%
<b>Subtotal</b>	<b>20,846</b>	<b>100.0%</b>
Data unavailable	7,580	
<b>Total</b>	<b>28,426</b>	
<b>Rank<sup>3</sup></b>		
Enlisted	17,393	83.4%
Officer	2,848	13.7%
Warrant Officer	605	2.9%
<b>Subtotal</b>	<b>20,846</b>	<b>100.0%</b>
Data unavailable	7,580	
<b>Total</b>	<b>28,426</b>	
<b>Service Status<sup>3</sup></b>		
Veteran <sup>4</sup>	20,846	73.3%
Data unavailable	7,580	26.7%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>

Note: 7,580 members of the September 2014 Registry cohort were not represented in the demographic data available to VA for individuals who deployed to OEF/OIF/OND and separated from military service. A source of demographic data for these participants is being identified for inclusion in future reports.

<sup>1</sup> Branch of Service is from the Registry data and is based on the latest Southwest Asia deployment segment.

<sup>2</sup> Unit Component is from the OPH roster file of OEF/OIF/OND Veterans at the time of the latest deployment segment.

<sup>3</sup> Rank and Service Status are from the OPH roster file of OEF/OIF/OND Veterans at the time of the latest deployment segment.

<sup>4</sup> For Service Status, Veterans are those Registry participants on the OPH roster file of OEF/OIF/OND Veterans. Currently, we do not have the information to determine the Service Status of the Data unavailable group.

**Table 4: Deployment History of Registry Participants**

<b>Characteristic</b>	<b>No.</b>	<b>%</b>
<b>Number of Eligible Deployment Segments<sup>1</sup></b>		
One	6,756	23.8%
Two	4,537	16.0%
Three	3,496	12.3%
Four	2,615	9.2%
Five	2,374	8.4%
Six or more	8,648	30.4%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>
<b>Length of Eligible Service<sup>1, 2</sup></b>		
Fewer than 6 months	4,156	14.6%
6 to 11 months	10,240	36.0%
12 to 23 months	9,244	32.5%
24 to 35 months	3,621	12.7%
36 to 47 months	939	3.3%
48 months or more	226	0.8%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>

<sup>1</sup> Number of Deployment Segments and Length of Eligible Service are from the Airborne Hazards and Open Burn Pit Registry Questionnaire Section 1.

<sup>2</sup> Length of Eligible Service is the number of months a Registry participant spent on all eligible deployment segments.



**Table 5: In-Person Clinical Evaluation**

<b>Participants</b>	<b>No.</b>	<b>%</b>
<b>Interested in receiving in-person clinical evaluation (question 7.1.B)</b>		
Yes	15,196	53.5%
<b>Branch of Service for those who answered "Yes" above<sup>1</sup></b>		
Army	10,737	70.7%
Air Force	1,982	13.0%
Marine Corps	1,688	11.1%
Navy	738	4.9%
Coast Guard	45	0.3%
Public Health Service	6	0.0%
<b>Total</b>	<b>15,196</b>	<b>100.0%</b>
<b>Component<sup>2</sup> for those who answered "Yes" above</b>		
National Guard	3,523	29.7%
Active	6,132	51.8%
Reserve	2,189	18.5%
<b>Subtotal</b>	<b>11,844</b>	<b>100.0%</b>
Data unavailable	3,352	
<b>Total</b>	<b>15,196</b>	
<b>Age<sup>3</sup> for those who answered "Yes" above</b>		
55+	801	5.3%
45-54	3,523	23.2%
35-44	5,022	33.0%
30-34	3,307	21.8%
<30	2,543	16.7%
<b>Total</b>	<b>15,196</b>	<b>100.0%</b>
<b>Service status for those who answered "Yes" above</b>		
Veteran <sup>4</sup>	11,844	77.9%
Data unavailable	3,352	22.1%
<b>Total</b>	<b>15,196</b>	<b>100.0%</b>
<b>Participants seen for the in-person clinical evaluation (per Veterans Integrated Service Network (VISN) <sup>5</sup></b>		
Yes	36	0.1%
<b>VISN of Clinical Evaluation</b>		
VISN 3: VA New York/New Jersey Healthcare System	10	27.8%
VISN 7: VA Southeast Network	1	2.8%
VISN 11: Veterans in Partnership Health Network	13	36.1%
VISN 15: VA Heartland Network	1	2.8%
VISN 17: VA Heart of Texas Health Care Network	2	5.6%
VISN 18: VA Southeast Health Care Network	4	11.1%
VISN 19: VA Rocky Mountain Network	1	2.8%
VISN 21: VA Sierra Pacific Network	2	5.6%
VISN 22: VA Desert Pacific Healthcare Network	1	2.8%
VISN 23: VA Midwest Health Care Network	1	2.8%
<b>Total</b>	<b>36</b>	<b>100.0%</b>

Note: These tables include evaluations through December 31, 2014.

<sup>1</sup> Branch of Service is from the Registry data and is based on the latest Southwest Asia deployment segments.

<sup>2</sup> Component is from the OPH roster file of OEF/OIF/OND Veterans, at the time of the latest deployment segment.

<sup>3</sup> Age is from the Airborne Hazards and Open Burn Pit Registry data at the time of questionnaire completion.

<sup>4</sup> For Service Status, Veterans are those Registry participants on the OPH roster file of OEF/OIF/OND Veterans. Currently, we do not have the information to determine the Service Status of the Data unavailable group.

<sup>5</sup> Clinical evaluations were extracted from the CDW table Health Factor where the HealthFactorType field started with the string "AH-BPR," and the encounter date was on or before December 31, 2014. Evaluations were further limited to persons who also completed the Registry questionnaire, which was not a requirement for receiving an evaluation.

**Table 6: VHA Health Care Utilization of Registry Participants**

<b>Characteristics</b>	<b>No.</b>	<b>%</b>
<b>Participant was officially enrolled with the VHA since fiscal year 2013<sup>1</sup></b>	<b>18,848</b>	<b>66.3%</b>
<b>Priority group number for officially enrolled participants</b>		
Group 1	9,147	48.5%
Group 2	2,469	13.1%
Group 3	2,165	11.5%
Group 4	11	0.1%
Group 5	626	3.3%
Group 6	3,076	16.3%
Group 7	47	0.3%
Group 8	1,307	6.9%
<b>Total</b>	<b>18,848</b>	<b>100.0%</b>
<b>Participant received VHA health care since fiscal year 2013<sup>1</sup></b>	<b>16,323</b>	<b>57.4%</b>
<b>VHA patient, Gender<sup>2</sup></b>		
Male	14,488	89.3%
Female	1,731	10.7%
<b>Subtotal</b>	<b>16,219</b>	<b>100.0%</b>
Unknown	104	
<b>Total</b>	<b>16,323</b>	
<b>VHA patient, Birth year<sup>3</sup></b>		
Pre-1960	1,095	6.7%
1960-1969	4,089	25.1%
1970-1979	4,784	29.3%
1980 or later	6,355	38.9%
<b>Total</b>	<b>16,323</b>	<b>100.0%</b>
<b>VHA patient, Rank<sup>4</sup></b>		
Enlisted	12,534	86.6%
Officer	1,577	10.9%
Warrant Officer	355	2.4%
<b>Subtotal</b>	<b>14,466</b>	<b>100.0%</b>
Data unavailable	1,857	
<b>Total</b>	<b>16,323</b>	
<b>VHA patient, Unit component<sup>4</sup></b>		
National Guard	4,307	29.8%
Active	7,748	53.6%
Reserve	2,411	16.7%
<b>Subtotal</b>	<b>14,466</b>	<b>100.0%</b>
Data unavailable	1,857	
<b>Total</b>	<b>16,323</b>	

**Table 6 (cont'd): VHA Health Care Utilization of Registry Participants**

Characteristics	No.	%
<b>VHA patient, Branch<sup>5</sup></b>		
Army	11,097	68.0%
Air Force	2,382	14.6%
Marine Corps	1,992	12.2%
Navy	821	5.0%
Coast Guard	22	0.1%
Public Health Service	9	0.1%
<b>Total</b>	<b>16,323</b>	
<b>VHA patient, Preferred VISN<sup>6</sup></b>		
VISN 1: VA New England Healthcare System	674	4.7%
VISN 2: VA Healthcare Network Upstate New York	361	2.5%
VISN 3: VA New York/New Jersey Healthcare System	373	2.6%
VISN 4: VA Stars & Stripes Healthcare System	673	4.7%
VISN 5: VA Capitol Health Care System	421	2.9%
VISN 6: VA Mid-Atlantic Health Care Network	870	6.0%
VISN 7: VA Southeast Network	1004	7.0%
VISN 8: VA Sunshine Healthcare Network	753	5.2%
VISN 9: VA MidSouth Healthcare Network	930	6.5%
VISN 10: VA Healthcare System of Ohio	385	2.7%
VISN 11: Veterans in Partnership Health Network	654	4.5%
VISN 12: VA Great Lakes Health Care System	529	3.7%
VISN 15: VA Heartland Network	582	4.0%
VISN 16: South Central VA Health Care Network	1,102	7.6%
VISN 17: VA Heart of Texas Health Care Network	998	6.9%
VISN 18: VA Southeast Health Care Network	760	5.3%
VISN 19: VA Rocky Mountain Network	589	4.1%
VISN 20: VA Northwest Health Network	653	4.5%
VISN 21: VA Sierra Pacific Network	484	3.4%
VISN 22: VA Desert Pacific Healthcare Network	636	4.4%
VISN 23: VA Midwest Health Care Network	979	6.8%
<b>Subtotal</b>	<b>14,410</b>	<b>100.0%</b>
Unknown	1,913	
<b>Total</b>	<b>16,323</b>	

Note: These tables include VHA enrollment data through fiscal year 2014.

<sup>1</sup> Includes those who received VHA health care in fiscal years 2013, 2014, and the first quarter of 2015. Veterans and Active Duty Servicemembers who did not have a record in the VHA ADUSH enrollment files were counted as not having used VHA health care and not enrolled for VHA health care.

<sup>2</sup> Gender is from the OPH roster file of OEF/OIF/OND Veterans, at the time of the latest deployment segment, and the fiscal year 2014 VHA ADUSH enrollment files.

<sup>3</sup> Birth year is from the Airborne Hazards and Open Burn Pit Registry data at the time of questionnaire completion.

<sup>4</sup> Rank and Unit component are from the OPH roster file of OEF/OIF/OND Veterans, at the time of the latest deployment segment.

<sup>5</sup> Branch is from the Airborne Hazards and Open Burn Pit Registry data at the time of latest eligible deployment.

<sup>6</sup> Preferred VISN is from VHA ADUSH enrollment files.

## Section 2: Special Analyses Tables on the Association between Exposure and Health Conditions

This section presents data on the associations between exposure and health conditions. Exposure measures include burn pit and dust storm exposure.

**Table 7: Distribution of Participants by Burn Pit and Dust Storm Exposures**

Source of Exposure	Participants	
	No.	%
<b>Burn pit exposure<sup>1</sup></b>		
Both burn pit exposure and duties	17,570	61.8%
Burn pit exposure only	9,431	33.2%
No burn pit exposure	377	1.3%
Missing	1,048	3.7%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>
<b>Dust storm exposure in typical month<sup>2</sup></b>		
High (11 to 31 days)	6,954	24.5%
Moderate (5 to 10 days)	9,574	33.7%
Low (0 to 4 days)	8,254	29.0%
Missing	3,644	12.8%
<b>Total</b>	<b>28,426</b>	<b>100.0%</b>

<sup>1</sup> Burn pit exposure was based on questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?).

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

Data on burn pit exposure are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>2</sup> Dust storm exposure was based on question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).

Data on dust storm exposure are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

**Table 8: Reported Provider-Diagnosed Respiratory Conditions by Reported Burn Pit Exposure Status<sup>1</sup>**

Respiratory Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Allergies to pollen, dust, or animals (question 2.2.1.A)</b>								
Yes	10,667	41.2%	6,726	40.7%	3,775	41.9%	166	45.1%
No	15,215	58.8%	9,789	59.3%	5,224	58.1%	202	54.9%
<b>Subtotal</b>	<b>25,882</b>	<b>100.0%</b>	<b>16,515</b>	<b>100.0%</b>	<b>8,999</b>	<b>100.0%</b>	<b>368</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,496		1,055		432		9	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Asthma (question 2.2.1.B)</b>								
Yes	3,974	15.2%	2,662	15.9%	1,260	13.8%	52	14.3%
No	22,249	84.8%	14,071	84.1%	7,867	86.2%	311	85.7%
<b>Subtotal</b>	<b>26,223</b>	<b>100.0%</b>	<b>16,733</b>	<b>100.0%</b>	<b>9,127</b>	<b>100.0%</b>	<b>363</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,155		837		304		14	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Emphysema (question 2.2.1.C)</b>								
Yes	325	1.2%	224	1.3%	97	1.0%	4	1.1%
No	26,214	98.8%	16,676	98.7%	9,168	99.0%	370	98.9%
<b>Subtotal</b>	<b>26,539</b>	<b>100.0%</b>	<b>16,900</b>	<b>100.0%</b>	<b>9,265</b>	<b>100.0%</b>	<b>374</b>	<b>100.0%</b>
Don't Know/Refused/Missing	839		670		166		3	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Chronic bronchitis (question 2.2.1.D)</b>								
Yes	3,480	13.5%	2,474	15.1%	974	10.8%	32	8.8%
No	22,310	86.5%	13,956	84.9%	8,022	89.2%	332	91.2%
<b>Subtotal</b>	<b>25,790</b>	<b>100.0%</b>	<b>16,430</b>	<b>100.0%</b>	<b>8,996</b>	<b>100.0%</b>	<b>364</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,588		1,140		435		13	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>COPD (question 2.2.1.E)</b>								
Yes	878	3.4%	618	3.7%	250	2.7%	10	2.7%
No	25,260	96.6%	15,996	96.3%	8,904	97.3%	360	97.3%
<b>Subtotal</b>	<b>26,138</b>	<b>100.0%</b>	<b>16,614</b>	<b>100.0%</b>	<b>9,154</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,240		956		277		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Emphysema, chronic bronchitis or COPD</b>								
Yes	3,996	15.7%	2,822	17.4%	1,135	12.8%	39	10.7%
No	21,472	84.3%	13,388	82.6%	7,760	87.2%	324	89.3%
<b>Subtotal</b>	<b>25,468</b>	<b>100.0%</b>	<b>16,210</b>	<b>100.0%</b>	<b>8,895</b>	<b>100.0%</b>	<b>363</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,910		1,360		536		14	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

**Table 8 (cont'd): Reported Provider-Diagnosed Respiratory Conditions by Reported Burn Pit Exposure Status<sup>1</sup>**

Respiratory Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Lung disease or condition other than asthma, emphysema, chronic bronchitis or COPD (question 2.2.1.F)</b>								
Yes	2,572	9.9%	1,741	10.6%	811	8.9%	20	5.5%
No	23,333	90.1%	14,728	89.4%	8,261	91.1%	344	94.5%
<b>Subtotal</b>	<b>25,905</b>	<b>100.0%</b>	<b>16,469</b>	<b>100.0%</b>	<b>9,072</b>	<b>100.0%</b>	<b>364</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,473		1,101		359		13	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Constrictive bronchiolitis (CB) (question 2.2.1.G)<sup>2</sup></b>								
Yes	309	1.2%	231	1.4%	78	0.9%	0	0.0%
No	25,107	98.8%	15,877	98.6%	8,870	99.1%	360	100.0%
<b>Subtotal</b>	<b>25,416</b>	<b>100.0%</b>	<b>16,108</b>	<b>100.0%</b>	<b>8,948</b>	<b>100.0%</b>	<b>360</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,962		1,462		483		17	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Idiopathic pulmonary fibrosis (IPF) (question 2.2.1.H)<sup>2</sup></b>								
Yes	56	0.2%	38	0.2%	18	0.2%	0	0.0%
No	25,461	99.8%	16,140	99.8%	8,957	99.8%	364	100.0%
<b>Subtotal</b>	<b>25,517</b>	<b>100.0%</b>	<b>16,178</b>	<b>100.0%</b>	<b>8,975</b>	<b>100.0%</b>	<b>364</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,861		1,392		456		13	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	<b>17,570</b>
<b>At least one of the respiratory conditions described above</b>								
Yes	7,746	30.4%	5,224	32.2%	2,432	27.4%	90	25.4%
No	17,702	69.6%	11,009	67.8%	6,429	72.6%	264	74.6%
<b>Subtotal</b>	<b>25,448</b>	<b>100.0%</b>	<b>16,233</b>	<b>100.0%</b>	<b>8,861</b>	<b>100.0%</b>	<b>354</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,930		1,337		570		23	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

Note: Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

<sup>2</sup>Only respondents who answered question 2.2.1.F 'Yes' that they had been diagnosed with another lung disease were asked questions 2.2.1.G and 2.2.1.H about constrictive bronchiolitis (CB) and idiopathic pulmonary fibrosis (IPF), respectively. Those who said 'No' to question 2.2.1.F were included in the denominator for calculating the percentage with CB and IPF.

**Table 9: Reported Provider-Diagnosed Respiratory Conditions by Reported Dust Storm Exposure Status<sup>1</sup>**

Respiratory Condition	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>Allergies to pollen, dust, or animals (question 2.2.1.A)</b>								
Yes	9,778	41.6%	2,856	43.9%	3,723	41.0%	3,199	40.4%
No	13,743	58.4%	3,647	56.1%	5,368	59.0%	4,728	59.6%
<b>Subtotal</b>	<b>23,521</b>	<b>100.0%</b>	<b>6,503</b>	<b>100.0%</b>	<b>9,091</b>	<b>100.0%</b>	<b>7,927</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,261		451		483		327	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Asthma (question 2.2.1.B)</b>								
Yes	3,603	15.1%	1,183	18.0%	1,328	14.4%	1,092	13.6%
No	20,182	84.9%	5,387	82.0%	7,878	85.6%	6,917	86.4%
<b>Subtotal</b>	<b>23,785</b>	<b>100.0%</b>	<b>6,570</b>	<b>100.0%</b>	<b>9,206</b>	<b>100.0%</b>	<b>8,009</b>	<b>100.0%</b>
Don't Know/Refused/Missing	997		384		368		245	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Emphysema (question 2.2.1.C)</b>								
Yes	295	1.2%	110	1.7%	111	1.2%	74	0.9%
No	23,753	98.8%	6,507	98.3%	9,198	98.8%	8,048	99.1%
<b>Subtotal</b>	<b>24,048</b>	<b>100.0%</b>	<b>6,617</b>	<b>100.0%</b>	<b>9,309</b>	<b>100.0%</b>	<b>8,122</b>	<b>100.0%</b>
Don't Know/Refused/Missing	734		337		265		132	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Chronic bronchitis (question 2.2.1.D)</b>								
Yes	3,190	13.6%	1,165	18.1%	1,183	13.1%	842	10.6%
No	20,203	86.4%	5,258	81.9%	7,873	86.9%	7,072	89.4%
<b>Subtotal</b>	<b>23,393</b>	<b>100.0%</b>	<b>6,423</b>	<b>100.0%</b>	<b>9,056</b>	<b>100.0%</b>	<b>7,914</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,389		531		518		340	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>COPD (question 2.2.1.E)</b>								
Yes	796	3.4%	306	4.7%	282	3.1%	208	2.6%
No	22,913	96.6%	6,155	95.3%	8,915	96.9%	7,843	97.4%
<b>Subtotal</b>	<b>23,709</b>	<b>100.0%</b>	<b>6,461</b>	<b>100.0%</b>	<b>9,197</b>	<b>100.0%</b>	<b>8,051</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,073		493		377		203	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Emphysema, chronic bronchitis or COPD</b>								
Yes	3,661	15.8%	1,323	20.9%	1,371	15.3%	967	12.3%
No	19,460	84.2%	4,995	79.1%	7,581	84.7%	6,884	87.7%
<b>Subtotal</b>	<b>23,121</b>	<b>100.0%</b>	<b>6,318</b>	<b>100.0%</b>	<b>8,952</b>	<b>100.0%</b>	<b>7,851</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,661		636		622		403	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

**Table 9 (cont'd): Reported Provider-Diagnosed Respiratory Conditions by Reported Dust Storm Exposure Status<sup>1</sup>**

Respiratory Condition	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>Lung disease or condition other than asthma, emphysema, chronic bronchitis or COPD (question 2.2.1.F)</b>								
Yes	2,353	10.0%	767	12.0%	907	10.0%	679	8.5%
No	21,157	90.0%	5,647	88.0%	8,199	90.0%	7,311	91.5%
<b>Subtotal</b>	<b>23,510</b>	<b>100.0%</b>	<b>6,414</b>	<b>100.0%</b>	<b>9,106</b>	<b>100.0%</b>	<b>7,990</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,272		540		468		264	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Constrictive bronchiolitis (CB) (question 2.2.1.G)<sup>2</sup></b>								
Yes	283	1.2%	123	2.0%	95	1.1%	65	0.8%
No	22,777	98.8%	6,113	98.0%	8,856	98.9%	7,808	99.2%
<b>Subtotal</b>	<b>23,060</b>	<b>100.0%</b>	<b>6,236</b>	<b>100.0%</b>	<b>8,951</b>	<b>100.0%</b>	<b>7,873</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,722		718		623		381	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Idiopathic pulmonary fibrosis (IPF) (question 2.2.1.H)</b>								
Yes	57	0.2%	32	0.5%	15	0.2%	10	0.1%
No	23,088	99.8%	6,224	99.5%	8,972	99.8%	7,892	99.9%
<b>Subtotal</b>	<b>23,145</b>	<b>100.0%</b>	<b>6,256</b>	<b>100.0%</b>	<b>8,987</b>	<b>100.0%</b>	<b>7,902</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,637		698		587		352	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>At least one of the respiratory conditions described above</b>								
Yes	7,040	30.4%	2,282	35.9%	2,696	30.1%	2,062	26.4%
No	16,081	69.6%	4,077	64.1%	6,250	69.9%	5,754	73.6%
<b>Subtotal</b>	<b>23,121</b>	<b>100.0%</b>	<b>6,359</b>	<b>100.0%</b>	<b>8,946</b>	<b>100.0%</b>	<b>7,816</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,661		595		628		438	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

Note: Excludes respondents with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?)

<sup>2</sup>Only respondents who answered question 2.2.1.F "Yes" that they had been diagnosed with another lung disease were asked questions 2.2.1.G and 2.2.1.H about constrictive bronchiolitis (CB) and idiopathic pulmonary fibrosis (IPF), respectively. Those who said "No" to question 2.2.1.F were included in the denominator for calculating the percentage with CB and IPF.



**Table 10: Reported Provider-Diagnosed Cardiovascular Conditions by Reported Burn Pit Exposure Status<sup>1</sup>**

Cardiovascular Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>High blood pressure (question 2.2.2.A)</b>								
Yes	9,499	35.9%	6,374	37.7%	2,997	32.6%	128	34.7%
No	16,942	64.1%	10,517	62.3%	6,184	67.4%	241	65.3%
<b>Subtotal</b>	<b>26,441</b>	<b>100.0%</b>	<b>16,891</b>	<b>100.0%</b>	<b>9,181</b>	<b>100.0%</b>	<b>369</b>	<b>100.0%</b>
Don't Know/Refused/Missing	937		679		250		8	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>77</b>	
<b>Coronary artery disease (question 2.2.2.B)</b>								
Yes	477	1.8%	299	1.8%	168	1.8%	10	2.7%
No	26,044	98.2%	16,618	98.2%	9,066	98.2%	360	97.3%
<b>Subtotal</b>	<b>26,521</b>	<b>100.0%</b>	<b>16,917</b>	<b>100.0%</b>	<b>9,234</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't Know/Refused/Missing	857		653		197		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Angina pectoris (question 2.2.2.C)</b>								
Yes	305	1.2%	220	1.3%	80	0.9%	5	1.4%
No	25,487	98.8%	16,147	98.7%	8,985	99.1%	355	98.6%
<b>Subtotal</b>	<b>25,792</b>	<b>100.0%</b>	<b>16,367</b>	<b>100.0%</b>	<b>9,065</b>	<b>100.0%</b>	<b>360</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,586		1,203		366		17	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Myocardial infarction (question 2.2.2.D)</b>								
Yes	348	1.3%	225	1.3%	112	1.2%	11	2.9%
No	26,515	98.7%	16,924	98.7%	9,229	98.8%	362	97.1%
<b>Subtotal</b>	<b>26,863</b>	<b>100.0%</b>	<b>17,149</b>	<b>100.0%</b>	<b>9,341</b>	<b>100.0%</b>	<b>373</b>	<b>100.0%</b>
Don't Know/Refused/Missing	515		421		90		4	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Heart condition other than coronary artery disease, angina, or myocardial infarction (question 2.2.2.E)</b>								
Yes	1,760	6.7%	1,103	6.6%	631	6.9%	26	7.0%
No	24,656	93.3%	15,733	93.4%	8,579	93.1%	344	93.0%
<b>Subtotal</b>	<b>26,416</b>	<b>100.0%</b>	<b>16,836</b>	<b>100.0%</b>	<b>9,210</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't Know/Refused/Missing	962		734		221		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

**Table 10 (cont'd): Reported Provider-Diagnosed Cardiovascular Conditions by Reported Burn Pit Exposure Status<sup>1</sup>**

Cardiovascular Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>At least one of the cardiovascular conditions described above</b>								
Yes	10,505	40.4%	6,969	42.0%	3,393	37.4%	143	39.2%
No	15,529	59.6%	9,631	58.0%	5,676	62.6%	222	60.8%
<b>Subtotal</b>	<b>26,034</b>	<b>100.0%</b>	<b>16,600</b>	<b>100.0%</b>	<b>9,069</b>	<b>100.0%</b>	<b>365</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,344		970		362		12	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

Note: Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

**Table 11: Reported Provider-Diagnosed Cardiovascular Conditions by Reported Dust Storm Exposure Status<sup>1</sup>**

Cardiovascular Condition	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>High blood pressure (question 2.2.2.A)</b>								
Yes	8,605	35.8%	2,666	39.9%	3,332	35.9%	2,607	32.4%
No	15,403	64.2%	4,016	60.1%	5,937	64.1%	5,450	67.6%
<b>Subtotal</b>	<b>24,008</b>	<b>100.0%</b>	<b>6,682</b>	<b>100.0%</b>	<b>9,269</b>	<b>100.0%</b>	<b>8,057</b>	<b>100.0%</b>
Don't Know/Refused/Missing	774		272		305		197	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Coronary artery disease (question 2.2.2.B)</b>								
Yes	431	1.8%	141	2.1%	167	1.8%	123	1.5%
No	23,618	98.2%	6,484	97.9%	9,142	98.2%	7,992	98.5%
<b>Subtotal</b>	<b>24,049</b>	<b>100.0%</b>	<b>6,625</b>	<b>100.0%</b>	<b>9,309</b>	<b>100.0%</b>	<b>8,115</b>	<b>100.0%</b>
Don't Know/Refused/Missing	733		329		265		139	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Angina pectoris (question 2.2.2.C)</b>								
Yes	283	1.2%	97	1.5%	108	1.2%	78	1.0%
No	23,112	98.8%	6,280	98.5%	8,962	98.8%	7,870	99.0%
<b>Subtotal</b>	<b>23,395</b>	<b>100.0%</b>	<b>6,377</b>	<b>100.0%</b>	<b>9,070</b>	<b>100.0%</b>	<b>7,948</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,387		577		504		306	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Myocardial infarction (question 2.2.2.D)</b>								
Yes	309	1.3%	100	1.5%	121	1.3%	88	1.1%
No	24,034	98.7%	6,639	98.5%	9,312	98.7%	8,083	98.9%
<b>Subtotal</b>	<b>24,343</b>	<b>100.0%</b>	<b>6,739</b>	<b>100.0%</b>	<b>9,433</b>	<b>100.0%</b>	<b>8,171</b>	<b>100.0%</b>
Don't Know/Refused/Missing	439		215		141		83	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Heart condition other than coronary artery disease, angina, or myocardial infarction (question 2.2.2.E)</b>								
Yes	1,613	6.7%	480	7.3%	593	6.4%	540	6.7%
No	22,349	93.3%	6,121	92.7%	8,689	93.6%	7,539	93.3%
<b>Subtotal</b>	<b>23,962</b>	<b>100.0%</b>	<b>6,601</b>	<b>100.0%</b>	<b>9,282</b>	<b>100.0%</b>	<b>8,079</b>	<b>100.0%</b>
Don't Know/Refused/Missing	820		353		292		175	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

**Table 11 (cont'd): Reported Provider-Diagnosed Cardiovascular Conditions by Reported Dust Storm Exposure Status<sup>1</sup>**

Cardiovascular Condition	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>At least one of the cardiovascular conditions described above</b>								
Yes	9,535	40.3%	2,928	44.6%	3,657	40.0%	2,950	37.1%
No	14,123	59.7%	3,640	55.4%	5,485	60.0%	4,998	62.9%
<b>Subtotal</b>	<b>23,658</b>	<b>100.0%</b>	<b>6,568</b>	<b>100.0%</b>	<b>9,142</b>	<b>100.0%</b>	<b>7,948</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,124		386		432		306	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

Note: Excludes respondents with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).

**Table 12: Reported Provider-Diagnosed Cancer History by Reported Burn Pit Exposure Status<sup>1</sup>**

Cancer	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Any cancer including non-melanoma skin cancer (question 2.4.A)</b>								
Yes	1,516	5.6%	877	5.1%	620	6.6%	19	5.1%
No	25,379	94.4%	16,316	94.9%	8,708	93.4%	355	94.9%
<b>Subtotal</b>	<b>26,895</b>	<b>100.0%</b>	<b>17,193</b>	<b>100.0%</b>	<b>9,328</b>	<b>100.0%</b>	<b>374</b>	<b>100.0%</b>
Don't Know/Refused/Missing	483		377		103		3	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Any cancer excluding non-melanoma skin cancer (question 2.4.B, D and F)</b>								
Yes	1,122	4.2%	663	3.9%	447	6.6%	12	3.3%
No	25,410	95.8%	16,337	96.1%	8,717	93.4%	356	96.7%
<b>Subtotal</b>	<b>26,532</b>	<b>100.0%</b>	<b>17,000</b>	<b>100.0%</b>	<b>9,164</b>	<b>100.0%</b>	<b>368</b>	<b>100.0%</b>
Don't Know/Refused/Missing	846		570		267		9	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>(Top 10) Type of cancer, among those reporting any cancer (may mark up to 3) (question 2.4.B, D and F)</b>								
Skin (non-melanoma)	378	1.4%	199	1.2%	173	1.9%	6	1.6%
Skin (Don't know what kind)	186	0.7%	106	0.6%	80	0.9%	0	0.0%
Melanoma	160	0.6%	88	0.5%	69	0.7%	3	0.8%
Prostate	87	0.3%	52	0.3%	34	0.4%	1	0.3%
Lymphoma	86	0.3%	52	0.3%	33	0.4%	1	0.3%
Thyroid	77	0.3%	48	0.3%	28	0.3%	1	0.3%
Other	74	0.3%	45	0.3%	29	0.3%	0	0.0%
Testis	72	0.3%	35	0.2%	36	0.4%	1	0.3%
Colon	54	0.2%	34	0.2%	19	0.2%	1	0.3%
Cervix	48	0.2%	29	0.2%	19	0.2%	0	0.0%

Note: Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

**Table 13: Reported Provider-Diagnosed Cancer History by Reported Dust Storm Exposure Status<sup>1</sup>**

Cancer	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>Any cancer including non-melanoma skin cancer (question 2.4.A)</b>								
Yes	1,375	5.6%	420	6.2%	528	5.6%	427	5.2%
No	23,011	94.4%	6,356	93.8%	8,907	94.4%	7,748	94.8%
<b>Subtotal</b>	<b>24,386</b>	<b>100.0%</b>	<b>6,776</b>	<b>100.0%</b>	<b>9,435</b>	<b>100.0%</b>	<b>8,175</b>	<b>100.0%</b>
Don't Know/Refused/Missing	396		178		139		79	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Any cancer excluding non-melanoma skin cancer (question 2.4.B, D and F)</b>								
Yes	1,021	4.2%	322	4.8%	390	4.2%	309	3.8%
No	23,037	95.8%	6,366	95.2%	8,915	95.8%	7,756	96.2%
<b>Subtotal</b>	<b>24,058</b>	<b>100.0%</b>	<b>6,688</b>	<b>100.0%</b>	<b>9,305</b>	<b>100.0%</b>	<b>8,065</b>	<b>100.0%</b>
Don't Know/Refused/Missing	724		266		269		189	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>(Top 10) Type of cancer, among those reporting any cancer (may mark up to 3) (question 2.4.B, D and F)</b>								
Skin (non-melanoma)	345	1.4%	122	1.5%	133	1.4%	90	1.3%
Skin (Don't know what kind)	172	0.7%	50	0.6%	71	0.8%	51	0.8%
Melanoma	148	0.6%	48	0.6%	57	0.6%	43	0.6%
Lymphoma	77	0.3%	29	0.4%	30	0.3%	18	0.3%
Prostate	76	0.3%	20	0.2%	34	0.4%	22	0.3%
Thyroid	72	0.3%	30	0.4%	20	0.2%	22	0.3%
Testis	70	0.3%	19	0.2%	35	0.4%	16	0.2%
Other	70	0.3%	18	0.2%	21	0.2%	31	0.5%
Colon	50	0.2%	9	0.1%	28	0.3%	13	0.2%
Kidney	40	0.2%	13	0.2%	18	0.2%	9	0.1%

Note: Excludes respondents with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).

**Table 14: Reported Provider-Diagnosed Other Health Conditions and Health Concerns in the Past 12 Months by Reported Burn Pit Exposure Status<sup>1</sup>**

Diagnosed in the Past 12 Months	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Liver condition (question 2.2.3.D)</b>								
Yes	1,787	6.7%	1,263	7.5%	510	5.5%	14	3.8%
No	24,714	93.3%	15,653	92.5%	8,709	94.5%	352	96.2%
<b>Subtotal</b>	<b>26,501</b>	<b>100.0%</b>	<b>16,916</b>	<b>100.0%</b>	<b>9,219</b>	<b>100.0%</b>	<b>366</b>	<b>100.0%</b>
Don't Know/Refused/Missing	877		654		212		11	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Chronic multi-symptom illness (question 2.2.3.E)</b>								
Yes	4,763	18.6%	3,418	21.0%	1,296	14.4%	49	13.5%
No	20,841	81.4%	12,848	79.0%	7,680	85.6%	313	86.5%
<b>Subtotal</b>	<b>25,604</b>	<b>100.0%</b>	<b>16,266</b>	<b>100.0%</b>	<b>8,976</b>	<b>100.0%</b>	<b>362</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,774		1,304		455		15	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Insomnia (question 2.2.3.A)</b>								
Yes	21,748	81.1%	14,824	85.9%	6,678	72.5%	246	66.1%
No	5,079	18.9%	2,425	14.1%	2,528	27.5%	126	33.9%
<b>Subtotal</b>	<b>26,827</b>	<b>100.0%</b>	<b>17,249</b>	<b>100.0%</b>	<b>9,206</b>	<b>100.0%</b>	<b>372</b>	<b>100.0%</b>
Don't Know/Refused/Missing	551		321		225		5	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Neurological problems (question 2.2.3.B)</b>								
Yes	19,305	73.6%	13,342	79.1%	5,746	63.9%	217	59.8%
No	6,914	26.4%	3,523	20.9%	3,245	36.1%	146	40.2%
<b>Subtotal</b>	<b>26,219</b>	<b>100.0%</b>	<b>16,865</b>	<b>100.0%</b>	<b>8,991</b>	<b>100.0%</b>	<b>363</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,159		705		440		14	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Immune system problems (question 2.2.3.C)</b>								
Yes	4,828	21.9%	3,482	25.2%	1,300	16.5%	46	13.6%
No	17,233	78.1%	10,351	74.8%	6,590	83.5%	292	86.4%
<b>Subtotal</b>	<b>22,061</b>	<b>100.0%</b>	<b>13,833</b>	<b>100.0%</b>	<b>7,890</b>	<b>100.0%</b>	<b>338</b>	<b>100.0%</b>
Don't Know/Refused/Missing	5,317		3,737		1,541		39	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

Note: Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

**Table 15: Reported Provider-Diagnosed Other Health Conditions in the Past 12 Months by Reported Dust Storm Exposure Status<sup>1</sup>**

Diagnosed in the Past 12 Months	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>Liver condition (question 2.2.3.D)</b>								
Yes	1,623	6.8%	548	8.3%	625	6.7%	450	5.6%
No	22,406	93.2%	6,083	91.7%	8,670	93.3%	7,653	94.4%
<b>Subtotal</b>	<b>24,029</b>	<b>100.0%</b>	<b>6,631</b>	<b>100.0%</b>	<b>9,295</b>	<b>100.0%</b>	<b>8,103</b>	<b>100.0%</b>
Don't Know/Refused/Missing	753		323		279		151	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Chronic multi-symptom illness (question 2.2.3.E)</b>								
Yes	4,367	18.8%	1,646	25.9%	1,632	18.1%	1,089	13.8%
No	18,898	81.2%	4,708	74.1%	7,367	81.9%	6,823	86.2%
<b>Subtotal</b>	<b>23,265</b>	<b>100.0%</b>	<b>6,354</b>	<b>100.0%</b>	<b>8,999</b>	<b>100.0%</b>	<b>7,912</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,517		600		575		342	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Insomnia (question 2.2.3.A)</b>								
Yes	19,646	80.7%	5,983	87.6%	7,643	81.4%	6,020	74.2%
No	4,686	19.3%	849	12.4%	1,748	18.6%	2,089	25.8%
<b>Subtotal</b>	<b>24,332</b>	<b>100.0%</b>	<b>6,832</b>	<b>100.0%</b>	<b>9,391</b>	<b>100.0%</b>	<b>8,109</b>	<b>100.0%</b>
Don't Know/Refused/Missing	450		122		183		145	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Neurological problems (question 2.2.3.B)</b>								
Yes	17,406	73.1%	5,439	80.8%	6,687	73.0%	5,280	66.7%
No	6,398	26.9%	1,289	19.2%	2,478	27.0%	2,631	33.3%
<b>Subtotal</b>	<b>23,804</b>	<b>100.0%</b>	<b>6,728</b>	<b>100.0%</b>	<b>9,165</b>	<b>100.0%</b>	<b>7,911</b>	<b>100.0%</b>
Don't Know/Refused/Missing	978		226		409		343	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Immune system problems (question 2.2.3.C)</b>								
Yes	4,457	22.0%	1,666	30.4%	1,685	21.7%	1,106	15.8%
No	15,770	78.0%	3,812	69.6%	6,069	78.3%	5,889	84.2%
<b>Subtotal</b>	<b>20,227</b>	<b>100.0%</b>	<b>5,478</b>	<b>100.0%</b>	<b>7,754</b>	<b>100.0%</b>	<b>6,995</b>	<b>100.0%</b>
Don't Know/Refused/Missing	4,555		1,476		1,820		1,259	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

Note: Excludes respondents with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).



**Table 16: Functional Limitations by Reported Burn Pit Exposure Status<sup>1</sup>**

Functional Limitation	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Number of measures having difficulty (questions 2.1.A to E below)</b>								
No difficulties	2,881	10.6%	1,380	7.9%	1,431	15.2%	70	18.7%
1 Difficulty	2,073	7.6%	1,118	6.4%	919	9.8%	36	9.6%
2 Difficulties	3,465	12.7%	2,005	11.5%	1,406	15.0%	54	14.4%
3 Difficulties	4,481	16.5%	2,831	16.2%	1,584	16.9%	66	17.7%
4 Difficulties	4,225	15.5%	2,803	16.1%	1,376	14.7%	46	12.3%
Difficulties with all 5	10,099	37.1%	7,324	41.9%	2,673	28.5%	102	27.3%
<b>Subtotal</b>	<b>27,224</b>	<b>100.0%</b>	<b>17,461</b>	<b>100.0%</b>	<b>9,389</b>	<b>100.0%</b>	<b>374</b>	<b>100.0%</b>
Don't Know/Refused/Missing for all 5	154		109		42		3	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Run or jog one mile (question 2.1.A)</b>								
Not at all difficult	3,713	14.4%	1,860	11.2%	1,777	20.0%	76	22.2%
Difficult	22,139	85.6%	14,752	88.8%	7,120	80.0%	267	77.8%
<b>Subtotal</b>	<b>25,852</b>	<b>100.0%</b>	<b>16,612</b>	<b>100.0%</b>	<b>8,897</b>	<b>100.0%</b>	<b>343</b>	<b>100.0%</b>
Don't do/No answer/Don't know	1,526		958		534		34	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Walk one mile (question 2.1.B)</b>								
Not at all difficult	11,287	41.9%	6,314	36.6%	4,780	51.3%	193	52.2%
Difficult	15,663	58.1%	10,956	63.4%	4,530	48.7%	177	47.8%
<b>Subtotal</b>	<b>26,950</b>	<b>100.0%</b>	<b>17,270</b>	<b>100.0%</b>	<b>9,310</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't do/No answer/Don't know	428		300		121		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Walk a 1/4 of a mile (question 2.1.C)</b>								
Not at all difficult	15,108	56.0%	8,751	50.6%	6,114	65.5%	243	65.7%
Difficult	11,891	44.0%	8,549	49.4%	3,215	34.5%	127	34.3%
<b>Subtotal</b>	<b>26,999</b>	<b>100.0%</b>	<b>17,300</b>	<b>100.0%</b>	<b>9,329</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't do/No answer/Don't know	379		270		102		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Walk up a hill or incline (question 2.1.D)</b>								
Not at all difficult	4,838	17.9%	2,415	13.9%	2,312	24.8%	111	30.0%
Difficult	22,186	82.1%	14,910	86.1%	7,017	75.2%	259	70.0%
<b>Subtotal</b>	<b>27,024</b>	<b>100.0%</b>	<b>17,325</b>	<b>100.0%</b>	<b>9,329</b>	<b>100.0%</b>	<b>370</b>	<b>100.0%</b>
Don't do/No answer/Don't know	354		245		102		7	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	
<b>Walk up 10 steps (question 2.1.E)</b>								
Not at all difficult	9,118	33.7%	5,072	29.2%	3,879	41.5%	167	44.8%
Difficult	17,962	66.3%	12,286	70.8%	5,470	58.5%	206	55.2%
<b>Subtotal</b>	<b>27,080</b>	<b>100.0%</b>	<b>17,358</b>	<b>100.0%</b>	<b>9,349</b>	<b>100.0%</b>	<b>373</b>	<b>100.0%</b>
Don't do/No answer/Don't know	298		212		82		4	
<b>Total</b>	<b>27,378</b>		<b>17,570</b>		<b>9,431</b>		<b>377</b>	

**Table 16 (cont'd): Functional Limitations by Reported Burn Pit Exposure Status<sup>1</sup>**

Functional Limitation	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>(Top 10) Condition or health problem causing difficulty with the above activities (Check all that apply.) (question 2.1.F series)</b>								
Back or neck problem	12,292	59.5%	8,695	62.7%	3,474	53.1%	123	47.5%
Knee problems (not arthritis, not joint injury)	7,953	38.5%	5,632	40.6%	2,232	34.1%	89	34.4%
Lung/breathing problem	7,069	34.2%	4,879	35.2%	2,122	32.4%	68	26.3%
Arthritis/rheumatism	6,123	29.6%	4,209	30.4%	1,840	28.1%	74	28.6%
Depression/anxiety/emotional problem	5,052	24.4%	3,854	27.8%	1,165	17.8%	33	12.7%
Other impairment/problem	4,351	21.1%	2,895	20.9%	1,408	21.5%	48	18.5%
Migraine headaches	4,111	19.9%	3,071	22.2%	1,008	15.4%	32	12.4%
Fracture, bone/joint injury	3,420	16.5%	2,434	17.6%	953	14.6%	33	12.7%
Weight problem	3,344	16.2%	2,412	17.4%	898	13.7%	34	13.1%
Hypertension/high blood pressure	3,058	14.8%	2,172	15.7%	851	13.0%	35	13.5%

Note: Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

**Table 17: Functional Limitations by Reported Dust Storm Exposure Status<sup>1</sup>**

Functional Limitation	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>Number of measures having difficulty (questions 2.1.A to E below)</b>								
No difficulties	2,607	9.6%	453	6.6%	927	9.7%	1,227	14.9%
1 Difficulty	1,896	7.0%	332	4.8%	769	8.1%	795	9.7%
2 Difficulties	3,127	11.5%	594	8.6%	1,230	12.9%	1,303	15.8%
3 Difficulties	4,073	15.0%	965	14.0%	1,648	17.3%	1,460	17.7%
4 Difficulties	3,829	14.1%	1,079	15.6%	1,531	16.1%	1,219	14.8%
Difficulties with all 5	9,157	33.6%	3,497	50.5%	3,435	36.0%	2,225	27.0%
<b>Subtotal</b>	<b>24,689</b>	<b>90.7%</b>	<b>6,920</b>	<b>100.0%</b>	<b>9,540</b>	<b>100.0%</b>	<b>8,229</b>	<b>100.0%</b>
Don't Know/Refused/Missing for all 5	93		34		34		25	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Run or jog one mile (question 2.1.A)</b>								
Not at all difficult	3,392	14.4%	608	9.2%	1,241	13.6%	1,543	19.8%
Difficult	20,149	85.6%	6,017	90.8%	7,874	86.4%	6,258	80.2%
<b>Subtotal</b>	<b>23,541</b>	<b>100.0%</b>	<b>6,625</b>	<b>100.0%</b>	<b>9,115</b>	<b>100.0%</b>	<b>7,801</b>	<b>100.0%</b>
Don't do/No answer/Don't know	1,241		329		459		453	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Walk one mile (question 2.1.B)</b>								
Not at all difficult	10,287	42.0%	1,985	29.0%	4,003	42.2%	4,299	52.6%
Difficult	14,203	58.0%	4,862	71.0%	5,472	57.8%	3,869	47.4%
<b>Subtotal</b>	<b>24,490</b>	<b>100.0%</b>	<b>6,847</b>	<b>100.0%</b>	<b>9,475</b>	<b>100.0%</b>	<b>8,168</b>	<b>100.0%</b>
Don't do/No answer/Don't know	292		107		99		86	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Walk a 1/4 of a mile (question 2.1.C)</b>								
Not at all difficult	13,783	56.2%	2,838	41.4%	5,459	57.5%	5,486	67.0%
Difficult	10,750	43.8%	4,017	58.6%	4,030	42.5%	2,703	33.0%
<b>Subtotal</b>	<b>24,533</b>	<b>100.0%</b>	<b>6,855</b>	<b>100.0%</b>	<b>9,489</b>	<b>100.0%</b>	<b>8,189</b>	<b>100.0%</b>
Don't do/No answer/Don't know	249		99		85		65	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Walk up a hill or incline (question 2.1.D)</b>								
Not at all difficult	4,437	18.1%	793	11.6%	1,672	17.6%	1,972	24.1%
Difficult	20,101	81.9%	6,063	88.4%	7,827	82.4%	6,211	75.9%
<b>Subtotal</b>	<b>24,538</b>	<b>100.0%</b>	<b>6,856</b>	<b>100.0%</b>	<b>9,499</b>	<b>100.0%</b>	<b>8,183</b>	<b>100.0%</b>
Don't do/No answer/Don't know	244		98		75		71	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	
<b>Walk up 10 steps (question 2.1.E)</b>								
Not at all difficult	8,312	33.8%	1,625	23.6%	3,223	34.0%	3,464	42.2%
Difficult	16,267	66.2%	5,257	76.4%	6,269	66.0%	4,741	57.8%
<b>Subtotal</b>	<b>24,579</b>	<b>100.0%</b>	<b>6,882</b>	<b>100.0%</b>	<b>9,492</b>	<b>100.0%</b>	<b>8,205</b>	<b>100.0%</b>
Don't do/No answer/Don't know	203		72		82		49	
<b>Total</b>	<b>24,782</b>		<b>6,954</b>		<b>9,574</b>		<b>8,254</b>	

**Table 17 (cont'd): Functional Limitations by Reported Dust Storm Exposure Status<sup>1</sup>**

Functional Limitation	Total		High Exposure (11-13 days)		Moderate Exposure (5-10 days)		Low Exposure (0-4 days)	
	No.	%	No.	%	No.	%	No.	%
<b>(Top 10) Condition or health problem causing difficulty with the above activities (question 2.1.F series)</b>								
Back or neck problem	11,132	59.0%	3,562	63.4%	4,353	59.3%	3,217	54.6%
Knee problems (not arthritis, not joint injury)	7,203	38.2%	2,351	41.8%	2,742	37.4%	2,110	35.8%
Lung/breathing problem	6,456	34.2%	2,110	37.6%	2,478	33.8%	1,868	31.7%
Arthritis/rheumatism	5,585	29.6%	1,876	33.4%	2,132	29.1%	1,577	26.7%
Depression/anxiety/emotional problem	4,574	24.3%	1,781	31.7%	1,660	22.6%	1,133	19.2%
Other impairment/problem	4,000	21.2%	1,280	22.8%	1,549	21.1%	1,171	19.9%
Migraine headaches	3,738	19.8%	1,441	25.6%	1,384	18.9%	913	15.5%
Fracture, bone/joint injury	3,128	16.6%	1,016	18.1%	1,198	16.3%	914	15.5%
Weight problem	3,033	16.1%	1,043	18.6%	1,110	15.1%	880	14.9%
Hypertension/high blood pressure	2,794	14.8%	1,000	17.8%	1,073	14.6%	721	12.2%

Note: Excludes respondents with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).

# GLOSSARY OF TERMS

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## **BURN PITS**

The use of burn pits was a common waste disposal practice at military sites outside of the U.S., such as in Iraq and Afghanistan. Smoke and other emissions from these pits contained an unknown mixture of substances that may have short- and long-term health effects, especially for individuals who were exposed for longer periods or those with pre-existing conditions, such as asthma or other lung or heart conditions.

## **ELIGIBLE (for Registry participation)**

VA will use deployment data provided by the Department of Defense (DOD) to determine eligibility. To be eligible, a Veteran or Servicemember must have deployed to contingency operations in the Southwest Asia theater of operations at any time on or after August 2, 1990 (as defined in 38 CFR 3.317(e) (2)) or Afghanistan or Djibouti on or after September 11, 2001. These regions include the following countries, bodies of water, and the airspace above these locations: Iraq, Afghanistan, Kuwait, Saudi Arabia, Bahrain, Djibouti, Gulf of Aden, Gulf of Oman, Oman, Qatar, United Arab Emirates, and Waters of the Persian Gulf, Arabian Sea, and Red Sea.

## **GULF WAR VETERANS**

For the purposes of the Registry, a Gulf War Veteran is a person who served in Operation Desert Shield (August 2, 1990, to January 15, 1991), Operation Desert Storm (January 16, 1991, to February 28, 1991), Post-Desert Storm Period (March 1, 1991, to January 31, 1992) and/or in the Stabilization Period (February 1, 1992, to September 10, 2001).

## **OPERATION ENDURING FREEDOM**

For the purposes of the Registry, Operation Enduring Freedom is defined as service in Afghanistan and Djibouti after September 11, 2001.

## **OPERATION IRAQI FREEDOM (OIF)**

For the purposes of the Registry, Operation Iraqi Freedom began in March of 2003 when U.S. and coalition forces moved into Iraq from Kuwait. OIF continued until August 2010.

## **OPERATION NEW DAWN**

For the purposes of the Registry, Operation New Dawn (began in August of 2010 in Iraq and ended in December 2011).

## **REGISTRY PARTICIPANT**

A Registry participant is an eligible Veteran or Servicemember who completed and submitted the online Registry questionnaire.

## **SERVICEMEMBER**

For the purposes of the Registry, a Servicemember is a person who is serving on active duty in one of the following branches of the United States Armed Forces: Army, Marine Corps, Navy, Air Force, National Guard, or the Coast Guard.

## **SOUTHWEST ASIA THEATER**

Southwest Asia theater of operations (as defined in 38 CFR 3.317 (e)(2)) includes the following countries, bodies of water, and the air space above these locations: Iraq, Kuwait, Saudi Arabia, Bahrain, Gulf of Aden, Gulf of Oman, Oman, Qatar, United Arab Emirates, and waters of the Persian Gulf, Arabian Sea, and Red Sea.

## **USER VALIDATED DATA (DEPLOYMENT)**

Deployment and demographic data are from DoD data sources (VADIR) after the user's personal identifier is authenticated and stored in the Registry database. All deployments from DoD data are displayed to the user. The user will then indicate if the deployment dates are valid or not, add missing deployments, and select which base names they were at while deployed. *Source: VA AH&OBP Registry Self-Assessment Questionnaire.*

## **VETERAN**

For the purposes of the Registry, a Veteran is a person who has separated from active military, naval, or air service, or any Guard/Reserve person who served in at least one active duty deployment.

# **APPENDIX 1**

## **Supplementary Analysis of Newly Diagnosed Respiratory and Cardiovascular Conditions**

**Table A-1: Reported Respiratory Conditions by Reported Burn Pit Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Respiratory Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Allergies to pollen, dust, or animals (question 2.2.1.A)</b>								
Yes	9,283	39.3%	5,841	38.9%	3,297	40.0%	145	43.7%
No	14,314	60.7%	9,190	61.1%	4,937	60.0%	187	56.3%
<b>Subtotal</b>	<b>23,597</b>	<b>100.0%</b>	<b>15,031</b>	<b>100.0%</b>	<b>8,234</b>	<b>100.0%</b>	<b>332</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,392		973		410		9	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Asthma (question 2.2.1.B)</b>								
Yes	2,576	10.8%	1,760	11.5%	787	9.4%	29	8.9%
No	21,352	89.2%	13,482	88.5%	7,572	90.6%	298	91.1%
<b>Subtotal</b>	<b>23,928</b>	<b>100.0%</b>	<b>15,242</b>	<b>100.0%</b>	<b>8,359</b>	<b>100.0%</b>	<b>327</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,061		762		285		14	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Emphysema (question 2.2.1.C)</b>								
Yes	243	1.0%	173	1.1%	67	0.8%	3	0.9%
No	24,038	99.0%	15,269	98.9%	8,434	99.2%	335	99.1%
<b>Subtotal</b>	<b>24,281</b>	<b>100.0%</b>	<b>15,442</b>	<b>100.0%</b>	<b>8,501</b>	<b>100.0%</b>	<b>338</b>	<b>100.0%</b>
Don't Know/Refused/Missing	708		562		143		3	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Chronic bronchitis (question 2.2.1.D)</b>								
Yes	2,357	10.0%	1,706	11.4%	629	7.6%	22	6.7%
No	21,206	90.0%	13,279	88.6%	7,620	92.4%	307	93.3%
<b>Subtotal</b>	<b>23,563</b>	<b>100.0%</b>	<b>14,985</b>	<b>100.0%</b>	<b>8,249</b>	<b>100.0%</b>	<b>329</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,426		1,019		395		12	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>COPD (question 2.2.1.E)</b>								
Yes	730	3.0%	515	3.4%	207	2.5%	8	2.4%
No	23,215	97.0%	14,690	96.6%	8,199	97.5%	326	97.6%
<b>Subtotal</b>	<b>23,945</b>	<b>100.0%</b>	<b>15,205</b>	<b>100.0%</b>	<b>8,406</b>	<b>100.0%</b>	<b>334</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,044		799		238		7	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Emphysema, chronic bronchitis or COPD</b>								
Yes	2,804	12.1%	2,007	13.6%	770	9.4%	27	8.5%
No	20,455	87.9%	12,767	86.4%	7,387	90.6%	301	91.8%
<b>Subtotal</b>	<b>23,259</b>	<b>100.0%</b>	<b>14,774</b>	<b>100.0%</b>	<b>8,157</b>	<b>100.0%</b>	<b>328</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,730		1,230		487		13	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	



**Table A-1 (cont'd): Reported Respiratory Conditions by Reported Burn Pit Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Respiratory Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>Lung disease or condition other than asthma, emphysema, chronic bronchitis or COPD (question 2.2.1.F)</b>								
Yes	1,938	8.2%	1,303	8.7%	620	7.4%	15	4.6%
No	21,739	91.8%	13,722	91.3%	7,704	92.6%	313	95.4%
<b>Subtotal</b>	<b>23,677</b>	<b>100.0%</b>	<b>15,025</b>	<b>100.0%</b>	<b>8,324</b>	<b>100.0%</b>	<b>328</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,312		979		320		13	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Constructive bronchiolitis (CB) (question 2.2.1.G)</b>								
Yes	230	1.0%	172	1.2%	58	0.7%	0	0.0%
No	23,101	99.0%	14,607	98.8%	8,169	99.3%	325	100.0%
<b>Subtotal</b>	<b>23,331</b>	<b>100.0%</b>	<b>14,779</b>	<b>100.0%</b>	<b>8,227</b>	<b>100.0%</b>	<b>325</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,658		1,225		417		16	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>Idiopathic pulmonary fibrosis (IPF) (question 2.2.1.H)</b>								
Yes	46	0.2%	30	0.2%	16	0.2%	0	0.0%
No	23,345	99.8%	14,788	99.8%	8,229	99.8%	328	100.0%
<b>Subtotal</b>	<b>23,391</b>	<b>100.0%</b>	<b>14,818</b>	<b>100.0%</b>	<b>8,245</b>	<b>100.0%</b>	<b>328</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,598		1,186		399		13	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	
<b>At least one of the respiratory conditions described above</b>								
Yes	5,357	23.2%	3,658	24.9%	1,645	20.4%	54	17.0%
No	17,702	76.8%	11,009	75.1%	6,429	79.6%	264	83.0%
<b>Subtotal</b>	<b>23,059</b>	<b>100.0%</b>	<b>14,667</b>	<b>100.0%</b>	<b>8,074</b>	<b>100.0%</b>	<b>318</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,930		1,337		570		23	
<b>Total</b>	<b>24,989</b>		<b>16,004</b>		<b>8,644</b>		<b>341</b>	

Note: Excludes respondents who were diagnosed with a respiratory condition before or during deployment. Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F.

-For 'Not exposed' response was No to question 1.2.D.

**Table A-2: Reported Respiratory Conditions by Reported Dust Storm Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Respiratory Condition	Total		High Exposure (11-13 Days)		Moderate Exposure (5-10 Days)		Low Exposure (0-4 Days)	
	No.	%	No.	%	No.	%	No.	%
<b>Allergies to pollen, dust, or animals (question 2.2.1.A)</b>								
Yes	8,513	39.7%	2,454	42.0%	3,244	39.1%	2,815	38.7%
No	12,918	60.3%	3,394	58.0%	5,059	60.9%	4,465	61.3%
<b>Subtotal</b>	<b>21,431</b>	<b>100.0%</b>	<b>5,848</b>	<b>100.0%</b>	<b>8,303</b>	<b>100.0%</b>	<b>7,280</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,166		401		458		307	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Asthma (question 2.2.1.B)</b>								
Yes	2,341	10.8%	780	13.2%	867	10.3%	694	9.4%
No	19,339	89.2%	5,118	86.8%	7,554	89.7%	6,667	90.6%
<b>Subtotal</b>	<b>21,680</b>	<b>100.0%</b>	<b>5,898</b>	<b>100.0%</b>	<b>8,421</b>	<b>100.0%</b>	<b>7,361</b>	<b>100.0%</b>
Don't Know/Refused/Missing	917		351		340		226	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Emphysema (question 2.2.1.C)</b>								
Yes	218	1.0%	86	1.4%	85	1.0%	47	0.6%
No	21,761	99.0%	5,882	98.6%	8,451	99.0%	7,428	99.4%
<b>Subtotal</b>	<b>21,979</b>	<b>100.0%</b>	<b>5,968</b>	<b>100.0%</b>	<b>8,536</b>	<b>100.0%</b>	<b>7,475</b>	<b>100.0%</b>
Don't Know/Refused/Missing	618		281		225		112	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Chronic bronchitis (question 2.2.1.D)</b>								
Yes	2,150	10.1%	793	13.7%	805	9.7%	552	7.6%
No	19,199	89.9%	4,980	86.3%	7,486	90.3%	6,733	92.4%
<b>Subtotal</b>	<b>21,349</b>	<b>100.0%</b>	<b>5,773</b>	<b>100.0%</b>	<b>8,291</b>	<b>100.0%</b>	<b>7,285</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,248		476		470		302	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>COPD (question 2.2.1.E)</b>								
Yes	656	3.0%	242	4.1%	239	2.8%	175	2.4%
No	21,043	97.0%	5,597	95.9%	8,202	97.2%	7,244	97.6%
<b>Subtotal</b>	<b>21,699</b>	<b>100.0%</b>	<b>5,839</b>	<b>100.0%</b>	<b>8,441</b>	<b>100.0%</b>	<b>7,419</b>	<b>100.0%</b>
Don't Know/Refused/Missing	898		410		320		168	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	

**Table A-2 (cont'd): Reported Respiratory Conditions by Reported Dust Storm Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Respiratory Condition	Total		High Exposure (11-13 Days)		Moderate Exposure (5-10 Days)		Low Exposure (0-4 Days)	
	No.	%	No.	%	No.	%	No.	%
<b>Emphysema, chronic bronchitis or COPD</b>								
Yes	2,555	12.1%	929	16.4%	966	11.8%	660	9.1%
No	18,537	87.9%	4,746	83.6%	7,222	88.2%	6,569	90.9%
<b>Subtotal</b>	<b>21,092</b>	<b>100.0%</b>	<b>5,675</b>	<b>100.0%</b>	<b>8,188</b>	<b>100.0%</b>	<b>7,229</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,505		1,503		573		358	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Lung disease or condition other than asthma, emphysema, chronic bronchitis or COPD (question 2.2.1.F)</b>								
Yes	1,764	8.2%	553	9.6%	691	8.3%	520	7.1%
No	19,700	91.8%	5,219	90.4%	7,652	91.7%	6,829	92.9%
<b>Subtotal</b>	<b>21,464</b>	<b>100.0%</b>	<b>5,772</b>	<b>100.0%</b>	<b>8,343</b>	<b>100.0%</b>	<b>7,349</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,133		477		418		238	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Constructive bronchiolitis (CB) (question 2.2.1.G)</b>								
Yes	208	1.0%	79	1.4%	78	0.9%	51	0.7%
No	20,937	99.0%	5,570	98.6%	8,159	99.1%	7,208	99.3%
<b>Subtotal</b>	<b>21,145</b>	<b>100.0%</b>	<b>5,649</b>	<b>100.0%</b>	<b>8,237</b>	<b>100.0%</b>	<b>7,259</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,452		600		524		328	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	
<b>Idiopathic pulmonary fibrosis (IPF) (question 2.2.1.H)</b>								
Yes	48	0.2%	23	0.4%	15	0.2%	10	0.1%
No	21,149	99.8%	5,647	99.6%	8,235	99.8%	7,267	99.9%
<b>Subtotal</b>	<b>21,197</b>	<b>100.0%</b>	<b>5,670</b>	<b>100.0%</b>	<b>8,250</b>	<b>100.0%</b>	<b>7,277</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,400		579		511		310	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	

**Table A-2 (cont'd): Reported Respiratory Conditions by Reported Dust Storm Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Respiratory Condition	Total		High Exposure (11-13 Days)		Moderate Exposure (5-10 Days)		Low Exposure (0-4 Days)	
	No.	%	No.	%	No.	%	No.	%
<b>At least one of the respiratory conditions described above</b>								
Yes	4,855	23.2%	1,577	27.9%	1,883	23.2%	1,395	19.5%
No	16,081	76.8%	4,077	72.1%	6,250	76.8%	5,754	80.5%
<b>Subtotal</b>	<b>20,936</b>	<b>100.0%</b>	<b>5,654</b>	<b>100.0%</b>	<b>8,133</b>	<b>100.0%</b>	<b>7,149</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,661		595		628		438	
<b>Total</b>	<b>22,597</b>		<b>6,249</b>		<b>8,761</b>		<b>7,587</b>	

Note: Excludes respondents who reported a diagnosis of any respiratory condition before or during deployment and those with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).

**Table A-3: Reported Cardiovascular Conditions by Reported Burn Pit Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Cardiovascular Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>High blood pressure (question 2.2.2.A)</b>								
Yes	7,312	30.5%	5,040	32.7%	2,181	26.4%	91	28.0%
No	16,691	69.5%	10,388	67.3%	6,069	73.6%	234	72.0%
<b>Subtotal</b>	<b>24,003</b>	<b>100.0%</b>	<b>15,428</b>	<b>100.0%</b>	<b>8,250</b>	<b>100.0%</b>	<b>325</b>	<b>100.0%</b>
Don't Know/Refused/Missing	925		671		246		8	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	
<b>Coronary artery disease (question 2.2.2.B)</b>								
Yes	389	1.6%	244	1.6%	137	1.6%	8	2.4%
No	23,796	98.4%	15,290	98.4%	8,185	98.4%	321	97.6%
<b>Subtotal</b>	<b>24,185</b>	<b>100.0%</b>	<b>15,534</b>	<b>100.0%</b>	<b>8,322</b>	<b>100.0%</b>	<b>329</b>	<b>100.0%</b>
Don't Know/Refused/Missing	743		565		174		4	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	
<b>Angina pectoris (question 2.2.2.C)</b>								
Yes	250	1.1%	177	1.2%	69	0.8%	4	1.3%
No	23,321	98.9%	14,888	98.8%	8,118	99.2%	315	98.7%
<b>Subtotal</b>	<b>23,571</b>	<b>100.0%</b>	<b>15,065</b>	<b>100.0%</b>	<b>8,187</b>	<b>100.0%</b>	<b>319</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,357		1,034		309		14	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	
<b>Myocardial infarction (question 2.2.2.D)</b>								
Yes	282	1.2%	173	1.1%	100	1.2%	9	2.7%
No	24,201	98.8%	15,564	98.9%	8,317	98.8%	320	97.3%
<b>Subtotal</b>	<b>24,483</b>	<b>100.0%</b>	<b>15,737</b>	<b>100.0%</b>	<b>8,417</b>	<b>100.0%</b>	<b>329</b>	<b>100.0%</b>
Don't Know/Refused/Missing	445		362		79		4	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	
<b>Heart condition other than coronary artery disease, angina, or myocardial infarction (question 2.2.2.E)</b>								
Yes	1,274	5.3%	820	5.3%	439	5.3%	15	4.6%
No	22,814	94.7%	14,641	94.7%	7,861	94.7%	312	95.4%
<b>Subtotal</b>	<b>24,088</b>	<b>100.0%</b>	<b>15,461</b>	<b>100.0%</b>	<b>8,300</b>	<b>100.0%</b>	<b>327</b>	<b>100.0%</b>
Don't Know/Refused/Missing	840		638		196		6	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	

**Table A-3 (cont'd): Reported Cardiovascular Conditions by Reported Burn Pit Exposure Status Among Those Who Had No Diagnosis Before or During Deployment<sup>1</sup>**

Cardiovascular Condition	Total		Exposed & Involved in Burn Pit Duties		Exposed But Not Involved in Burn Pit Duties		Not Exposed	
	No.	%	No.	%	No.	%	No.	%
<b>At least one of the cardiovascular conditions described above</b>								
Yes	8,055	34.2%	5,498	36.3%	2,458	30.2%	99	30.8%
No	15,529	65.8%	9,631	63.7%	5,676	69.8%	222	69.2%
<b>Subtotal</b>	<b>23,584</b>	<b>100.0%</b>	<b>15,129</b>	<b>100.0%</b>	<b>8,134</b>	<b>100.0%</b>	<b>321</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,344		970		362		12	
<b>Total</b>	<b>24,928</b>		<b>16,099</b>		<b>8,496</b>		<b>333</b>	

Note: Excludes respondents who were diagnosed with a cardiovascular condition before or during deployment. Excludes respondents with missing data on burn pit exposure status. Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.2.D or question 1.2.F on all deployment segments.

<sup>1</sup>A combination of responses to questions 1.2.D (Were you near a burn pit during these dates?) and 1.2.F (Did your duties during these dates include a burn pit?) for any deployment segment.

-For 'Exposed & involved in burn pit duties' response was Yes to question 1.2.D and Yes to question 1.2.F.

-For 'Exposed but not involved in burn pit duties' response was Yes to question 1.2.D and No to question 1.2.F-For 'Not exposed' response was No to question 1.2.D.

**Table A-4: Reported Cardiovascular Conditions by Reported Dust Storm Exposure Status Among Those With No Diagnosis Before or During Deployment<sup>1</sup>**

Cardiovascular Condition	Total		High Exposure (11-13 Days)		Moderate Exposure (5-10 Days)		Low Exposure (0-4 Days)	
	No.	%	No.	%	No.	%	No.	%
<b>High blood pressure (question 2.2.2.A)</b>								
Yes	6,619	30.4%	2,050	34.1%	2,603	30.8%	1,966	26.8%
No	15,169	69.6%	3,953	65.9%	5,855	69.2%	5,361	73.2%
<b>Subtotal</b>	<b>21,788</b>	<b>100.0%</b>	<b>6,003</b>	<b>100.0%</b>	<b>8,458</b>	<b>100.0%</b>	<b>7,327</b>	<b>100.0%</b>
Don't Know/Refused/Missing	766		269		304		193	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	
<b>Coronary artery disease (question 2.2.2.B)</b>								
Yes	350	1.6%	111	1.9%	136	1.6%	103	1.4%
No	21,565	98.4%	5,877	98.1%	8,388	98.4%	7,300	98.6%
<b>Subtotal</b>	<b>21,915</b>	<b>100.0%</b>	<b>5,988</b>	<b>100.0%</b>	<b>8,524</b>	<b>100.0%</b>	<b>7,403</b>	<b>100.0%</b>
Don't Know/Refused/Missing	639		284		238		117	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	
<b>Angina pectoris (question 2.2.2.C)</b>								
Yes	232	1.1%	75	1.3%	87	1.0%	70	1.0%
No	21,135	98.9%	5,703	98.7%	8,235	99.0%	7,197	99.0%
<b>Subtotal</b>	<b>21,367</b>	<b>100.0%</b>	<b>5,778</b>	<b>100.0%</b>	<b>8,322</b>	<b>100.0%</b>	<b>7,267</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,187		494		440		253	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	
<b>Myocardial infarction (question 2.2.2.D)</b>								
Yes	244	1.1%	73	1.2%	97	1.1%	74	1.0%
No	21,931	98.9%	6,011	98.8%	8,543	98.9%	7,377	99.0%
<b>Subtotal</b>	<b>22,175</b>	<b>100.0%</b>	<b>6,084</b>	<b>100.0%</b>	<b>8,640</b>	<b>100.0%</b>	<b>7,451</b>	<b>100.0%</b>
Don't Know/Refused/Missing	379		188		122		69	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	
<b>Heart condition other than coronary artery disease, angina, or myocardial infarction (question 2.2.2.E)</b>								
Yes	1,171	5.4%	353	5.9%	439	5.2%	379	5.1%
No	20,668	94.6%	5,613	94.1%	8,065	94.8%	6,990	94.9%
<b>Subtotal</b>	<b>21,839</b>	<b>100.0%</b>	<b>5,966</b>	<b>100.0%</b>	<b>8,504</b>	<b>100.0%</b>	<b>7,369</b>	<b>100.0%</b>
Don't Know/Refused/Missing	715		306		258		151	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	

**Table A-4 (cont'd): Reported Cardiovascular Conditions by Reported Dust Storm Exposure Status Among Those With No Diagnosis Before or During Deployment<sup>1</sup>**

Cardiovascular Condition	Total		High Exposure (11-13 Days)		Moderate Exposure (5-10 Days)		Low Exposure (0-4 Days)	
	No.	%	No.	%	No.	%	No.	%
<b>At least one of the cardiovascular conditions described above</b>								
Yes	7,307	34.1%	2,246	38.2%	2,845	34.2%	2,216	30.7%
No	14,123	65.9%	3,640	61.8%	5,485	65.8%	4,998	69.3%
<b>Subtotal</b>	<b>21,430</b>	<b>100.0%</b>	<b>5,886</b>	<b>100.0%</b>	<b>8,330</b>	<b>100.0%</b>	<b>7,214</b>	<b>100.0%</b>
Don't Know/Refused/Missing	1,124		386		432		306	
<b>Total</b>	<b>22,554</b>		<b>6,272</b>		<b>8,762</b>		<b>7,520</b>	
<b>For those with any of the cardiovascular conditions described above, earliest time of diagnosis (check all that apply) (question 2.2.2.F)</b>								
Before deployment	0	0.0%	0	0.0%	0	0.0%	0	0.0%
During deployment	0	0.0%	0	0.0%	0	0.0%	0	0.0%
After deployment	6,826	93.4%	2,064	91.9%	2,675	94.0%	2,087	94.2%
Don't know/Refused/Missing	15,728	69.7%	4,208	67.1%	6,087	69.5%	5,433	72.2%

Note: Excludes respondents who reported a diagnosis of any cardiovascular condition before or during deployment and those with missing data on number of days exposed to dust storms (question 1.4.C). Data are considered missing if a respondent gave a don't know, refused, or missing response to question 1.4.C.

<sup>1</sup>Response provided number of days to question 1.4.C (In a typical month during your deployment(s), how many days did you experience dust storms?).



## **APPENDIX 2**

### **Airborne Hazards and Open Burn Pit Self-Assessment Questionnaire**



# Airborne Hazards And Open Burn Pit Registry Self-Assessment Questionnaire

**OMB 2900- XXXX**

**VA Form 10-10066**

**This information is collected in accordance with section 3507 of the Paperwork Reduction Act of 1995.** Accordingly, VA may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a valid OMB number. We anticipate that the time expended by all individuals who complete this questionnaire will average 40 minutes. This includes the time it will take to read instructions, gather the necessary facts and fill out the form. The results of this questionnaire will lead to improvement in the quality of service delivery by helping to shape the direction and focus of specific programs and services. Submission of this form is voluntary and failure to respond will have no impact on benefits to which you may be entitled.

# Airborne Hazards and Open Burn Pit Registry Self-Assessment Questionnaire

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**Note: items in square parenthesis, “[ ]”, and item selection number are not displayed to the user.**

# 1. Deployment History

## 1.1. Deployment Data from the VA Defense Information Repository (VADIR) and DMDC

[Note: Deployment and demographic data will be obtained from DoD data sources (VADIR) after the user’s personal identifier is authenticated and stored in the Registry database. All deployments from DoD data are displayed to the user. The user will then indicate if the deployment dates are valid or not, add missing deployments, and select which base names they were at while deployed. Guidance will be provided to facilitate direct contact with the appropriate DoD service to correct entries in the official system of record for the DoD deployment data.]

Report Section	Report Field	Note
Deployment Periods	Service	User Validates
	Begin Date	
	End Date	
	Conflict	
	Location	
GWVIS Note	Note	Indicates Operation Desert Storm and Operation Desert Shield service

## 1.2. Location Specific Deployment Exposures

*“Tell us about potential exposures while you were deployed.”*

[Note: Section 1.2 questions are asked for each deployment or deployment segment in the VADIR data]

“During **this** deployment or portion of your deployment:”

- A. [if deployment dates within 1990 – 1992, e.g. VADIR GWVIS indicator set], Were you exposed to soot, ash, smoke, or fumes from the Gulf War oil well fires?
  - 1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know
  
- B. Where did you spend **most** of your time during these dates?
 

[if deployment dates **not** within 1990 – 1992, e.g. VADIR GWVIS indicator not set:list base names, see Appendix A]

[Select from list], Other (text entry), I do not wish to answer, Don’t know

- C. If you were at more than one base, where did you spend the **second most** amount of time during these dates?

[if deployment dates **not** within 1990 – 1992, e.g. VADIR GWVIS indicator not set: list base names, see Appendix A]

[Select from list], Other (text entry), I was not at any other bases, I do not wish to answer, Don't know

- D. Were you near a burn pit during these dates (on the base or close enough to the base for you to see the smoke)?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- E. [If 'D' = yes], Who ran this burn pit (circle all that apply)?

1. U.S. forces or Contractor, 2. Coalition forces, 3. Host nation, 4. I do not wish to answer, 5. Don't know

- F. [If 'D' = yes] Did your duties during these dates include the burn pit (examples include trash burning, hauling trash to the burn pit, burn pit security, trash sorting at the burn pit)?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- G. [If 'D' = yes] On a typical day, how many hours did smoke or fumes from the burn pit enter your **work site or housing**?

1. Never, 2. Enter {1, 2, 3, ... 24} hours, 3. I do not wish to answer, 4. Don't know

- H. On a typical day, how many hours were you outside or in an open tent or shelter (for example a single wall tent with open seams or drafty "B" hut)?

1. Never, 2. Enter {1, 2, 3, ... 24} hours, 3. I do not wish to answer, 4. Don't know

- I. On a **typical day**, how many hours were you near (for example you could smell or see it) sewage ponds?

1. Never, 2. Enter {1, 2, 3, ... 24} hours, 3. I do not wish to answer, 4. Don't know

### 1.3. General Military Occupational Exposures

During **any** of your deployments:

- A. Were you ever close enough to feel the blast from an IED (improvised explosive device) or other explosive device?
  - 1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
  
- B. In a typical month, how many days were you near heavy smoke from weapons, signal smoke, markers, or other combat items?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
  
- C. In a typical month, how many days were you in convoy or other vehicle operations?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
  
- D. In a typical month, how many days did you perform refueling operations?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
  
- E. In a typical month, how many days did you perform aircraft, generator, or other large engine maintenance?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
  
- F. In a typical month, how many days did you perform construction duties?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
  
- G. In a typical month, how many days did you perform pesticide duties for your unit?
  - 1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know

### 1.4. Environmental Exposures, Regional Air Pollution

- A. Did you do anything differently during your deployment(s), when you thought or were informed air quality was bad (for example during dust storms or heavy pollution days)?
  - 1. Yes, 2. No, 3. Never thought of this, 4. I was not informed or aware of bad air quality, 5. I do not wish to answer, 6. Don't know

- B. [A=yes], What did you do differently (select all that apply)?
1. Wore a mask, cravat, or bandana over your mouth or nose
  2. Spent less time outdoors
  3. Did less strenuous activities (i.e. avoided physical training (PT))
  4. Took medication
  5. Closed windows of your sleeping quarters
  6. Spent less time in convoy
  7. Canceled outdoor activities
  8. Exercised indoors instead of outdoors
  9. Used or changed air filter/air cleaner
  10. Other
  11. I did not (or could not) do anything differently
  12. I do not wish to answer
- C. In a typical month during your deployment(s), how many days did you experience dust storms?
1. Never, 2. Enter {1, 2, 3 ... 31} days, 3. I do not wish to answer, 4. Don't know
- D. During your deployment(s), did you experience wheezing, difficulty breathing, an itchy or irritated nose, eyes or throat that you thought was the result of poor air quality?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- E. [If 'D'=yes], How many days in an average month did you experience wheezing, difficulty breathing, an itchy or irritated eyes, nose or throat that you thought was the result of poor air quality?
1. Enter {1, 2, 3 ... 31} days, 2. Never, 3. I do not wish to answer, 4. Don't know
- F. During your deployment(s), did you seek medical care for wheezing, difficulty breathing, itchy or irritated nose, eyes or throat that you thought was the result of poor air quality?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know



## 2. Symptoms and Medical History

*“Tell us your health history. Please list all conditions even if you don’t think they’re related to a deployment exposure.”*

### 2.1. Functional Limitations and Reported Cause

[Source: NHIS Adult Health Status & Limitations starting with AHS.091\_01.000]

- A. How difficult is it to run or jog one mile on a level surface?
  - 1. Not at all difficult, 2. only a little difficult, 3. somewhat difficult, 4. very difficult, 5. can’t do it at all, 6. do not do this activity, 7. I do not wish to answer, 8. Don’t know
  
- B. How difficult is it to walk on a level surface for one mile?
  - 1. Not at all difficult, 2. only a little difficult, 3. somewhat difficult, 4. very difficult, 5. can’t do it at all, 6. do not do this activity, 7. I do not wish to answer, 8. Don’t know
  
- C. How difficult is it to walk a ¼ of a mile – about 3 city blocks?
  - 1. Not at all difficult, 2. only a little difficult, 3. somewhat difficult, 4. very difficult, 5. can’t do it at all, 6. do not do this activity, 7. I do not wish to answer, 8. Don’t know
  
- D. How difficult is it to walk up a hill or incline?
  - 1. Not at all difficult, 2. only a little difficult, 3. somewhat difficult, 4. very difficult, 5. can’t do it at all, 6. do not do this activity, 7. I do not wish to answer, 8. Don’t know
  
- E. How difficult is it to walk up 10 steps or climb a flight of stairs?
  - 1. Not at all difficult, 2. only a little difficult, 3. somewhat difficult, 4. very difficult, 5. can’t do it at all, 6. do not do this activity, 7. I do not wish to answer, 8. Don’t know

[Source: NHIS: Adult Health Status & Limitations AHS.200\_00.000, selection 14 modified]

F. [If any question A-E = “difficult”] What condition or health problem causes you to have difficulty with these activities? (Check all that apply.)

- 01 Arthritis/rheumatism
- 02 Back or neck problem
- 03 Benign Tumors, Cysts
- 04 Birth defect
- 05 Brain injury (for example, Traumatic Brain Injury/TBI, Intellectual disability)
- 06 Cancer
- 07 Circulation problems (including blood clots)
- 08 Depression/anxiety/emotional problem
- 09 Diabetes
- 10 Epilepsy, seizures
- 11 Fibromyalgia, lupus
- 12 Fracture, bone/joint injury
- 13 Hearing problem
- 14 Heart problem
- 15 Hernia
- 16 Hypertension/high blood pressure
- 17 Kidney, bladder or renal problems
- 18 Knee problems (not arthritis, not joint injury)
- 19 Lung/breathing problem (for example, asthma and emphysema)
- 20 Migraine headaches (not just headaches)
- 21 Missing limbs (fingers, toes or digits), amputee
- 22 Multiple Sclerosis (MS), Muscular Dystrophy (MD)
- 23 Other developmental problem (for example, cerebral palsy)
- 24 Other injury
- 25 Other nerve damage, including carpal tunnel syndrome
- 26 Osteoporosis, tendinitis
- 27 Parkinson’s disease, other tremors
- 28 Polio(myelitis), paralysis, para/quadriplegia
- 29 Senility
- 30 Stroke problem
- 31 Thyroid problems, Grave’s disease, gout
- 32 Ulcer
- 33 Varicose veins, hemorrhoids
- 34 Vision/problem seeing
- 35 Weight problem
- 36 Other impairment/problem (Specify one)
- 37 I do not wish to answer
- 38 Don’t know/Not sure

## 2.2. Health Conditions

### 2.2.1. Respiratory Conditions

[Source: NHIS Adult Conditions ACN.031 series]

- A. Have you **ever** been told by a doctor or other health professional that you had Hay fever or allergies to pollen, dust, or animals?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[Source: NHIS Adult Conditions ACN.080\_00.000]

- B. Have you **ever** been told by a doctor or other health care professional that you had asthma?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- C. Have you **ever** been told by a doctor or other health care professional that you had emphysema?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- D. Have you **ever** been told by a doctor or other health care professional that you had chronic bronchitis?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[Source: NHIS Adult Conditions ACN.035 series]

- E. Have you **ever** been told by a doctor or other health care professional that you had chronic obstructive pulmonary disease also called COPD?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- F. Have you **ever** been told by a doctor or other health care professional that you had some lung disease or condition other than asthma, emphysema, chronic bronchitis or COPD?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- G. [if F="Yes"] Have you **ever** been told by a doctor or other health care professional that you had constrictive bronchiolitis (CB)?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- H. [if F=“Yes”] Have you **ever** been told by a doctor or other health care professional that you had pulmonary fibrosis or idiopathic pulmonary fibrosis (IPF)?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know
- I. [if B-F = yes], When you were told you had asthma, emphysema, chronic bronchitis, COPD or some other lung disease by a doctor or other health care professional, were you told before, during, or after deployment? (check all that apply.)
1. Before deployment, 2. During deployment, 3. After deployment, 4. I do not wish to answer, 5. Don’t know
- J. [if I = Before], Did this lung disease get better, worse, or about the same during deployment?
1. Better, 2. Worse, 3. About the Same, 4. Not applicable, 5. I do not wish to answer, 6. Don’t know
- K. Do you currently have any of the following symptoms? (Check all that apply.)
1. Cough for more than 3 weeks
  2. Sputum or phlegm production for more than 3 weeks
  3. Wheezing or whistling in the chest
  4. Shortness of breath; breathlessness
  5. Decreased ability to exercise
  6. Hay fever or other respiratory allergy
  7. Sore throat, hoarseness, or change in voice
  8. Chest pain, chest discomfort or chest tightness
  9. Chronic sinus infection/sinusitis
  10. I do not wish to answer
  11. I do not have these symptoms
- L. In the past 12 months did you have any of the following symptoms? (Check all that apply.)
1. Cough for more than 3 weeks
  2. Sputum or phlegm production for more than 3 weeks
  3. Wheezing or whistling in the chest
  4. Shortness of breath; breathlessness
  5. Decreased ability to exercise
  6. Hay fever or other respiratory allergy
  7. Sore throat, hoarseness, or change in voice
  8. Chest pain, chest discomfort or chest tightness
  9. Chronic sinus infection/sinusitis
  10. I do not wish to answer
  11. I do not have these symptoms

[Source: Medical Research Chronic (MRC) Breathlessness scale]

M. [IF ANSWER TO “L” Current Health symptoms = 04] How would you rate your shortness of breath or breathlessness? (Check the description/grade that applies to you.) I’m:

1. Not troubled by breathlessness except on strenuous exercise
2. Short of breath when hurrying on the level or walking up a slight hill
3. Walking slower than most people on level ground, stop after one mile, or stop after 15 minutes walking at my own pace
4. Stopping for breath after walking about 100 yards or after a few minutes on level ground
5. Too breathless to leave the house, or breathless when dressing or undressing
6. I do not wish to answer

### 2.2.2. Cardiovascular Conditions

A. Have you **ever** been told by a doctor or other health care professional that you had hypertension, also called high blood pressure?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

B. Have you **ever** been told by a doctor or other health care professional that you had coronary artery disease?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

C. Have you **ever** been told by a doctor or other health care professional that you had angina pectoris?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

D. Have you **ever** been told by a doctor or other health care professional that you had a heart attack, also called myocardial infarction?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

E. Have you **ever** been told by a doctor or other health care professional that you had a heart condition other than coronary artery disease or angina or myocardial infarction?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

- F. [if any A-E = yes], When you were told you had hypertension, coronary artery disease, angina pectoris, a heart attack, or some other heart condition by a doctor or other health care professional, were you told before, during, or after deployment? (check all that apply.)
1. Before deployment, 2. During deployment, 3. After deployment, 4. I do not wish to answer, 5. Don't know

### 2.2.3. Other Conditions

[Source NHIS ACN.125\_00.250]

- A. During the **past 12 months**, have you regularly had insomnia or trouble sleeping?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[Source modified from NHIS ACN.125\_00.130]

- B. During the **past 12 months**, have you had Neurological problems? (Some examples of neurological problems may include numbness, tingling, or weakness in your arms or legs or difficulties with thinking or memory.)
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[Source modified from NHIS ACN.125\_00.100]

- C. During the **past 12 months**, have you had problems of the immune system?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[Source NHIS ACN.201\_05.000]

- D. During the **past 12 months**, have you been told by a doctor or other health professional that you had any kind of liver condition?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- E. During the **past 12 months**, have you been told by a doctor or other health professional that you had any a chronic multi-symptom illness (examples include irritable bowel syndrome, chronic fatigue syndrome, and fibromyalgia)?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

F. [if B-E = yes], Did your, neurological or immune problems, chronic multi-symptom illness, or liver condition **first** occur before, during, or after deployment? (check all that apply.)

1. Before deployment, 2. During deployment, 3. After deployment, 4. I do not wish to answer, Don't know

G. On average, how many hours of sleep do you get in a 24-hour period? (Round up 30 minutes or more to the next whole hour.)

1 Enter {1,2,3 ... 24} hours

2 I do not wish to answer

3 Don't know

“Questions H and I are about snoring and breathing during sleep. To answer these questions, please consider both what others have told you **and** what you know about yourself.”

H. How often do you snore?

1 Never

2 Rarely - less than one night a week

3 Sometimes - 1 or 2 nights a week

4 Frequently - 3 to 5 nights a week

5 Always or almost always - 6 or 7 nights a week

6 I do not wish to answer

7 Don't know

I. How often do you have times when you stop breathing during your sleep?

1 Never

2 Rarely - less than one night a week

3 Sometimes - 1 or 2 nights a week

4 Frequently - 3 to 5 nights a week

5 Always or almost always - 6 or 7 nights a week

6 I do not wish to answer

7 Don't know

### 2.3. Height and Weight

A. How tall are you without shoes?

1 Enter (x feet, y inches), 2 I do not wish to answer, 3 Don't know

B. How much do you weigh without shoes?

1 Enter X pounds, 2 I do not wish to answer, 3 Don't know

## 2.4. Cancer History

[Source NHIS ACN.130\_00.000]

A. Have you **ever** been told by a doctor or other health professional that you had Cancer or a malignancy (tumor) of any kind?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[if 'A' <> "Yes" skip to section 2.5]

B. What kind of cancer was it?

- 01 Bladder
- 02 Blood
- 03 Bone
- 04 Brain
- 05 Breast
- 06 Cervix
- 07 Colon
- 08 Esophagus
- 09 Gallbladder
- 10 Kidney
- 11 Larynx-windpipe
- 12 Leukemia
- 13 Liver
- 14 Lung
- 15 Lymphoma
- 16 Melanoma
- 17 Mouth/tongue/lip
- 18 Ovary
- 19 Pancreas
- 20 Prostate
- 21 Rectum
- 22 Skin (non-melanoma)
- 23 Skin (Don't Know what kind)
- 24 Soft tissue (muscle or fat)
- 25 Stomach
- 26 Testis
- 27 Throat - pharynx
- 28 Thyroid
- 29 Uterus



- 30 Other
- 31 None
- 32 I do not wish to answer
- 33 Don't know

C. [if 'B' < 30] How old were you when this cancer was first diagnosed?

- 1. Enter {00-99} Years
- 2. I do not wish to answer, 3. Don't know

D. [if 'B' < 30] If you were diagnosed with a second cancer, what kind of cancer was it?

- 01 Bladder
- 02 Blood
- 03 Bone
- 04 Brain
- 05 Breast
- 06 Cervix
- 07 Colon
- 08 Esophagus
- 09 Gallbladder
- 10 Kidney
- 11 Larynx-windpipe
- 12 Leukemia
- 13 Liver
- 14 Lung
- 15 Lymphoma
- 16 Melanoma
- 17 Mouth/tongue/lip
- 18 Ovary
- 19 Pancreas
- 20 Prostate
- 21 Rectum
- 22 Skin (non-melanoma)
- 23 Skin (Don't Know what kind)
- 24 Soft tissue (muscle or fat)
- 25 Stomach
- 26 Testis
- 27 Throat - pharynx
- 28 Thyroid
- 29 Uterus
- 30 Other
- 31 None
- 32 I do not wish to answer
- 33 Don't know

- E. [if 'D' < 30] How old were you when this cancer was first diagnosed?
1. Enter {00-99} Years
  2. I do not wish to answer, 3. Don't know
- F. [if 'D' < 30] If you were diagnosed with a third cancer, what kind of cancer was it?
- 01 Bladder
  - 02 Blood
  - 03 Bone
  - 04 Brain
  - 05 Breast
  - 06 Cervix
  - 07 Colon
  - 08 Esophagus
  - 09 Gallbladder
  - 10 Kidney
  - 11 Larynx-windpipe
  - 12 Leukemia
  - 13 Liver
  - 14 Lung
  - 15 Lymphoma
  - 16 Melanoma
  - 17 Mouth/tongue/lip
  - 18 Ovary
  - 19 Pancreas
  - 20 Prostate
  - 21 Rectum
  - 22 Skin (non-melanoma)
  - 23 Skin (Don't Know what kind)
  - 24 Soft tissue (muscle or fat)
  - 25 Stomach
  - 26 Testis
  - 27 Throat - pharynx
  - 28 Thyroid
  - 29 Uterus
  - 30 Other
  - 32 I do not wish to answer
  - 33 Don't know
- G. [if 'F' < 30] How old were you when this cancer was first diagnosed?
1. Enter {00-99} Years
  2. I do not wish to answer, 3. Don't know

## 2.5. Tobacco Exposure

[Source: NHIS Adult Health Behaviors: AHB.010\_00.000]

A. Have you smoked at least 100 cigarettes in your entire life?

1. Yes
2. No
3. I do not wish to answer
4. Don't know

[if A=Yes continue to 'B' else skip to 'F']

B. How old were you when you first started to smoke fairly regularly?

1. Enter X (age in years),
2. Never smoked regularly
3. I do not wish to answer
4. Don't know

[if B=age continue to 'C' else skip to 'F']

C. Do you now smoke cigarettes every day, some days or not at all?

1. Every day
2. Some days
3. Not at all
4. I do not wish to answer
5. Don't know

D. [if 'C'=not at all], How long has it been since you quit smoking cigarettes?

1. Enter {00-99} (Years since quit)
2. I do not wish to answer
3. Don't know

E. [if 'C'=some days or every day], On the average, how many cigarettes do you now smoke a day?

1. Enter {00-99} (Number of cigarettes per day)
2. I do not wish to answer
3. Don't know

- F. Have you ever smoked tobacco products other than cigarettes even one time? (Such as cigars, pipes, water pipes or hookahs, small cigars that look like cigarettes, bidis, cigarillos, marijuana?)
1. Yes
  2. No
  3. I do not wish to answer
  4. Don't know

[if F=Yes continue to 'G' else skip to 'H']

- G. Do you now smoke tobacco products other than cigarettes every day, some days, rarely, or not at all?
1. Every day
  2. Some days
  3. Rarely
  4. Not at all
  5. I do not wish to answer
  6. Don't know

- H. Have you ever used smokeless tobacco products even one time? (Such as chewing tobacco, snuff, dip, snus, or dissolvable tobacco.)
1. Yes
  2. No
  3. I do not wish to answer
  4. Don't know

[if H=Yes continue to 'I' else skip to 'J']

- I. Do you **now** use smokeless tobacco products every day, some days, rarely, or not at all?
1. Every day
  2. Some days
  3. Rarely
  4. Not at all
  5. I do not wish to answer
  6. Don't know

- J. Are you exposed to second-hand smoke or environmental tobacco smoke every day, some days, rarely, or not at all?
1. Every day
  2. Some days
  3. Rarely
  4. Not at all
  5. I do not wish to answer
  6. Don't know

## 2.6. Deployment Smoking History

[Source: modified from DoD USAPHC DARE H2-5c]

- A. [if 2.5.A = yes], Did you start smoking for the first time while being deployed?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know
- B. [if 2.6.A = No], How did deployment(s) change how much you smoked?
1. No change, 2. I smoked more while deployed, 3. I smoked less while deployed, 4. I do not wish to answer, 5. Don't know

## 2.7. 12 Month Alcohol Use

- A. In the PAST YEAR, how often did you ever drink any type of alcoholic beverage (Included are liquor such as whiskey or gin, beer, wine, wine coolers, and any other type of alcoholic beverage)? "On average, how many days per week did you drink?"
1. Never, 2. Less than one, 3. 1-7 days per week, 4. I do not wish to answer, 5. Don't know

## 3. Health Concerns

*"Help us focus our efforts on health issues you care about."*

- A. Compared to pre-deployment, would you say your overall health is better, worse, or about the same?
1. Better, 2. Worse, 3. About the same, 4. I do not wish to answer, 5. Don't know
- B. During your deployment(s), do you believe you were sick because of something you breathed?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- C. Do you **currently** have a sickness or condition you think began or got worse because of something you breathed during deployment(s)?
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- D. [If 'C'=yes], When did the problem start?
1. Before deployment
  2. During Deployment
  3. 6 months or less after deployment
  4. More than 6 months later after deployment
  5. Not sure
  6. I do not wish to answer

- E. Please rate your concern that something you breathed during deployment **has already affected** your health.
1. Not at all concerned, 2. a little concerned, 3. very concerned, 4. I do not wish to answer

[If 'E'=very or little concerned continue to F, else skip to H]

- F. Please identify your biggest health concern that something you breathed during deployment **has already affected** your health.
1. Lung/Respiratory/Breathing problem
  2. Heart problem
  3. Skin problem
  4. Eye problem
  5. Gastrointestinal (GI) problem
  6. Neurological problem
  7. Immune problem
  8. Effect on children or ability to have children
  9. Cancer
  10. Other problem
  11. I do not wish to answer

- G. Have you discussed this concern with your health care provider, medical professional or team?
1. Yes, 2. No, 3. Not yet but I would like to talk with a medical professional

- H. Are you concerned that **in the future** that your health will be affected by something you breathed during deployment(s)
1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- I. [If 'H'=yes], Please rate your concern that something you breathed during deployment will affect your **future health**.
1. Not at all concerned, 2. a little concerned, 3. very concerned, 4. I do not wish to answer
- J. [If 'I'=very or little concerned], Please identify your biggest health concern that something you breathed during deployment will affect your **future health**.
1. Lung/Respiratory/Breathing
  2. Heart
  3. Skin
  4. Eyes
  5. Effect on children or ability to have children
  6. Cancer
  7. Other
  8. I do not wish to answer
- K. [If 'E' or 'I'=very or little concerned], Which exposure do you think has the **biggest** overall effect on your health?
1. **Off** base air pollution during deployment (factories, cars, burning trash, dust)
  2. **On** base air pollution during deployment (burning fuel, burn pits)
  3. Hobbies and non-military jobs
  4. Military jobs while I'm not deployed
  5. Smoking (by you or those near you)
  6. I do not wish to answer
  7. Don't know

## 4. Places You've Lived

*“Poor air quality in places where you've lived may impact how deployment exposures affect you.”*

[System displays current address]

A. What is your current address (complete here if not shown above [from VADIR and VA BIRLS sources], if correct skip to “5”)? Please include the city, state, zip code, and country.

1. Country \_\_\_\_\_

[If country <> “USA” then skip to 5]

2. City Name \_\_\_\_\_

3. State \_\_\_\_\_ (two letter code)

4. Zip code (if known): \_\_\_\_\_ (5 digit number)

5. How many years have you lived at your current address (listed above)? \_\_\_\_\_ years

6. Do you live nine or more months of the year at the address listed above? Yes, No

7. If not, indicate the other residence.

a. Other city name \_\_\_\_\_

b. Other state \_\_\_\_\_ (two letter code)

c. Other zip code (if known): \_\_\_\_\_ (5 digit number)

d. Other country \_\_\_\_\_



B. Where have you lived the longest? Please include the city, state, zip code, and country.

1. The address where I lived the longest is the same as my current address.

Yes \_\_ (if yes go to next question), No

2. Country \_\_\_\_\_

[If country <> "USA" then skip to 6]

3. City Name \_\_\_\_\_

4. State \_\_\_\_\_ (two letter code)

5. Zip code (if known): \_\_\_\_\_ (5 digit number)

6. Indicate the approximate year you moved to this address: \_\_\_\_\_

7. Indicate the approximate year you moved out of this address: \_\_\_\_\_

C. Please provide the address where you lived the longest before age 13. Please include the city, state, zip code, and country.

1. Country \_\_\_\_\_

[If country <> "USA" then skip to 5]

2. City Name \_\_\_\_\_

3. State \_\_\_\_\_ (two letter code)

4. Zip code (if known): \_\_\_\_\_ (5 digit number)

5. Indicate the approximate age you moved to this address. \_\_\_\_\_ years (Enter "0" if you lived there before age 1)

6. Indicate the approximate age you moved out of this address: \_\_\_\_\_ years

## 5. Work History

*“Exposures in your non-military jobs may impact how deployment exposures affect you.”*

### 5.1. Current Occupational Status

- A. Which of the following were you doing last week?
- 1 Working for pay at a job or business
  - 2 With a job or business but not at work (e.g. a volunteer)
  - 3 Looking for work
  - 4 Working, but not for pay, at a family-owned job or business
  - 5 Not working at a job or business and not looking for work
  - 6 I do not wish to answer
  - 7 Don't know
- B. [if A=3 or 5] What is the main reason you did not [3 or 5 text: work last week/have a job or business last week]?
- 1 Taking care of house or family
  - 2 Going to school
  - 3 Retired
  - 4 On a planned vacation from work
  - 5 On family or maternity leave
  - 6 Temporarily unable to work for health reasons
  - 7 Have job/contract and off-season
  - 8 On layoff/laid-off from a job
  - 9 Disabled
  - 10 Other
  - 11 I do not wish to answer
  - 12 Don't know

## 5.2. Main Occupation

- A. Select the occupational category that best describes your main occupation (the civilian job you've held the longest). **Do not include your occupation during military service.** If your occupation is not included, select "other occupation":

1. Agricultural and fishing/hunting workers	2. Automotive, aircraft and marine mechanics and service technicians	3. Construction trade workers, helpers and other construction related workers
4. Driver/sales workers and truck drivers	5. Extraction workers (e.g. mining or drilling)	6. Firefighters
7. Food processing	8. Forest conservation and logging workers	9. Police and sheriff's patrol officers
10. Welding, soldering and brazing	11. Other occupation [text entry]	12. I do not wish to answer

- B. Total years in this non-military job {0...99} years (enter 0 if less than one year).  
 1. Enter {00-99} years  
 2. I do not wish to answer, 3. Don't know

## 5.3. Dust Exposures

- A. Have you ever worked for a year or more in any dusty job **outside the military**?  
 1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[if A = yes, continue, else jump to 5.4]

- B. For the job with the biggest dust exposure:  
 1. Select the occupational category that best describes the job with the longest dust exposure. If your occupation is not included, select "other occupation":

1. Agricultural and fishing/hunting workers	2. Automotive, aircraft and marine mechanics and service technicians	3. Construction trade workers, helpers and other construction related workers
4. Driver/sales workers and truck drivers	5. Extraction workers (e.g. mining or drilling)	6. Firefighters
7. Food processing	8. Forest conservation and logging workers	9. Police and sheriff's patrol officers
10. Welding, soldering and brazing	11. Other occupation [text entry]	12. I do not wish to answer

2. In this job, what were the most common kinds of dust to which you were exposed (select all that apply)?

1. Animal dander	2. Wood or sawdust	3. Metal (aluminum, copper, iron, steel, or other types)
4. Cotton, wool, or other cloth or textile	5. Asbestos	6. Plaster
7. Flour	8. Cement	9. Sand or silica
10. Grain	11. Coal	12. Talc
13. Hay	14. Fiberglass	15. Lime
16. Paper or cardboard	17. Granite or other rock	18. Plastic or rubber
19. Soil or dirt	20. Other dust [text entry]	21. I do not wish to answer

3. Total years in this job {0...99} years (enter 0 if less than one year).  
 1. Enter {00-99} years  
 2. I do not wish to answer, 3. Don't know
4. Are you working in this dusty job now?  
 1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

#### 5.4. Gas, Smoke, Vapors or Fumes Exposures

- A. Have you ever been exposed to gas, smoke, chemical vapors or fumes in your work **outside the military**?  
 1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[if A = yes, continue, else jump to 5.5]

## B. For the job with the biggest gas, smoke, vapor or fume exposure:

1. Select the occupational category that best describes the job with the longest gas, smoke, chemical vapor, or fume exposures. If your occupation is not included, select “other occupation”:

1. Agricultural and fishing/hunting workers	2. Automotive, aircraft and marine mechanics and service technicians	3. Construction trade workers, helpers and other construction related workers
4. Driver/sales workers and truck drivers	5. Extraction workers (e.g. mining or drilling)	6. Firefighters
7. Food processing	8. Forest conservation and logging workers	9. Police and sheriff’s patrol officers
10. Welding, soldering and brazing	11. Other occupation [text entry]	12. I do not wish to answer

2. In this job, what were the most common kinds of gas, smoke, or chemical vapors or fumes to which you were exposed (select all that apply)?

1. Cutting oils or mists	2. Exhaust: primarily diesel engine	3. Exhaust: primarily gasoline engine
4. Exhaust: both diesel and gasoline engine	5. Exhaust: primarily another kind	6. Fumes from chemicals
7. Gasoline or other fuel fumes	8. Paint or lacquers	9. Pesticides or insecticides
10. Smoke from burning buildings, fuel oil, refuse, or wood	11. Solvents	12. Welding
13. Other gas, smoke, or chemical vapor or fume (indicate kind)_____	14. I do not wish to answer	15. Don’t know

3. Total years in this job {0...99} years (enter 0 if less than one year).

1. Enter {00-99} years
2. I do not wish to answer, 3. Don’t know

4. Are you working in this job with gas, smoke, or chemical vapors or fumes now?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don’t know

## 5.5. Asbestos Exposure

A. Have you ever worked in a job with asbestos exposure, including military service?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

[if A = yes, continue, else jump to 5.6]

B. Circle the type(s) of asbestos exposure that describe(s) how you were exposed to.

1. I did not handle asbestos directly, but asbestos was present on overhead pipes or ceilings, flooring, brakes, or other materials.
2. I did not handle asbestos directly, but I worked in area where asbestos dust was created by others.
3. I handled asbestos or asbestos containing products directly and created asbestos dust.
4. I do not wish to answer
5. Don't know

C. How many years did you work in a job with asbestos exposure (enter 0 if less than one year)?

1. Enter {00-99} years
2. I do not wish to answer, 3. Don't know

D. Are you working in a job with asbestos exposure now?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

## 6. Home Environment and Hobbies

*“Exposures in your home environment or hobbies may impact how deployment exposures affect you.”*

A. Are there any traditional farm animals that live on your land or that you visit on a regular basis?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

B. Have you ever removed mold in your home because of its effect on your health?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

C. Have you ever lived in a home that had elevated radon levels?

1. Yes, 2. No, 3. I do not wish to answer, 4. Don't know

- D. Please select from the list below any hobbies you participate in.  
[Source: DoD USAPHC DARE questionnaire, page 14, section G].

1. Woodworking, including sanding	2. Welding, brazing or soldering	3. Metal working, including machining, grinding
4. Stained glass work	5. Hobbies utilizing epoxy resin adhesives	6. Pottery work, including glazing
7. Indoor swimming and/or indoor ice-skating	8. None	9. I do not wish to answer,

- E. [if item selected in 'D'] How many total hours a week, on average, do you participate in all the above hobbies combined?
1. Enter: 1,2, 3, 4, 5, 6, 7, 8, 9, 10 or more, 2. I do not wish to answer,
  3. Don't know

## 7. Health Care Utilization

[Source NHIS: Adult Access to Health Care & Utilization, AAU.305\_00.000]

- A. About how long has it been since you last saw or talked to a doctor or other health care professional about your own health? Include doctors seen while a patient in a hospital.
1. Never
  2. 6 months or less
  3. More than 6 months, but not more than 1 yr. ago
  4. At least 1 year, but not more than 2 yrs. ago
  5. At least 2 years, but not more than 5 yrs. ago
  6. At least 5 years ago
  7. I do not wish to answer
  8. Don't know
- B. Do you wish to see a DoD or VA health care provider to discuss your health concerns related to airborne hazards during deployment?
1. Yes, 2. No, 3. Don't know

## 8. Contact Preferences

*“Help us communicate in ways that are most effective. VA will review these responses to determine the best ways to conduct outreach.”*

- A. How do you prefer to receive updated information on burn pits and other airborne exposures?
  - 1. Email from VA
  - 2. VA Web site
  - 3. Through my health care provider
  - 4. VA social media (e.g. Twitter, Facebook)
  - 5. Letter/U.S. Mail
  - 6. Through the Department of Defense
  - 7. Through a Veterans Service Organization
  - 8. I do not wish to receive any updated information
  
- B. Do you use the Internet?
  - 1. Yes
  - 2. No
  - 3. I do not wish to answer
  - 4. Don't know
  
- C. Do you send or receive emails?
  - 1. Yes
  - 2. No
  - 3. I do not wish to answer
  - 4. Don't know