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Foundation for Integrating Employee Health Activities for Active Duty Personnel in the Department of Defense

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Summary

DoD is a unique and immense employer that is committed to providing medical care and meeting the safety and occupational health needs of its workforce. Historically, DoD has approached occupational health and safety as issues largely separate from other aspects of employee health. However, innovative thinking in recent years has coalesced around the idea of integrating all activities related to employee health. Given its large active duty workforce plus the large number of diverse work sites and the widely varying risks of military duty, DoD has growing interest in exploring whether integration of existing DoD programs related to employee health could improve the health and wellness of DoD's active duty service members and also result in other benefits for DoD (e.g., increased productivity).

DoD's Deputy Assistant Secretary of Defense for Clinical and Program Policy, under the purview of the Assistant Secretary of Defense for Health Affairs, asked the RAND Corporation to document the policy background and the organization of DoD's current system as a starting point for future changes in policy and organization related to integration of employee health activities. The DASD (C&PP) also asked RAND to conduct case studies of civilian organizations considered to have integrated employee health systems. At the direction of the sponsor, the study focuses on active duty personnel only¹ and includes safety, which is closely related to occupational health.

In this monograph, we describe the health-related events and encounters that an active duty service member may experience between accession and separation or retirement. Each encounter represents an opportunity for DoD to assess and monitor the service member's health and well-being and provide intervention when needed. In addition, for the purpose of this study, we have defined *integrated employee health system* more broadly than the civilian definition to mean an infrastructure that would support all employee health activities except health care delivery, provide a way to link information about all aspects of the health of employees, and make this information available to leadership across all departments within the DoD for purposes of policymaking, accountability, improvement, surveillance, and other questions related to health.

¹ The DoD workforce includes a large number of civilians for whom the department is also obligated to provide SOH services. This obligation is codified in the Occupational Safety and Health Act of 1970, as discussed in Chapter Three.

Study Purpose and Approach

The project had two objectives. First, we described SOH policies and organizations within DoD to document the current system. Second, we conducted case studies of employee health programs outside DoD in an effort to gather information and opinions about the implementation process related to, and components of, an integrated employee health system.

Our approach entailed

- reviewing and documenting the policy context of SOH, including some events that led to the development of SOH policies
- collecting and analyzing information on the structure and governance of current programs within DoD related to occupational health
- describing current information technology systems within DoD that might support an integrated employee health program for active duty service members
- studying employee health programs outside DoD (i.e., in civilian companies and other government agencies) that might serve as models.

Background: Evolution and Current State of SOH and Employee Health in DoD

Over the past several decades, DoD has generally followed civilian trends in its policies and practices regarding SOH. At the same time, it has also recognized and addressed unique SOH challenges, such as the risks posed by deployments and combat as well as the potential hazards of operating military equipment.

Our review of the research literature and DoD policy documents, as well as our interviews with DoD personnel, yielded the following composite picture of the current state of SOH arrangements in DoD:

- *SOH policy and implementation cut across several organizations at high levels in the Office of the Secretary of Defense (OSD) and in SOH in the military services.* As a result, DoD's SOH programs are considered by most officials we consulted to be somewhat fragmented at the policy and program level. The military services at the major command and installation levels execute their SOH programs largely independently. Because the services generally execute their programs independently, any lack of integration at the OSD level generally does not affect day-to-day operations at the installation level. In addition, there has been movement toward the development of more standardized metrics among services.
- *Recently, leadership attention has focused on safety, apart from occupational health, as a separate priority.* One consequence of the safety focus has been to elevate safety offices to high levels in the services, separate from those offices responsible for their occupational health-related counterparts.
- *Health promotion and wellness have received considerable attention within DoD through periodic health assessments and educational programs.* Self-administered health assessment instruments have been used by active duty personnel for more than a decade to assess health-related behaviors, frequency of preventive medical care, and use of health care

services. In addition, ongoing campaigns have been used to increase healthy behaviors among active duty personnel.

- *DoD and the services have made efforts to increase coordination, including both high-level formal councils, such as the Defense Safety Oversight Council (DSOC), and informally among SOH practitioners.* Efforts supporting policymaking and execution of SOH are most often undertaken through working groups and management councils composed of dedicated SOH professionals.

A Possible IT Infrastructure to Support Integration of Employee Health

Information technology (IT) will be central to any effort to integrate DoD employee health policies and practices. Ideally, an infrastructure to support integrated employee health would combine IT systems for personal health records with IT systems for occupational and environmental exposures, and both would contain information from deployed and in-garrison populations. The result would be an integrated employee health system that tracks and reports on an individual's exposures and health status within a single record. This type of linkage would facilitate activities such as clinical use of occupational information in diagnosing and treating illnesses and analyses of clinical data in conjunction with data on various types of "exposures."

Our document reviews and structured interviews suggested that DoD information technology systems currently in use and under development may provide a basis for this type of IT infrastructure.

IT Systems for Health Care Data

Since the 1991 Gulf War, DoD has made major progress toward creating a longitudinal electronic health record for all active duty service members. Currently, this system (AHLTA) has limited usefulness for evaluating SOH. AHLTA currently documents outpatient encounters and discharge abstracts for hospitalizations and does not contain comprehensive data on inpatient care. Although all data entered into AHLTA in-garrison and in-theater become part of a clinical data repository (CDR), CDR data are not available to users for standardized reports, ad hoc queries, or aggregate analyses. Plans are under way to design a clinical data warehouse that would enable users to access data from AHLTA records more easily for purposes beyond patient care, such as linkage with other Military Health System (MHS) and DoD data systems, including data on benefit eligibility and occupational exposures.

IT Systems for Occupational and Environmental Exposures

There are two promising IT systems for occupational and environmental exposures, both called the Defense Occupational and Environmental Health Readiness System (DOEHRS), one with a focus on hearing conservation (DOEHRS-HC) and the other on industrial hygiene (DOEHRS-IH).

The DOEHRS-HC system creates, analyzes, and stores hearing test results on a longitudinal record for subgroups of active duty service members considered to be at higher risk of hearing loss in all three services (throughout this monograph, the U.S. Navy includes the Marine Corps). Improvements related to DOEHRS-HC would enhance its utility. Hearing test results conducted through DOEHRS-HC could be incorporated into the service member's

electronic health record in AHLTA on a routine basis. In addition, audiometric data from the hearing tests as well as data from other parts of the pre-employment physical examination conducted at the Military Entrance Processing Station (MEPS) at the time of accession are not, but could be, captured by DOEHRS-HC and AHLTA.

The second system, DOEHRS-IH, currently monitors, analyzes, and stores levels of chemical and physical agents in air, water, and soil of the in-garrison work sites of Army personnel. Maximizing the potential of DOEHRS-IH would require expanding it to the Air Force and Navy and addressing methodological and data issues, such as the methods used to categorize a service member's exposure. In addition, troop location data are needed for linking the exposure data collected for a specific location, both in garrison and in theater, with an individual service member. However, troop location data are classified for theater operations and, therefore, may not be available for assigning individuals to a specific location at a specific point in time. A module within DOEHRS-IH, called DOEHRS-EH (Environmental Health), is being developed specifically to support theater environmental health operations. DOEHRS-EH is currently under development but, once deployed, will encompass occupational and environmental health surveillance data collected by Army, Navy, and Air Force preventive medicine personnel in the deployed environment.

A possible barrier to linking health and environmental data is the fact that AHLTA and DOEHRS are being developed and fielded independently of each other. The DOEHRS modules are the responsibility of the Resources Information Technology Program Office (RITPO), while AHLTA is the responsibility of the Clinical Information Technology Program Office (CITPO). Having the two systems located in different program offices might present challenges to the coordination and communication needed during the development and testing of the data sharing and data transfer functions.

It should be noted that since the research was completed for this monograph, the program offices that provide information technology support to DoD's MHS have been reorganized. The two newly formed organizations under the Chief Information Officer of the Military Health System are the Defense Health Information Management System (DHIMS) and the Defense Health Services Systems (DHSS) (DoD, 2008a; DoD, undated-e; DoD, undated-f). DHIMS now combines the functions of the CITPO and the Theater Medical Information Program—Joint (TMIP-J). The Defense Medical Logistics Standard Support (DMLSS), Executive Information Decision Support (EIDS), and RITPO have merged to create the DHSS.

Civilian Approaches to Employee Health—Applicability to DoD?

What can DoD learn from civilian experience with integrating employee health? To answer this question, we reviewed civilian models of integration to identify promising approaches and practices that might inform DoD efforts to integrate employee health activities. We identified general trends from the peer-reviewed literature, with an emphasis on three case studies, two in the private sector (Johnson & Johnson and FedEx) and one in the public sector (National Aeronautics and Space Administration—NASA).

Our analysis focused on the underlying motivation for the integration, program design, execution styles, and the general outcomes of an integrated model:

- *Motivation:* The key motivation for the move to an integrated system for civilian companies was reducing the high cost of health care benefits.
- *Program design:* The most common design features included health risk assessments, health awareness and education campaigns, personalized interventions, and reassessments of employee health.
- *Execution styles:* The key styles involved a central message and strategy, standardized training of managers and leaders, incentives for participation, and continuous assessments and evaluations. The involvement of senior leadership was generally considered essential to successful program implementation.
- *Outcomes:* Although the evidence base on program outcomes is still developing, employee health programs appear to reduce risk factors and lower health care expenditures.

Most of the companies we examined attempted to bring individual health promotion activities under the broader umbrella of employee health. The civilian case studies shed light on integration in the sense of introducing new programs related to employee health, specifically health promotion programs, thereby increasing the breadth of their employee health system. However, there was little effort to link these new health promotion programs with more traditional occupational safety and health policies and practices. Furthermore, there was little activity in the case studies related to linking or information sharing between individual employee health programs (e.g., industrial hygiene staff working with the health promotion staff).

We conclude that there are lessons to be learned from the companies in the case studies related to specific types of program designs and important elements in the programs that lead to better outcomes. A general lesson is that the attention of senior leadership is important for a successful employee health program.

However, we found little evidence of comprehensive employee health integration in these companies. None had a single office responsible for all aspects of employee health or a single IT system containing data on all aspects of employee health that might serve as a model for DoD. In many ways, DoD might be farther along the continuum toward an integrated employee health system² than the companies we studied.

Observations and Conclusions

The lessons from the civilian case studies, in combination with our analysis of DoD policies and programs, prompt the following observations for DoD.

Leadership Attention Is an Important Aspect of Civilian Integrated Employee Health Programs

A significant lesson from the civilian case studies is that leadership attention is key to a successful employee health program. The case study organizations have clear goals and metrics related to employee health that are communicated from the top of the organization. In 2001, the National Safety Council made a similar recommendation to DoD regarding leadership

² *Employee health* refers to all aspects of a service member's experience that relates to his or her health, including inpatient and outpatient medical care, preventive services, other activities related to health promotion and wellness, occupational health, environmental monitoring, surveillance, and health monitoring.

emphasis on safety, and it estimated the cost of safety mishaps as a baseline measure. DoD responded quickly and effectively to this recommendation: the Secretary established clear goals and appointed a high-level committee to oversee program implementation, reporting, and measurement.

As part of the effort to focus leadership attention on issues related to employee health integration, DoD should estimate the incidence and cost of preventable illnesses and occupation-related illnesses among its forces to provide a baseline similar to one established for accidental injuries by the DSOC. This step would allow leaders to set measurable goals and measure progress against a clearly defined performance target, which would lead to accountability. Health outcomes, cost savings, retention, and readiness are all important to measure.

DoD might approach employee health as it has approached safety, by appointing an oversight committee similar to the DSOC or expanding the DSOC charter to include a broader range of employee health activities. The Joint Preventive Medicine Policy Group (JPMPG) or the Defense Health Board could also play an important role in integrating employee health activities by heightening senior leadership awareness of the benefits of integrating employee health activities related to SOH with medical care and health promotion/wellness activities.

Coordination Across Organizational Boundaries Is Essential to a More Integrated System

SOH activities cut across many disciplines. It is not surprising, then, that SOH responsibilities reside in various organizations in DoD. Safety policies are promulgated and monitored by the Under Secretary of Defense (Acquisition, Technology, and Logistics), reflecting the emphasis on safety during the development and procurement of equipment and the critical role of installations in safety. SOH also requires support from the MHS, which is overseen by the Under Secretary of Defense (Personnel and Readiness). While important, SOH is only one of many functions overseen by these offices. This current organization is reflected in the services as well, with safety offices being distinct from health organizations.

It may be desirable to have a more centralized organization for SOH, as in some civilian organizations, with a single entity to set SOH policy and monitor its execution. However, placing all responsibility for SOH in a single organization would not remove the necessity for cross-organizational coordination.

In the current DoD organization, the need for coordination has been addressed, particularly for safety, with the establishment of the DSOC and through both chartered and informal working groups that coordinate SOH activities across organizations. Additional efforts might be considered to increase similar coordination in occupational health, including, for example, a new organization, similar in structure to the DSOC, but specifically focused on occupational health or, more inclusively, employee health. Alternatively, the DSOC charter might be expanded to include not only safety, but other employee health activities, such as occupational and environmental health, health promotion and wellness, and disability management.

Data Will Be Needed for Post-Deployment Health Studies

Evaluation of occupational and environmental exposures related to employee health is a fundamental function of an integrated employee health system. Therefore, access to the data needed to perform this task should be a top priority. Comprehensive data on all environmental monitoring in deployment theaters are not currently available from a centralized source. In addition, data from AHLTA are not linked with workplace environmental exposure data from DOEHRIS-IH or service-level systems to allow population-level analysis. Eventually the envi-

ronmental monitoring data in the EH module of DOEHRS-IH and health outcome data in AHLTA will be linked. It is unlikely that these systems will be ready in time to fully support the health studies needed to evaluate the health effects of current deployments in Afghanistan and Iraq. In the interim, OSD health professionals are using other methods to link environmental and health outcome data, without the benefit of a centralized data system.

Multiple IT Systems Contain Individual Health Data

An ideal IT system for an integrated employee health system would create a single record to track and report on an individual's exposures, medical care, and health status. This ideal is the intent of DoD's electronic health record, AHLTA, which will eventually contain all health utilization information in a single record. However, other medical data exist outside the AHLTA system that, if linked or added to the AHLTA record, would create a more complete longitudinal electronic health record. Two opportunities to enhance the completeness of the AHLTA record would be to link or add the following to a service member's AHLTA record:

- audiometric data collected and stored in the DOEHRS-HC system
- all health and medical data collected during the MEPS physical exam (e.g., hearing and vision test results).

Linkage of these data to the individual medical records in AHLTA would be through a clinical data warehouse.

Conclusions

As we began this study, we hypothesized that, despite differences in size, complexity, and governance, civilian models could inform future DoD efforts toward a more integrated employee health system. However, we identified no panacea in the investigation of "model" civilian employee health programs that could be directly adopted by DoD. The civilian companies—motivated by cost savings—provide some useful lessons in their implementation of specific employee health-related initiatives. However, we did not learn lessons regarding coordination among programs related to employee health or data linkages through IT systems.

As noted, the DoD's reasons for seeking to integrate employee health differ in fundamental ways from those of civilian organizations. In addition, DoD potentially has more opportunities to influence the health of its employees, particularly active duty personnel. In comparison to most civilian companies, DoD has more mature employee IT systems and, perhaps more important, is responsible for the complete health care of active duty personnel. These factors provide opportunities for comprehensive data collection and health interventions that can support further integration of employee health activities. The current, comprehensive activities related to employee health in DoD—including industrial hygiene, safety, health promotion and wellness, and medical care, and its relatively mature health IT infrastructure—indicate that there might be less need to introduce new employee health programs and more need to make use of the information generated by the existing programs in a more coordinated manner.