



May 2015

# DEFENSE HEALTH CARE

## DOD Needs to Clarify Policies Related to Occupational and Environmental Health Surveillance and Monitor Risk Mitigation Activities

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## DEFENSE HEALTH CARE

### DOD Needs to Clarify Policies Related to Occupational and Environmental Health Surveillance and Monitor Risk Mitigation Activities

#### Why GAO Did This Study

OEHS is the regular collection and reporting of occupational and environmental health hazard data that can be used to help prevent, treat, or control disease or injury. In 2005, GAO reported that DOD needed to make improvements with OEHS during deployments to address immediate and long-term health issues.

GAO was asked to assess DOD's current OEHS efforts. This report examines (1) the extent to which the military services centrally store OEHS data and verify its reliability; (2) how, if at all, DOD identifies potential occupational and environmental health risks for sites in Iraq and Afghanistan, and to what extent these risks are mitigated; and (3) the extent to which DOD and VA use OEHS data to address post-deployment health conditions. GAO reviewed and analyzed DOD and military service policies on OEHS data storage and quality assurance, as well as policies related to conducting and monitoring assessments for deployment sites. GAO also interviewed DOD, military service, and VA officials, as well as groups representing servicemembers and veterans.

#### What GAO Recommends

GAO recommends that DOD clarify its policies for the storage and quality assurance of OEHS data, and require other related policies to be amended accordingly. GAO also recommends that CENTCOM revise its policy to require adequate documentation and consistent monitoring of deployment risk mitigation activities. In commenting on the report, DOD concurred with GAO's recommendations, and VA generally agreed with the conclusions.

View [GAO-15-487](#). For more information, contact Debra A. Draper at (202) 512-7114 or [draperd@gao.gov](mailto:draperd@gao.gov).

#### What GAO Found

Inconsistencies between Department of Defense (DOD) and military service-specific policies regarding occupational and environmental health surveillance (OEHS) data storage have contributed to fragmentation and duplication of OEHS data between two information technology systems—the Military Exposure Surveillance Library (MESL) and the Defense Occupational and Environmental Health Readiness System (DOEHRS). Not having consistent policies for which system should be used to store OEHS data is contrary to federal standards for internal control. As a result, officials' efforts to store these data have resulted in both fragmentation and duplication, which GAO's prior work has shown may result in inefficiencies. Correspondingly, in some cases, similar types of unclassified OEHS data are being submitted to both MESL and DOEHRS, and in other cases, identical OEHS data are being submitted to both systems. However, neither system serves as a central repository for these data, and as a result, it is difficult to identify complete and comprehensive OEHS data sets, which may lead to problems when officials attempt to use these data in the future. Additionally, DOD's policy for OEHS data does not specifically address quality assurance. Consequently, some of the military services have developed their own guidance, resulting in inconsistent approaches and levels of effort, which has reduced DOD's ability to be confident that the data are sufficiently reliable. Federal standards for internal control state that management should continually monitor information captured and maintained for several factors, including reliability.

The military services use site assessments to identify and address potential occupational and environmental health risks at a deployment site. These assessments may include recommended countermeasures, such as the use of personal protective equipment. However, the extent to which these recommendations are being implemented is unclear because U.S. Central Command (CENTCOM)—the combatant command responsible for military operations in the geographic area that includes Iraq and Afghanistan—does not require base commanders to document their decisions on implementing them. Officials also said they are not monitoring these recommendations, and instead rely on others to elevate concerns, as necessary. In contrast, DOD's policy for its safety and occupational health program requires the department's components, including the combatant commands, to ensure that risk management decisions are documented and reevaluated. Federal standards for internal control also note that appropriate documentation is a key internal control activity and that agencies should monitor their activities for managing identified risks.

Both DOD and the Department of Veterans Affairs (VA) have used OEHS data to a limited extent to address post-deployment health conditions. For example, DOD officials said that the primary limitation with OEHS data collected during deployments continues to be the inability to capture exposure data at the individual servicemember level, although a method to do so is currently being explored. Additionally, DOD and VA use OEHS data to conduct research that may help determine service connections for post-deployment health conditions, but it has been difficult for researchers to establish a causal link between exposures and specific health conditions.

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## Abbreviations

|          |                                                                   |
|----------|-------------------------------------------------------------------|
| CENTCOM  | U.S. Central Command                                              |
| DHWG     | Deployment Health Working Group                                   |
| DOD      | Department of Defense                                             |
| DOEHRS   | Defense Occupational and Environmental Health<br>Readiness System |
| ILER     | individual longitudinal exposure record                           |
| IT       | information technology                                            |
| MESL     | Military Exposure Surveillance Library                            |
| OEHS     | occupational and environmental health surveillance                |
| OEHSA    | Occupational and Environmental Health Site<br>Assessment          |
| POEMS    | Periodic Occupational and Environmental<br>Monitoring Summaries   |
| USARCENT | U.S. Army Central                                                 |
| VA       | Department of Veterans Affairs                                    |
| VBA      | Veterans Benefits Administration                                  |
| VHA      | Veterans Health Administration                                    |

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May 22, 2015

The Honorable Mike Coffman  
Chairman  
The Honorable Ann McLane Kuster  
Ranking Member  
Subcommittee on Oversight and Investigations  
Committee on Veterans' Affairs  
House of Representatives

The Honorable Ann Kirkpatrick  
House of Representatives

Since the end of the 1991 Persian Gulf War, servicemembers' and veterans' reports of unexplained illnesses that they attributed to service-related occupational and environmental exposures have led to increasing interest in health effects related to military deployments. In 1997, the Department of Defense (DOD) developed a military-wide health surveillance framework that includes occupational and environmental health surveillance (OEHS)—the regular collection and reporting of occupational and environmental health hazard data by the military services during deployments that can be used to help prevent, treat, or control disease or injury. Despite this effort, attempts to research and investigate whether post-deployment health conditions are the result of military service continue to be hindered by a lack of sufficient OEHS data. This is of particular concern because, as we previously reported in 2010, some returning servicemembers and veterans have health concerns they believe are related to their deployment, such as conditions related to smoke inhalation from open-air burn pits—used for waste disposal—on military bases in Iraq and Afghanistan.<sup>1</sup> In an effort to better ascertain and monitor the possible health effects related to burn pits, the Department of Veterans Affairs (VA) established the Airborne Hazards and Open Burn

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<sup>1</sup>See GAO, *Afghanistan and Iraq: DOD Should Improve Its Adherence to Its Guidance on Open Pit Burning and Solid Waste Management*, [GAO-11-63](#) (Washington, D.C.: Oct. 15, 2010).

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Pit Registry in June 2014 that allows eligible servicemembers and veterans to document their exposures and report their health concerns.<sup>2</sup>

Establishing a service connection for health conditions is important because federal law generally entitles veterans with service-connected disabilities to VA's disability compensation benefits.<sup>3</sup> However, as we have previously reported, establishing a relationship between occupational and environmental exposures and health issues can be difficult.<sup>4</sup> For example, despite servicemembers' and veterans' reports of health concerns related to smoke inhalation from burn pits in Iraq and Afghanistan, the Institute of Medicine was unable to determine whether long-term health effects are likely to result from this exposure due to limited or inadequate evidence of an association.<sup>5</sup> In light of such difficulties, Congress has, on several occasions, legislated "presumptive service connections," which allow veterans to receive compensation for certain conditions without having to prove cause.<sup>6</sup> For example, for Gulf War veterans, certain illnesses with unexplained symptoms, such as chronic fatigue syndrome and fibromyalgia, are considered presumptive service-connected conditions that qualify them for disability compensation from VA.

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<sup>2</sup>Eligible individuals include servicemembers or veterans that served in the Southwest Asia theater of operations, including Iraq and Afghanistan, on or after August 2, 1990. VA created the open burn pit registry in response to the *Dignified Burial and Other Veterans' Benefits Improvement Act of 2012*, Pub. L. No. 112-260, Tit. II, § 201, 126 Stat. 2417, 2422 (Jan. 10, 2013).

<sup>3</sup>38 U.S.C. §§ 1110 and 1131. Service-connected disability status does not include disabilities caused by a veteran's own "willful misconduct or abuse of alcohol or drugs."

<sup>4</sup>See GAO, *Defense Infrastructure: DOD Can Improve Its Response to Environmental Exposures on Military Installations*, [GAO-12-412](#) (Washington, D.C.: May 1, 2012).

<sup>5</sup>See Institute of Medicine for the Department of Veterans' Affairs. *Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan*. Washington, D.C.: The National Academies Press, 2011.

<sup>6</sup>A presumptive service connection relieves veterans of the burden to prove that a disability or illness was caused by a specific exposure that occurred during service in the Armed Forces, and instead shifts the burden of proof concerning whether a disease or disability was caused or aggravated due to service from the veteran to the VA.

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In 2005, we reported that improvements were needed with OEHS during deployments to address immediate and long-term health issues.<sup>7</sup> Specifically, we recommended that DOD improve deployment OEHS data collection and reporting, including the development of cross-service guidance to facilitate more consistent implementation of OEHS policy.<sup>8</sup> Additionally, we recommended that DOD establish and implement procedures to evaluate the effectiveness of risk management efforts, and that DOD and VA work together to develop a federal research plan to address the long-term health effects of these deployments. DOD developed cross-service guidance in 2007, but did not implement the other recommendations, although it partially concurred with them. Since our July 2005 report, there have been about 2.1 million servicemember deployments to Iraq and Afghanistan, involving about 1.4 million individual servicemembers, as of December 31, 2014.<sup>9</sup>

You requested that we assess the departments' current OEHS efforts in light of continuing health concerns related to recent deployments to Iraq and Afghanistan. In this report, we examine (1) to what extent the military services centrally store OEHS data and verify their reliability; (2) how, if at all, DOD identifies potential occupational and environmental health risks for sites in Iraq and Afghanistan, and to what extent these risks are mitigated; and (3) to what extent DOD and VA use OEHS data to address post-deployment health conditions.

To determine the extent to which the military services centrally store OEHS data and verify their reliability, we reviewed and analyzed DOD and service-specific policies that describe OEHS data storage and quality

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<sup>7</sup>See GAO, *Defense Health Care: Improvements Needed in Occupational and Environmental Health Surveillance during Deployments to Address Immediate and Long-term Health Issues*, [GAO-05-632](#) (Washington, D.C.: July 14, 2005) and *Defense Health Care: Occupational and Environmental Health Surveillance Conducted during Deployments Need Improvement*, [GAO-05-903T](#) (Washington, D.C.: July 19, 2005).

<sup>8</sup>Risk management activities included health risk assessments that described and measured the potential hazards at a site, and risk mitigation activities intended to reduce potential exposure and to make servicemembers aware of the possible health risks of potential exposures.

<sup>9</sup>Of these approximately 1.4 million individual servicemembers, about 470,000 were deployed more than once—potentially multiple times—to Iraq and Afghanistan during this time period.

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assurance processes.<sup>10</sup> We also obtained information on the functionalities and capabilities of the two information technology (IT) systems that DOD uses to store OEHS data: the Military Exposure Surveillance Library (MESL) and the Defense Occupational and Environmental Health Readiness System (DOEHRS). We reviewed the numbers and types of OEHS data entries in each system to better understand how OEHS data are being stored. We also interviewed DOD and military service officials about their practices for storing and reviewing OEHS data. Finally, for our evaluation, we used criteria from our prior work on duplication, overlap, and fragmentation, and the federal standards for internal control, including standards for risk assessment and control activities to promote efficiency and effectiveness.<sup>11</sup>

To determine how, if at all, DOD identifies potential occupational and environmental health risks for sites in Iraq and Afghanistan, and the extent to which these risks are mitigated, we reviewed and analyzed relevant DOD and military services' policies on risk assessment activities for deployed locations, and how they are monitored. We also analyzed a sample of 50 risk assessments for deployment sites in Iraq and Afghanistan completed after November 2, 2007—the publication date of the cross-service guide on deployment health surveillance in which a uniform standard for assessing risks was established—to determine the extent to which this sample of risk assessments contained recommendations for mitigating servicemembers' risks of exposure to occupational and environmental health hazards. However, because of the small sample size, which was not randomly selected, the results of this analysis cannot be generalized to all risk assessments. We interviewed DOD and military service officials about how they use risk assessments to mitigate potential health risks at deployment sites, and the extent to which recommended risk mitigation activities are being monitored. In addition, we interviewed officials from the U.S. Environmental Protection Agency

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<sup>10</sup>In total, we reviewed 64 DOD and military service policies to determine which policies described how OEHS data should be stored, or how quality assurance should be performed on these data. We also confirmed with officials that these policies were still current. We found that 14 of those policies described the storage of OEHS data and 4 policies described quality assurance. For the purposes of this report, "policies" include directives, instructions, technical guides, and memoranda.

<sup>11</sup>See GAO, *2015 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits*, [GAO-15-404SP](#) (Washington, D.C.: April 14, 2015), and *Standards for Internal Control in the Federal Government*, [GAO/AMD-00-21.3.1](#) (Washington, D.C.: November 1999).

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and National Institute of Occupational Safety and Health with expertise in occupational and environmental health risks to obtain their insights regarding the extent to which OEHS data may be used to mitigate risks. For our evaluation, we also used as criteria the federal standards for internal control to evaluate risk assessment, such as identifying risks and analyzing their potential effects.<sup>12</sup>

To determine the extent to which DOD and VA use OEHS data to address post-deployment health conditions, we reviewed relevant DOD and VA documentation about the use of OEHS data. We also interviewed DOD officials and officials with the Veterans Benefits Administration (VBA) and the Veterans Health Administration (VHA) to identify the ways in which OEHS data is being used, including its use in research and in determining benefits eligibility, as well as limitations with the use of these data.<sup>13</sup> In addition, we interviewed the co-chairs of the Deployment Health Working Group (DHWG), a collaborative DOD and VA group, to determine how the departments collaborate in using OEHS data to address deployment-health-related issues. Furthermore, we interviewed officials from the Military Officers Association of America and Disabled American Veterans to obtain their perspectives on how DOD and VA have used OEHS data to address post-deployment health conditions.

We conducted this performance audit from August 2014 to May 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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<sup>12</sup>See [GAO/AIMD-00-21.3.1](#).

<sup>13</sup>VBA is charged with processing claims for veterans with service-connected disabilities for disability compensation benefits. VHA operates VA's health care system, which includes VA medical centers and community-based outpatient clinics.

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## Background

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### Relevant DOD Organizational Structure

Within DOD's Office of the Assistant Secretary of Defense for Health Affairs, the office of Force Health Protection & Readiness provides support for all medically related DOD policies, programs, and activities. This includes responsibility for the development of most deployment-related health policies, including those related to OEHS.<sup>14</sup>

To perform its military missions around the world, DOD operates geographic combatant commands that conduct activities within assigned areas of responsibility. The U.S. Central Command (CENTCOM) is responsible for conducting military operations in its area of responsibility that extends from the Middle East to Central Asia, including Iraq and Afghanistan. CENTCOM uses subordinate commands, including service component commands, to support and conduct military operations in this area.<sup>15</sup> These subordinate commands currently include U.S. Army Central (USARCENT) in Iraq and U.S. Forces-Afghanistan in Afghanistan. Although these subordinate commands are responsible for the deployment sites, other service component commands also may have a presence in the same area.<sup>16</sup> Each subordinate command is also responsible for assigning a Force Health Protection Officer who is accountable for oversight of OEHS activities within its geographic area of responsibility. In addition, for deployed settings, preventive medicine units are responsible for OEHS assessment, sample and data collection, and reporting activities. Each unit reports through its chain of command to the subordinate command that has responsibility for the base(s) assigned to

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<sup>14</sup>The office is also responsible for deployment medicine, force health protection, medical readiness, international health agreements, theater information systems, humanitarian and health missions, and disaster support. The Office of the Under Secretary of Defense for Acquisition, Technology and Logistics has also issued health-related policy.

<sup>15</sup>The service component commands include U.S. Army Central (USARCENT), U.S. Air Force Central Command, and U.S. Naval Forces Central Command.

<sup>16</sup>According to officials, the U.S. Air Force Central Command was responsible for two deployment sites in Iraq until the responsibility for one was transferred to USARCENT in 2010 and the other was transferred to the Iraqi government in 2011. In addition, U.S. Naval Forces Central Command officials told us they have not had responsibility for any deployment sites in Iraq or Afghanistan since we last reported in July 2005. According to officials, U.S. Forces Afghanistan has had responsibility for deployment sites in Afghanistan since it was established in 2009.

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that unit.<sup>17</sup> As of February 1, 2015, there was one preventive medicine unit available to conduct OEHS activities in Iraq and one in Afghanistan, which reported to USARCENT and U.S. Forces-Afghanistan, respectively.<sup>18</sup>

Each of the military services has a public health surveillance center that provides support and technical guidance on reporting on potential environmental risks to combatant commands and their subordinate commands. These public health surveillance centers include the U.S. Army Public Health Command, the U.S. Air Force School of Aerospace Medicine, and the Navy & Marine Corps Public Health Center. In addition, these centers provide technical expertise and support for the subordinate commands' preventive medicine units in theater. These surveillance centers have also developed and adapted military exposure guidelines for deployment using existing U.S. national standards for human health exposure limits and technical monitoring procedures (e.g., standards of the U.S. Environmental Protection Agency and the National Institute for Occupational Safety and Health).

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## DOD's Collection of OEHS Data

As part of DOD's health surveillance framework, Force Health Protection & Readiness deployment health policies require the preventive medicine units to regularly collect and report a variety of data during deployments to identify and respond to health threats that servicemembers may have encountered.<sup>19</sup> Health surveillance during deployments includes identifying the deployed population at risk, recognizing and assessing potentially hazardous health exposures and conditions, employing specific preventive countermeasures, daily monitoring of real-time health outcomes, and reporting of disease and injury data.

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<sup>17</sup>Each military service has preventive medicine units, though they may be named differently. Throughout this report, we use the term "preventive medicine unit" to apply to these units fielded by the military services.

<sup>18</sup>Preventive medicine units may include individuals from more than one military service. According to USARCENT officials, the preventive medicine unit that conducts OEHS activities in Iraq also conducts these activities in Kuwait, Jordan, the United Arab Emirates, and Qatar.

<sup>19</sup>See DOD Instruction 6490.03, *Deployment Health*, (Aug. 11, 2006; certified current as of Sep. 30, 2011), and Joint Staff Memorandum MCM-0028-07, *Procedures for Deployment Health Surveillance*, (Nov. 2, 2007).

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DOD collects and stores three types of data during deployments: (1) daily individual servicemember location data—such as the duty station—which is stored by DOD's Defense Manpower Data Center; (2) medical data—including data on health outcomes acquired from servicemember medical records—which is stored by DOD's Armed Forces Health Surveillance Center;<sup>20</sup> and (3) OEHS data, including ambient air, water, and soil samples. Once collected, DOD currently uses two separate IT systems for the storage of OEHS data—MESL and DOEHRS:

- MESL, originally implemented in 2003, contains both classified and unclassified documents that have been scanned and uploaded into the system.<sup>21</sup> Officials can use MESL for submitting OEHS documents, conducting searches based on key words, and downloading OEHS documents.<sup>22</sup>
- DOD subsequently began implementing DOEHRS in 2006. Unlike MESL, DOEHRS is a database that incorporates additional functionalities including OEHS data collection, management, and assessment—including the ability to query data—in a single system. It allows users in theatre to capture field data, such as air, water, and soil samples; compare sample results with exposure guidelines; report sampling data; and view laboratory data instantly once data are loaded into the system. Unlike MESL, DOEHRS only contains unclassified data.<sup>23</sup>

While there are some departmental requirements for some OEHS reports for deployment sites—such as an initial assessment—the total number of OEHS reports for each deployment site varies because these reports

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<sup>20</sup>DOD's Armed Forces Health Surveillance Center serves as the central source for DOD-level medical surveillance data, which it stores mainly in its Defense Medical Surveillance System. This system contains current and historical data on diseases and medical events (e.g., hospitalizations, laboratory tests, and immunizations) affecting servicemembers throughout their military careers.

<sup>21</sup>MESL was originally established by DOD as the OEHS Document Archival Portal and went through several name changes before being renamed the MESL in October 2011.

<sup>22</sup>Although MESL has the capability to search the contents of a document by key words, a U.S. Army Public Health Command official told us that this capability only applies to certain file types, such as Adobe or Excel files.

<sup>23</sup>Although the DOEHRS system only stores unclassified data, a U.S. Army Public Health Command official told us it does have the capability to reference classified data or reports stored on DOD's classified computer networks.

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reflect the specific occupational and environmental circumstances unique to each location.

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**Relevant VA  
Organizational Structure**

VA is comprised of three administrations, two of which focus on benefits for veterans: VBA and VHA.<sup>24</sup>

- VBA processes veterans' claims for monthly compensation for service-connected disabilities. VBA determines eligibility criteria for disability compensation, which can include identifying specific health conditions, like those associated with occupational and environmental hazards in Iraq and Afghanistan, and determining whether these conditions are service-connected.
- VHA operates the VA health care system, which provides health care to veterans through its various facilities, including outpatient clinics and medical centers. VHA also may provide health coverage to spouses, survivors, and children of veterans who are permanently and totally disabled from a service-connected disability, or who died in the line of duty or from a service-connected disability. VHA also conducts or sponsors research on veterans' illnesses related to military occupational and environmental exposures.

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<sup>24</sup>The third administration, the National Cemetery Administration, provides burial space for veterans and their eligible family members, and maintains national cemeteries, among other, related duties.

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## Inconsistent and Ambiguous Policies Have Impeded Central Storage and Quality Assurance of OEHS Data

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### Inconsistent DOD and Military Service-Specific Policies Have Resulted in Fragmentation and Duplication in the Storage of OEHS Data

Inconsistencies between DOD and military service-specific policies regarding OEHS data storage has led to fragmentation and duplication of OEHS data between the department's two systems—MESL and DOEHRS. Officials with Force Health Protection & Readiness told us that DOD is transitioning from the use of MESL to DOEHRS, which has greater functionality. However, the departmental policy developed by this office—updated in 2011—states that all classified and unclassified OEHS data should be stored in MESL even though DOEHRS was implemented in 2006.<sup>25</sup> Officials from the U.S. Army Public Health Command—the office that maintains MESL and has technical expertise in DOEHRS—confirmed the department's intent to transition from MESL to DOEHRS, and told us that this transition would eventually include the transfer of all unclassified documents currently in MESL to DOEHRS (once DOEHRS had been sufficiently upgraded) while classified data would remain in MESL. However, these same officials told us that resources have not been obtained to complete this task, and that the upgrades are time- and resource-intensive. Force Health Protection & Readiness officials explained that DOD's current policy does not reflect the potential transition from MESL to DOEHRS because developing the functionality of DOEHRS in archiving data from deployments was still under way when the policy was last updated in 2011—about 5 years after DOEHRS was implemented.<sup>26</sup> However, these officials told us that the policy is currently being revised to require the storage of unclassified OEHS data in DOEHRS, and they expect the updated policy to be released in 2016.

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<sup>25</sup>See DOD Instruction 6490.03, *Deployment Health*, (Aug. 11, 2006; certified current as of Sep. 30, 2011).

<sup>26</sup>A U.S. Army Public Health Command official told us that DOEHRS was updated in 2011 to include the option to submit surveys on various aspects of a deployment site, including waste management surveys and food sanitation surveys.

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Further, when we reviewed all of DOD's relevant OEHS policies as well as corresponding policies developed by each of the military services—all dated after 2006—we identified inconsistencies about which system should be used to store OEHS data.<sup>27</sup> Only 3 of the 14 policies we reviewed instruct officials to store OEHS data in DOEHS, while 4 policies instruct officials to store OEHS data in MESL. Six of the policies instruct the use of both systems as appropriate, depending on the type of document being submitted and the availability of DOEHS during a deployment. Further, one of the policies does not list either system, as it says that databases are necessary for OEHS data storage but does not specifically mention DOEHS or MESL.<sup>28</sup> See Table 1 for the list of 14 policies related to OEHS data storage. Inconsistent policies are contrary to federal standards for internal control, which state that management should have policies in place that are both appropriate and clear.<sup>29</sup>

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<sup>27</sup>All but one of these policies referenced DOD Instruction 6490.03, which reflects the departmental policy on OEHS storage. The only policy that did not directly reference DOD Instruction 6490.03 referenced another policy, which refers to DOD Instruction 6490.03.

<sup>28</sup>Army Regulation 11-35 (May 2007) highlights the importance of collecting and storing OEHS data, but does not specifically mention DOEHS or MESL. According to DOD officials, the regulation is currently under revision.

<sup>29</sup>See [GAO/AIMD-00-21.3.1](#).

**Table 1: Policies that Direct the Storage of Occupational and Environmental Health Surveillance Data to the Defense Occupational and Environmental Health Readiness System (DOEHRS) or the Military Exposure Surveillance Library (MESL)**

| Policy                                                                                            | DOEHRS | MESL           | Neither        |
|---------------------------------------------------------------------------------------------------|--------|----------------|----------------|
| Department of Defense Instruction 6490.03 (2011)                                                  |        | X              |                |
| Department of Defense Instruction 6055.05 (2008)                                                  | X      | X <sup>a</sup> |                |
| Joint Chiefs of Staff Memorandum MCM 0017-12 (2012)                                               |        | X              |                |
| Central Command Regulation 40-2 (2014)                                                            | X      |                |                |
| Army Regulation 11-35 (2007)                                                                      |        |                | X <sup>b</sup> |
| U.S. Army Public Health Command Technical Guidance 230 (2013)                                     |        | X              |                |
| Air Force Instruction 48-145 (2014)                                                               | X      |                |                |
| U.S. Air Force Central Command Public Health Guide (2014)                                         | X      | X              |                |
| U.S. Air Force Central Command Special Instruction 13-04 (2014)                                   | X      | X              |                |
| U.S. Air Force Central Command Bioenvironmental Engineering Deployment Guide (2014)               | X      | X              |                |
| Air Force Manual 48-146 (2012)                                                                    | X      |                |                |
| Secretary of the Navy Instruction 6200.1 (2014)                                                   |        | X              |                |
| Occupational and Environmental Health Site Assessment Guide (2012) <sup>c</sup>                   | X      | X              |                |
| Technical Bulletin: Sanitary Control and Surveillance of Field Water Supplies (2010) <sup>d</sup> | X      | X              |                |

Source: GAO analysis of DOD information. | GAO-15-487

<sup>a</sup>Although DOD Instruction 6055.05 does not directly reference MESL in the policy, it does reference the “DOEHRS data portal,” which was a prior name for MESL.

<sup>b</sup>Army Regulation 11-35 (May 2007) highlights the importance of collecting and storing OEHS data, but does not specifically mention DOERHS or MESL.

<sup>c</sup>The Army, the Air Force, and the Navy jointly developed this guide on occupational and environmental health site assessments for all officials to follow, and each of the military services has its own reference for it (NTRP 4-02.9, AFTTP 3-2.82\_IP, and ATP 4-02.82).

<sup>d</sup>The Army, the Air Force, and the Navy jointly developed this technical bulletin regarding the sanitation and safety of water during deployments for all officials to follow, and each of the military services has its own reference for it (TB MED 577, AFMAN 48-138\_IP, and NAVMED P-5010-10).

MESL and DOEHRS store similar types of unclassified OEHS data, such as environmental sample data (e.g., water and soil samples) and risk assessments for deployment sites. (See table 2.) Our prior work has found that inefficiencies can occur when there is fragmentation and duplication, such as when more than one system offers the same services.<sup>30</sup> Without consistent policies on which system should be used to store unclassified OEHS data, officials’ efforts to store these data are inefficient and have resulted in both fragmentation and duplication. This has occurred because, in some cases, similar types of unclassified OEHS

<sup>30</sup>See [GAO-15-404SP](#).

data have been submitted to both MESL and DOEHRS, and in other cases, identical OEHS data has been submitted to both systems. However, neither system serves as a central repository for these data. As a result, it is difficult to identify complete and comprehensive data sets for specific types of OEHS data, which may lead to problems when officials attempt to use these data in the future.

**Table 2: Types of Unclassified Occupational and Environmental Health Surveillance (OEHS) Data Contained in the Defense Occupational and Environmental Health Readiness System (DOEHRS) or the Military Exposure Library (MESL)**

| Type of OEHS data                                                                 | DOEHRS | MESL |
|-----------------------------------------------------------------------------------|--------|------|
| Samples (e.g., air, water, soil)                                                  | X      | X    |
| Surveys (e.g., food, pest, waste)                                                 | X      | X    |
| Site risk assessments                                                             | X      | X    |
| Periodic Occupational and Environmental Monitoring Summaries (POEMS) <sup>a</sup> | X      | X    |
| Incident reports                                                                  | X      |      |
| Visuals (photos, graphics)                                                        | X      | X    |

Source: GAO analysis of DOD data. | GAO-15-487

<sup>a</sup>POEMS are documents that identify the types of exposure hazards identified at a site (e.g., airborne pollutants, water pollutants, infectious disease, noise, heat/cold), summarize and assess data and information collected about those hazards, assess mitigation measures that have been implemented to address the hazard, and then provide an assessment of the significance of any known or anticipated short-term (potential acute) and long-term (post-deployment) health effects to the personnel population deployed to the site.

A U.S. Army Public Health Command official who has technical expertise in both systems confirmed that there is duplication of OEHS data storage, but stated that there is no reasonable way to determine the extent because only DOEHRS has specific data level querying capabilities. Therefore, this could only be determined by comparing individual documents, which is not feasible because there are thousands of records in each system.

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## Military Services' Inconsistent Quality Assurance Processes May Not Ensure the Reliability of OEHS Data

DOD's department-wide policy that governs the collection and storage of OEHS data during deployments does not specifically address quality assurance for OEHS data. As a result, the military services lack specific and consistent guidance on performing quality assurance reviews, which may impact the reliability of these data.<sup>31</sup> According to military service officials, quality assurance reviews of OEHS data collected at deployment sites are generally performed once the data have been submitted to DOEHRS. As a result, it is not always feasible to verify the accuracy of the samples, and the quality assurance reviews are focused more on the completeness and reasonableness of data entry. Officials may perform these quality assurance checks while at a deployment site. However, the services' public health surveillance centers in the United States may also conduct these reviews. According to officials, quality assurance reviews are limited to OEHS data that have been submitted to DOEHRS because MESL only contains uploaded documents that cannot be edited or modified. Data in DOEHRS can be reviewed for quality assurance purposes after it has been submitted, and the system has the capability of documenting that a quality assurance process has occurred.

A Force Health Protection & Readiness official told us that the department's deployment health policy was focused on monitoring the implementation of the policy as a whole and did not specifically address quality assurance for OEHS data in DOEHRS. As a result, some of the military services developed their own guidance, which has resulted in inconsistent approaches and levels of effort.

- The Army's policy that discusses quality assurance for OEHS data states that data should be collected to ensure reliability and completeness, but does not discuss how these data should be reviewed.<sup>32</sup> U.S. Army Public Health Command officials told us that they check OEHS data submissions in DOEHRS for completion in all relevant data fields and for general reasonableness of the data.

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<sup>31</sup>See DOD Instruction 6490.03, *Deployment Health*, (Aug. 11, 2006; certified current as of Sep. 30, 2011).

<sup>32</sup>See U.S. Army Technical Guidance 317, *Technical Guide for Collection of Environmental Sampling Data Related to Environmental Health Site Assessments for Military Deployments*, (February 2009).

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- The Air Force's policy that addresses quality assurance for OEHS data states that procedures for quality assurance should be developed, but does not give any specifics as to how this should be done.<sup>33</sup> Officials from the Air Force Medical Support Agency—an entity that provides guidance for U.S. Air Force Central Command on how to execute Air Force policy—told us that they did not think that quality assurance of OEHS data in DOEHS collected by the Air Force was occurring to any large extent.
  - A Navy & Marine Corps Public Health Center official told us that the Navy and Marine Corps do not have policies on quality assurance for OEHS data. Despite having no policy, however, Navy & Marine Corps Public Health Center officials told us that they check for completion and general reasonableness of the data.

These inconsistent quality assurance processes reduce DOD's ability to be confident about the reliability of OEHS data—especially because these reviews do not always occur—and potentially limit the usefulness of these data for monitoring the health of servicemembers and veterans. This runs counter to federal standards for internal control, which state that management should continually monitor information captured and maintained for several factors, including its reliability.<sup>34</sup>

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<sup>33</sup>See Air Force Manual 48-146, *Occupational and Environmental Health Program Management*, (October 2012). A U.S. Air Force Central Command official also told us that there is currently no guidance or policy on how quality assurance should be performed on OEHS data.

<sup>34</sup>See [GAO/AIMD-00-21.3.1](#).

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## Site Assessments Are Used to Identify Potential Health Risks, but the Extent to Which These Risks Are Mitigated for Deployed Servicemembers Is Unclear

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### Site Assessments Are Used to Identify Potential Health Risks for Servicemembers Deployed to Iraq and Afghanistan

The military services use site assessments to identify and address potential occupational and environmental health risks at deployment locations. In 2007, DOD established the Occupational and Environmental Health Site Assessment (OEHSA) as the standardized process for assessing and reporting occupational and environmental health site conditions at deployment sites.<sup>35</sup> While the OEHSA is DOD's primary and most comprehensive process for assessing risks, other methods may also be used, as needed. OEHSAs are completed by preventive medicine units and generally include the initial evaluation of the following conditions with continued surveillance as deemed necessary: ambient air, soil, water, radiological surveys, noise, occupational health hazards, waste disposal, and sanitation.<sup>36</sup> OEHSAs also may contain location-specific findings and can include recommended countermeasures for mitigating these potential occupational and environmental health threats. These recommendations may include a wide range of activities, such as

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<sup>35</sup>Each OEHSA documents the current status of the deployment site, and is used to prioritize future assessments and guide on-site preventive medicine resource allocation. Additionally, the risks identified are assigned a level of severity (low, medium, or high). See Joint Staff Memorandum MCM-0028-07, *Procedures for Deployment Health Surveillance*, (Nov. 2, 2007).

<sup>36</sup>DOD uses U.S. Environmental Protection Agency methods as a basis for OEHS sampling. While the objectives of occupational and environmental sampling used by DOD in deployment settings are similar to those used by the U.S. Environmental Protection Agency in the civilian sector, the methods primarily differ with regards to the underlying assumptions of the exposed populations, lengths of exposure, nature of exposures, and the limitations of collecting samples and data.

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specifying any necessary education for servicemembers on how to identify potential health threats, the use of personal protective equipment to minimize exposure, or the need for new or continued testing of ambient air or water. In our review of 50 OEHSAs for sites in Iraq or Afghanistan, we found that almost all (46 of 50 OEHSAs) contained recommendations for mitigating potential health risks for servicemembers in these locations. For example, a 2011 OEHSA for a site in Afghanistan found that particulate matter concentrations exceeded military guidelines, and consequently, air quality was at moderate risk for a significant health concern.<sup>37</sup> As a result, the OEHSA recommended, among other things, that personal protective equipment be worn during periods when conditions were very dusty and that methods to suppress dust be instituted, such as using large rocks and gravel in high-traffic areas within a deployment site. In another example, a 2011 OEHSA for a site in Iraq noted that burn-pit exposure posed a moderate risk. As a result, the OEHSA recommended additional burn-pit air monitoring during the next assessment and that servicemembers fueling the burn pit wear respiratory personal protective equipment.

Officials from USARCENT and U.S. Forces-Afghanistan told us that their respective Force Health Protection Officers ensure that OEHSAs are being completed—as required by CENTCOM policy—and perform quality assurance reviews for completion and reasonableness.<sup>38</sup> For example, USARCENT's Force Health Protection Officer told us that they check OEHSAs for completeness and reasonableness by reviewing relevant historical data documented in DOEHS and by using their subject matter expertise. U.S. Forces-Afghanistan officials told us that their Force Health Protection Officer uses similar methods to monitor the completion of OEHSAs. In addition, the CENTCOM official responsible for OEHS has recently begun holding and documenting monthly meetings with the

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<sup>37</sup>Particulate matter includes coarse particles between 2.5 and 10 micrometers in diameter, as well as fine particles smaller than 2.5 micrometers. Particle pollution may contain a number of components, including acids, organic chemicals, metals, and soil or dust particles, according to the U.S. Environmental Protection Agency. The size of particles is directly linked to their potential for causing health problems.

<sup>38</sup>See CENTCOM Regulation 40-2, *Deployment Health Protection*, (Aug. 29, 2014). Subordinate commands' Force Health Protection Officers are responsible for monitoring the completion of OEHSAs for all deployment sites within their respective areas of responsibility.

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service component commands to further monitor OEHS activities, including the completion of OEHSAs for deployment sites.

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The Extent to Which Potential Health Risks Identified in Site Assessments Are Mitigated Is Unclear Due to a Lack of Documentation and Monitoring

Although OEHSAs identify recommended countermeasures to mitigate some potential occupational and environmental health risks, the extent to which these recommendations are being implemented is unclear due to a lack of documentation and monitoring. According to CENTCOM policy, base commanders are responsible for using completed OEHSAs to make decisions about local deployment health activities.<sup>39</sup> This could include, for example, whether and how to implement recommendations to mitigate identified risks. However, this policy does not require that base commanders document their decisions in these instances, and as a result, USARCENT and U.S. Forces-Afghanistan officials told us that they could not readily identify whether documentation of these decisions exists.<sup>40</sup> In contrast, DOD's policy for its safety and occupational health program requires that the department's components, including the combatant commands, establish procedures to ensure that decisions related to risk management are documented, archived, and reevaluated on a recurring basis.<sup>41</sup> Furthermore, clear and appropriate documentation is a key component of internal controls, according to the federal standards for internal control.<sup>42</sup> Without such documentation, it is difficult to determine whether and how recommendations identified in site assessments are being implemented. USARCENT and U.S. Forces-Afghanistan officials told us that they are not monitoring the implementation of these recommendations, and instead rely on preventive medicine units to elevate any concerns about implementing these recommendations through the chain of command, as necessary.

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<sup>39</sup>See CENTCOM Regulation 40-2, *Deployment Health Protection*, (Aug. 29, 2014). Base commanders exercise operational control of the deployment site. As the base commander is responsible for funding, equipment, and personnel assigned to the deployment site, he/she has a broader perspective regarding resources available for mitigating identified risks.

<sup>40</sup>A CENTCOM official confirmed that there are no requirements in other policies for the base commander to document these decisions.

<sup>41</sup>See DOD Instruction 6055.01, *DOD Safety and Occupational Health Program*, (Oct. 14, 2014).

<sup>42</sup>See [GAO/AIMD-00-21.3.1](#).

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Nonetheless, CENTCOM is ultimately responsible for overseeing the coordination of force health protection programs and compliance with all DOD requirements within its area of responsibility.<sup>43</sup> CENTCOM officials also told us that they are not monitoring the implementation of recommendations contained in OEHSAs because they, too, rely on preventive medicine units to elevate concerns as needed. However, CENTCOM's policy on risk management requires the implementation of internal controls and, subsequently, the supervision and evaluation of the effectiveness of these controls.<sup>44</sup> Similarly, federal standards for internal control note that once an agency has identified areas of risk, it should determine how to manage the risk and what actions should be taken.<sup>45</sup> Without relevant documentation on whether OEHSAs' recommendations are being implemented, neither the combatant command nor the subordinate commands can readily determine the extent to which potential health risks for deployed servicemembers are being mitigated in Iraq or Afghanistan.

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## DOD's and VA's Use of OEHS Data to Address Post-Deployment Health Conditions Has Been Limited

Despite the ongoing collection of OEHS data, both DOD and VA have used OEHS data to a limited extent to address post-deployment health conditions. Force Health Protection & Readiness officials told us that the primary limitation with OEHS data collected during deployments continues to be the inability to capture individual servicemembers' exposures—an issue that we reported on in 2012.<sup>46</sup> These officials told us that this limitation has impeded the department's ability to evaluate or treat some servicemembers who have been exposed to occupational or environmental hazards. To address this issue, DOD officials have been conducting research on the use of dosimeters—sensor devices that individuals wear to monitor real-time exposure to hazardous materials—which would allow the collection of individual exposure data. However, the logistics of using dosimeters during deployments is complicated because current technology allows for a dosimeter to be used for a single known hazard, and in deployed settings, servicemembers may be

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<sup>43</sup>See CENTCOM Regulation 40-2, *Deployment Health Protection*, (Aug. 29, 2014).

<sup>44</sup>See CENTCOM Regulation 385-1, *USCENTCOM Occupational Safety & Health Program*, (Aug. 19, 2014).

<sup>45</sup>See [GAO/AIMD-00-21.3.1](#).

<sup>46</sup>See [GAO-12-412](#).

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exposed to multiple hazards and unknown exposures. U.S. Army Public Health Command officials also told us that the type of dosimeter used depends on the type of hazard that the servicemember would be exposed to and the method of exposure. During deployments, these factors are often unknown; therefore it is difficult to determine the type of dosimeter that should be used. Additionally, it may not always be feasible to have servicemembers wear dosimeters while performing deployment duties, and the resources needed for monitoring may not always be available, according to these officials.

DOD also creates Periodic Occupational and Environmental Monitoring Summaries (POEMS), which summarize historical environmental health surveillance monitoring efforts and identify possible short- and long-term health risks at deployed locations.<sup>47</sup> While these summaries do not represent confirmed exposures or individual exposure levels, they are an indication of possible exposures, which can inform diagnosis, treatment, and the determination of disability benefits. According to U.S. Army Public Health Command officials, POEMS are made available to medical providers to help inform diagnosis and treatment of servicemembers. However, these officials said that providers' use of POEMS may be limited because they do not provide information on the types of illnesses that may result from an exposure. VBA officials told us that they have access to unclassified POEMS through a MESL website. A VBA official told us that disability officials have been made aware of this website through a newsletter distributed to benefit managers throughout the country. However, this official could not tell us the extent to which POEMS are used in making disability determinations. In September 2014, DOD implemented a new review process for the completion of POEMS, which includes making these records publicly available via a MESL website.<sup>48</sup> As of March 2015, 23 of the approximately 40 POEMS from Iraq and Afghanistan have been made available. DOD officials told us

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<sup>47</sup>POEMS are documents that identify the types of exposure hazards identified at a site (e.g., airborne pollutants, water pollutants, infectious disease, noise, heat/cold), summarize and assess data and information collected about those hazards, assess mitigation measures that have been implemented to address the hazard, and then provide an assessment of the significance of any known or anticipated short-term (potential acute) and long-term (post-deployment) health effects to the personnel population deployed to the site.

<sup>48</sup>For the public website, see <https://mesl.apgea.army.mil/mesl/healthSummary.jsp>. (accessed on March 16, 2015)

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that they intend to promote the website once all completed POEMS have been posted, although officials could not provide a timeline for this effort.

VA also uses OEHS data to supplement information used to educate veterans on specific deployment issues, although its use of these data is limited. Specifically, VA's Office of Public Health developed a website to help veterans learn about potential occupational and environmental hazards during deployments and their potential health effects.<sup>49</sup> In doing so, VA's Office of Public Health officials told us they develop the content of the website through environmental hazard information obtained from several sources, including the U.S. Environmental Protection Agency. These officials told us they may also use OEHS data about a specific incident to supplement their information. For example, the website includes detailed information about Gulf War veterans' unexplained illnesses, including available benefits and links to relevant research. VA supplements this information with OEHS data about potential types of occupational hazards that Gulf War veterans may have experienced, such as exposures to industrial solvents and radiation.

Additionally, DOD and VA use OEHS data to conduct research that may help determine a service connection for post-deployment health conditions. Despite the availability of OEHS data, it has been inherently difficult for scientific research to establish a link between an exposure and specific health conditions. For example, DOD and VA have worked together on a study that examined the participants in the Millennium Cohort Study who had deployed to Iraq or Afghanistan, to determine whether there was an association between exposure to open burn pits and respiratory health conditions.<sup>50</sup> In another example, officials from the Army recently published a study that evaluated associations between

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<sup>49</sup>Within, VHA, the Office of Public Health serves as the leader and authority in public health. See <http://www.publichealth.va.gov/exposures/index.asp> for the website. (accessed on March 16, 2015)

<sup>50</sup>The Millennium Cohort Study is the largest prospective study designed to assess the long-term health effects of military service both during and after deployment. As part of this study, DOD and VA conducted another study that found that, among other things, a servicemember located within 3 miles of a documented burn pit was not significantly associated with increased risk for respiratory symptoms or conditions compared to those servicemembers located greater than 3 miles from a burn pit. See Smith et al., "The Effects of Exposure to Documented Open-Air Burn Pits on Respiratory Health Among Deployers of the Millennium Cohort," *Journal of Environmental Medicine*, vol. 54, no. 6 (2012): 708-716.

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deployment to Iraq and Kuwait and the development of respiratory conditions post-deployment.<sup>51</sup> However, neither study was able to identify a causal link between exposures to burn pits and respiratory conditions. Additionally, in its 2011 report, the Institute of Medicine was unable to determine whether certain long-term health effects are likely to result from exposure to burn pits during deployments because the studies it reviewed lacked the support to conclude the absence or existence of an association.<sup>52</sup> As a result, it recommended that additional studies of health effects in veterans deployed to Iraq or Afghanistan were needed. Both VA and DOD have begun additional research as a result of this recommendation.

Since 2003, DOD and VA have collaborated through the DHWG on deployment health issues related to occupational and environmental hazards.<sup>53</sup> For example, the DHWG sponsored an initiative related to DOD's work on the individual longitudinal exposure record (ILER), the intention of which is to provide linkages between different types of data—environmental monitoring, biomarkers of exposure, and troop locations and activity—and an individual's medical records.<sup>54</sup> As a result, the ILER would create a complete record of servicemembers' exposures over the course of their careers, which could support disability benefits claims, as well as retrospective studies. In April and May 2014, DOD outlined the users of the data, the sources of the data, guidance on developing a system to meet the needs of those who would use an ILER, and its intended functions. DOD officials told us that the project is currently in the

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<sup>51</sup>Abraham et al., "A Retrospective Cohort Study of Military Deployment and Postdeployment Medical Encounters for Respiratory Conditions," *Military Medicine*, vol. 179 (2014): 540-546. This study found that those deployed to Iraq and Kuwait had elevated rates of medical encounters related to symptoms involving the respiratory system compared to those stationed in the United States.

<sup>52</sup>See Institute of Medicine for the Department of Veterans Affairs. *Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan*. Washington, D.C.: The National Academies Press, 2011.

<sup>53</sup>The DHWG is a DOD and VA collaborative group created in 2003 that examines several deployment health issues related to occupational and environmental hazards.

<sup>54</sup>Biomarkers of exposure consist of antibodies, metabolites, or the parent compound itself (or its metabolic products), present in biological fluids or tissues. Biomarkers of exposure indicate that the hazardous agents in the environment actually entered into the body (pathway completion) resulting in an exposure to that individual.

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second phase of its pilot program, and they are 6 to 8 years away from completing its development.

In 2013, the DHWG helped develop a data transfer agreement that was intended to facilitate the exchange of data identified to assist both departments in several ways, including making clinical decisions for care.<sup>55</sup> One aspect of the agreement specifies that DOD is to transfer to VA lists of servicemembers or veterans determined by DOD to have had an actual or potential environmental, occupational, or military-related exposure that has the potential for adverse long-term health effects.<sup>56</sup> According to VA officials, DOD has not been proactively providing these lists. However, a VA official told us that the department considers all deployed servicemembers to have had potential exposures, and as a result, they have been requesting lists of all servicemembers deployed to an area with a burn pit. Further, VA officials said that when they learn of an exposure incident and request data, DOD has generally fulfilled that request. In addition, VA officials told us that DOD sends data on servicemembers' and veterans' deployment status as requested by VA to verify eligibility of those who have signed up for its Burn Pit Registry.

In August 2014, DOD officials established the Exposure Related Data Transfer Agreement Subgroup to improve the department's efforts in proactively meeting the data transfer requirements. Specifically, the workgroup met in January 2015 to finalize its objectives, which are to determine the appropriateness and timeliness of sharing specific exposure-related data and information with VA and to develop recommendations for any medically relevant follow-up actions for servicemembers or veterans exposed to occupational and environmental health hazards. DOD officials did not have a time frame for when this work would be completed.

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<sup>55</sup>See DOD and VA, *Data Transfer Agreement: Agreement for Sharing of Environmental and Occupational Exposure Record-Level Data Between the U.S. Department of Defense and the U.S. Department of Veterans Affairs*, (February 2013).

<sup>56</sup>In addition to requiring specific transfers of data from DOD to VA, the agreement also lists examples of data that should be transferred from VA to DOD—such as VBA claims data for health conditions related to potential environmental, occupational, or military-related exposures—and specifics about what type of personally identifiable information should be included.

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## Conclusions

In the wake of veterans' unexplained illnesses such as from the Persian Gulf War, the collection of OEHS data has become increasingly important because of its critical role in helping to identify exposures and determine the causes of post-deployment health issues. Servicemembers deployed to Iraq and Afghanistan have continued to express concerns about health conditions they attribute to exposures during their deployment, and their eligibility to obtain certain benefits is based on whether these conditions can be connected to their military service. However, problems with the storage and quality assurance for OEHS data compromise the departments' ability to use them in determining service-connections for specific health conditions, or in conducting other important research. Specifically, fragmentation and duplication in the storage of unclassified OEHS data—due to inconsistent policies across DOD and the military services—hinder the use of these data, as there is no single repository from which to retrieve them. Moreover, the reliability of OEHS data is also potentially problematic as the military services have developed varying approaches for quality assurance reviews in the absence of departmental guidance. Of additional concern, DOD does not know the extent to which recommended countermeasures for mitigating exposures to occupational and environmental health hazards are being implemented at deployment sites because CENTCOM does not require the documentation of these decisions. Consequently, CENTCOM and its subordinate commands—USARCENT and U.S. Forces-Afghanistan—do not proactively monitor the extent to which base commanders are mitigating potential health risks in Iraq or Afghanistan. The approach instead is to wait for concerns to be elevated—potentially putting servicemembers at risk for harmful exposures. While the health and well-being of our servicemembers and veterans is paramount, DOD's and VA's ability to prevent, diagnose, and study post-deployment health conditions is compromised without accessible and reliable information about risk mitigation activities and OEHS data.

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## Recommendations for Executive Action

To eliminate the fragmentation and duplication in the storage of unclassified OEHS data we recommend that the Secretary of Defense determine which IT system—DOEHRS or MESL—should be used to store specific types of unclassified OEHS data, clarify the department's policy accordingly, and require all other departmental and military-service-specific policies to be likewise amended and implemented to ensure consistency.

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To ensure the reliability of OEHS data, we recommend that the Secretary of Defense establish clear policies and procedures for performing quality assurance reviews of the OEHS data collected during deployment, to include verifying the completeness and the reasonableness of these data, and require that all other related military-service-specific policies be amended and implemented to ensure consistency.

To ensure that potential occupational and environmental health risks are mitigated for servicemembers deployed to Iraq and Afghanistan, we recommend that the Secretary of Defense require CENTCOM to revise its policy to ensure that base commanders' decisions on whether to implement risk mitigation recommendations identified in OEHSAs are adequately documented and consistently monitored by the appropriate command.

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## Agency Comments and Our Evaluation

We requested comments on a draft of this report from DOD and VA. Both departments provided written comments that are reprinted in appendixes I and II. DOD also provided technical comments that we incorporated as appropriate.

In commenting on this draft, DOD concurred with all of our recommendations, and VA generally agreed with our conclusions. DOD also provided the following responses to each of our recommendations:

- In responding to the first recommendation to clarify the department's policy on which IT system (DOEHRS or MESL) should be used to store specific types of unclassified OEHS data, DOD noted that it will clarify DOD Instruction 6490.03 in a subsequent revision and will issue appropriate guidance on the use of DOEHRS and MESL. DOD also noted that we identified fragmentation and duplication, but that our only evidence was the use of two systems to store data. However, our evidence of fragmentation and duplication was based on the storage of OEHS data, which results from the inconsistent use of two systems. Specifically, as stated in our report, in some cases, similar types of unclassified OEHS data have been submitted to both MESL and DOEHRS, which would result in fragmentation of data storage. In other cases, identical OEHS data has been submitted to both systems, resulting in duplicate data storage.

Additionally, in response to our recommendation that DOD require all other departmental and military-service-specific policies to be likewise amended, DOD stated that once a new policy is published, the entire department, including the military services, revises related policies

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accordingly. As stated in our report, the other departmental and military service policies that are linked to the main DOD Instruction are inconsistent in identifying which system to use for storing OEHS data. Therefore, we believe that it is important for the department to ensure that the appropriate revisions are made to all related policies.

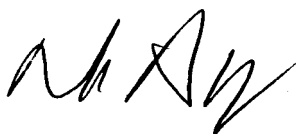
- In responding to the second recommendation to establish clear policies and procedures for performing quality assurance reviews of OEHS data collected during deployment, DOD noted that the implementation of such a process would be complex, in that it would need to include definitions of completeness and reasonableness, among other items. DOD also noted this would require additional resources. While we appreciate DOD's comments, an appropriate level of quality assurance needs to be performed to ensure the reliability of the OEHS data being collected. Otherwise, these data will not be useful for the intended purposes.
- In responding to the third recommendation to require CENTCOM to revise its policy to ensure that base commanders' decisions on whether to implement risk-mitigation recommendations are documented and consistently monitored, DOD noted that DOD Instruction 6055.01 already requires this. Specifically, DOD noted that the Instruction requires that the DOD Components must establish procedures to ensure these decisions are documented, archived, and reevaluated on a recurring basis. However, as stated in our report, current CENTCOM policy does not require documentation of risk-mitigation decisions, as is required by DOD Instruction 6055.01. Further, CENTCOM officials told us that they are not monitoring the implementation of these recommendations. Therefore, we continue to believe that CENTCOM should revise its policy to align with Instruction 6055.01.

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As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committees and the Secretaries of Defense and Veterans Affairs. In addition, the report will be available at no charge on GAO's website at <http://www.gao.gov>.

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If you or your staff members have any questions about this report, please contact me at (202) 512-7114 or [draperd@gao.gov](mailto:draperd@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff members who made key contributions to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read 'Debra A. Draper'.

Debra A. Draper  
Director, Health Care

# Appendix I: Comments from the Department of Defense



## THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1200

### HEALTH AFFAIRS

Ms. Debra A. Draper  
Director, Health Care  
U.S. Government Accountability Office  
441 G Street, NW  
Washington DC 20548

MAY - 8 2015

Dear Ms. Draper:

This is the Department of Defense (DoD) response to the GAO Draft Report, GAO-15-487, "DEFENSE HEALTH CARE: DoD Needs to Clarify Policies Related to Occupational and Environmental Health Surveillance and Monitor Risk Mitigation Activities," dated April 10, 2015 (GAO Code 291224).

Thank you for the opportunity to review and comments on the draft report. The Department concurs with the findings and conclusions detailed in the draft report. Specific responses to the recommendations are enclosed.

Please direct any questions to my points on contact on this matter, Mr. Larry Sipos (Functional) at (703) 681-8433, [larry.sipos.civ@mail.mil](mailto:larry.sipos.civ@mail.mil) or Mr. Gunther Zimmerman (Audit Liaison) at (703) 681-4360, [gunther.j.zimmerman.civ@mail.mil](mailto:gunther.j.zimmerman.civ@mail.mil)

Sincerely,

  
Jonathan Woodson, M.D.

Enclosure:  
As stated

GAO DRAFT REPORT DATED APRIL 10, 2015  
GAO-15-487 (GAO CODE 291224)

**“DEFENSE HEALTH CARE: DOD Needs to Clarify Policies Related to Occupational and  
Environmental Health Surveillance and Monitor Risk Mitigation Activities”**

**DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS**

**RECOMMENDATION # 1:** To eliminate the fragmentation and duplication in the storage of unclassified OEHS data, it is recommended that the Secretary of Defense determine which IT system - DOEHRS or MESL - should be used to store specific types of unclassified OEHS data, clarify the department’s policy accordingly, and require all other departmental and military service-specific policies to be likewise amended and implemented to ensure consistency.

**DoD RESPONSE:** Concur with comment. The GAO report identified “fragmentation and duplication,” but evidence of that fact was only that the Department uses two systems to store data. Nevertheless, the Department agrees it would be helpful to clarify the type of data each system should store. The Department will clarify policy in the next revision of DoDI 6490.03, and will issue appropriate procedural guidance for the use of the DOEHRS and MESL, depending on the type of data and its classification.

The entire Department revises policies after a new policy is published – this is normal process for DoD instructions, and does not require special direction to departmental or military Services to comply.

**RECOMMENDATION # 2:** To ensure the reliability of OEHS data, it is recommended that the Secretary of Defense establish clear policies and procedures for performing quality assurance reviews of the OEHS data collected during deployment, to include verifying the completeness and the reasonableness of these data, and require that all other related military service-specific policies be amended and implemented to ensure consistency.

**DoD RESPONSE:** Concur with comment. DOEHRS has a tiered system of assigned user roles to load data and sign off on them, so DOEHRS at least partially addresses this requirement. Nevertheless, the Department will develop and issue standards for quality assurance measures related to OEHS data collection during deployments. The implementation of a quality assurance process will be complex, necessitating the Department to establish lines of authority and responsibility for completion of such functions; develop and sustain a training program; establish a process for documenting QA reviews; define data-element “completeness” and “reasonableness,” as specified by the GAO; and obtain resources for these additional requirements.

**RECOMMENDATION # 3:** To ensure that potential occupational and environmental health risks are mitigated for service members deployed to Iraq and Afghanistan, it is recommended that the Secretary of Defense require CENTCOM to revise its policy to ensure that base commanders' decisions on whether to implement risk-mitigation recommendations identified in OEHSAs are adequately documented and consistently monitored by the appropriate command.

**DoD RESPONSE:** Concur. DoDI 6055.01 already requires this. Its Enclosure 3, "Risk Management Principles": Para 8, a, (2) states, "The standard for risk management is leadership at the appropriate level of authority making an informed decision to control hazards and to accept SOH risks"; and Para 8,a,(3) (c) states, "The DoD Components must establish procedures to ensure these decisions are documented, archived, and reevaluated on a recurring basis."

Joint Staff and USCENTCOM will revise policy to document risk management decisions and mitigation actions, consistent with DoDI 6055.01. In addition, although the GAO report focuses on the need for documenting USCENTCOM-related OEHS assessment decisions and monitoring the results, DoDI 6055.01 applies to all deployments, and, therefore, to all Geographic Combatant Commands and sub-commands.

# Appendix II: Comments from the Department of Veterans Affairs



DEPARTMENT OF VETERANS AFFAIRS  
WASHINGTON DC 20420

May 6, 2015

Ms. Debra Draper  
Director, Health Care  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Ms. Draper:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office's (GAO) draft report, ***"DEFENSE HEALTH CARE: DoD Needs to Clarify Policies Related to Occupational and Environmental Health Surveillance and Monitor Risk Mitigation Activities"*** (GAO-15-487). VA generally agrees with GAO's conclusions.

The enclosure provides general comments to the draft report. VA appreciates the opportunity to comment on your draft report.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Nabors II", written over a large, stylized circular flourish.

Robert L. Nabors II  
Interim Chief of Staff

Enclosure

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# Appendix III: GAO Contact and Staff Acknowledgments

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## GAO Contact

Debra A. Draper, (202) 512-7114 or [draperd@gao.gov](mailto:draperd@gao.gov)

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## Staff Acknowledgments

In addition to the contact named above, Bonnie Anderson, Assistant Director; Amy Andresen; Jennie Apter; LaKendra Beard; Danielle Bernstein; Muriel Brown; Jacquelyn Hamilton; and Jeffrey Mayhew made key contributions to this report.

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